

# Change tolerance, group focus and students' entrepreneurial intentions: does gender matter?

192

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## Abstract

**Purpose** – This study examines the impact of cultural dimensions on entrepreneurial intentions (EIs) and the mediating role of planned behavior (TPB) determinants between change tolerance (CT), group focus (GF), and EIs for both men and women in the context of international business schools.

**Design/methodology/approach** – Using a quantitative research design, data were collected in France through anonymous questionnaires. The data consisted of responses from 480 business students. Structural equation modeling (SEM) and the bootstrap method with PROCESS macro were used to determine the significance of the mediation effects.

**Findings** – Results reveal the strong impact of CT on the EIs of both men and women through TPB antecedents. They also indicate that GF has an indirect effect on EIs through TPB antecedents for men and an indirect multiple mediation effect on EIs through CT and TPB antecedents for both men and women.

**Originality/value** – The extended TPB model is original in that it supports both the determinants of planned behavior and cultural dimensions and provides a valuable perspective through its findings on cultural and gender diversity in entrepreneurship.

**Keywords** Change tolerance, Group focus, Entrepreneurial intentions, Gender differences, Cultural dimensions, Business schools

**Paper type** Research paper

## Introduction

As entrepreneurship plays an important role in stimulating economic growth, it continues to attract the attention of scholars who attempt to understand its processes and the social factors that lead to its development across different countries (Doran *et al.*, 2018; Lu *et al.*, 2021; Rico and Cabrer-Borrás, 2019; Seyoum *et al.*, 2021). This is particularly true for Europe, which suffers from gender imbalance in entrepreneurship due to socio-cultural barriers that have traditionally put women at a structural disadvantage, leading to missed opportunities, both socially and economically (World Economic Forum, 2020).



Previous studies have focused on entrepreneurial intentions (EIs) as they help predict future entrepreneurial actions (Bogatyeva *et al.*, 2019; Krueger *et al.*, 2000; Liñán and Chen, 2009; Nowiński and Haddoud, 2019; Seyoum *et al.*, 2021). Research on gender differences in entrepreneurial intentions revealed that men have stronger EIs than women (Díaz-García and Jiménez-Moreno, 2010; Santos *et al.*, 2016; Sweida and Sherman, 2020; Yukongdi and Lopa, 2017). However, more empirical evidence is needed to explain such variations (Choukir *et al.*, 2019; Elnadi and Gheith, 2021; Gurel *et al.*, 2021; Shinnar *et al.*, 2012). Some scholars argue that differences may exist due to contextual influences that affect the perceptions of men and women (Byrne and Fayolle, 2010; Moriano *et al.*, 2012; Haddad *et al.*, 2016, 2021; Haddad, 2017); hence, many studies have attempted to combine gender with culture to investigate EIs across different nations and cultures (Liñán and Chen, 2009; Shinnar *et al.*, 2012, 2018). Unique cultural contexts may indeed present opportunities and challenges for driving entrepreneurship (Elnadi and Gheith, 2021; Gurel *et al.*, 2021; Krueger *et al.*, 2013). However, macro-level studies neglect within-group differences and the fact that members of a particular nation may vary in the extent to which they relate or adhere to prevailing cultural norms and values (Kirkley, 2016; Pruett *et al.*, 2009).

To examine how change tolerance (CT) and group focus (GF) affect the EIs of 480 students in French international business schools, this study leans on the theory of planned behavior (TPB) (Ajzen, 1991), which is widely applied in entrepreneurship research to investigate intentions (Lortie and Castogiovanni, 2015) and individual cultural dimensions (Solomon and Schell, 2009). This study addresses a gap in current knowledge regarding the way in which individual cultural values affect EIs across genders. Reliance on a student sample is quite common when examining intentions (Liñán and Chen, 2009; Shinnar *et al.*, 2012; Choukir *et al.*, 2019; Haddad *et al.*, 2021) because students need to make immediate career choices and starting a new venture may be a realistic option for them (Krueger *et al.*, 2000). Choosing international business schools in France as the context for this research stems from the fact that the country is supportive of entrepreneurship and highly responsive to the needs of business creators. Furthermore, multinational schools are a typical environment for studies dealing with cultural diversity.

The rest of this paper is organized as follows. Section 2 outlines the theoretical framework and the research hypotheses that derived from it. Section 3 provides a full description of the methods and instruments used. The findings of the statistical analyses are reported in Section 4. A discussion is detailed in Section 5. Finally, concluding remarks regarding the implications of the study and future research avenues are outlined in Section 6.

## Theoretical framework

### *Entrepreneurial intentions*

Several scholars have stated that EIs and cognitive structures are essential for understanding entrepreneurship (Krueger *et al.*, 2000; Krueger, 2017; Liñán and Chen, 2009). As it is an immediate antecedent of behavior, a significant body of research uses intention models and focuses on intention (Ajzen, 1991). One of the most widely used models to explore the direct and indirect antecedents of intentions is the TPB (Ajzen, 1991). The TPB model includes three motivational factors that affect EIs. The first is the personal attitude toward entrepreneurship, which refers to the extent to which a person has a positive or negative assessment of entrepreneurship. The second is subjective norms and refers to the role of significant others (e.g. family, relatives and friends) in approving or disapproving of entrepreneurial behavior. The third is perceived behavioral control, which refers to the perception of difficulty or ease to undergo the entrepreneurial process (García-Rodríguez *et al.*, 2015). Perceived behavioral control is a proxy of the self-efficacy concept coined by Bandura (1977), which refers to the self-perception of the capacity to perform a certain action, such as establishing a new business (Krueger *et al.*, 2000). Lortie and Castogiovanni (2015) demonstrate the robustness of the TPB model in entrepreneurship research and its

capacity to explain EIs. The overall conceptual model that illustrates the relationships between TPB constructs, EIs and cultural influences on entrepreneurship is illustrated in Figure 1.

*Gender and entrepreneurial intentions*

Previous studies suggest that men exhibit stronger EIs than women (Díaz-García and Jiménez-Moreno, 2010; Sweida and Sherman, 2020; Yordanova and Tarrazon, 2010; Yukongdi and Lopa, 2017). Gender differences exist because of the manner in which self-beliefs and attitudes toward entrepreneurship are developed. Previous research indicates that women tend to perceive lower opportunities and higher barriers to entrepreneurship than their male counterparts (Santos *et al.*, 2016). These variations can be explained by the dissimilar effect of contextual influences on the perceptions of men and women (Byrne and Fayolle, 2010; Elnadi and Gheith, 2021; Haddad and Loarne, 2015), the roles they are attributed in society (Haddad, 2017), and the type of education they receive (Haddad *et al.*, 2016; Gurel *et al.*, 2021; Boubker *et al.*, 2021; Lu *et al.*, 2021). Díaz-García and Jiménez-Moreno (2010) demonstrate that subjective norms related to entrepreneurship can greatly affect the EIs of women because they are highly conditioned by societal values and the roles ascribed to them. They generally believe that they are less qualified than men for entrepreneurial work (Stedham and Wieland, 2017). The low self-efficacy they have compared to men affects their EIs and their propensity to follow an entrepreneurial career (Haddad *et al.*, 2016; Santos *et al.*, 2016). However, the effect of high self-efficacy on intentions is stronger for women (Kickul *et al.*, 2008). Despite numerous studies that acknowledge differences between men and women in terms of EIs, some scholars argue that empirical evidence is still insufficient to explain such variations (Shinnar *et al.*, 2012, 2018). Based on previous findings regarding gender and EIs, this study posits the following hypotheses:

- H1a. Gender differences exist in entrepreneurial intentions, such that the effect of personal attitude toward entrepreneurship on intentions is stronger for men.
- H1b. Gender differences exist in entrepreneurial intentions, such that the effect of subjective norms on intentions is stronger for women.
- H1c. Gender differences exist in entrepreneurial intentions, such that the effect of perceived behavioral control on intentions is stronger for women.

*Cultural influences on entrepreneurship*

Morris *et al.* (1994, p. 70) define culture as a “learned, socially transmitted set of behavior standards.” It is the “collective programming of the mind that distinguishes the members of

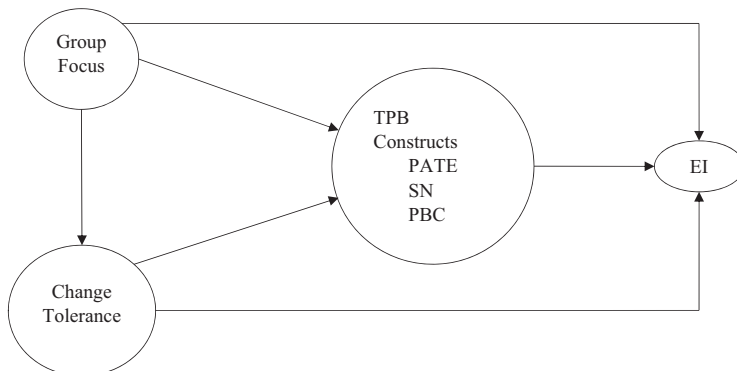


Figure 1.  
Conceptual model

one human group from another” and comprises systems and values (Hofstede, 1980, p. 25). They influence the extent to which people and societies consider entrepreneurial behaviors as desirable (Watson *et al.*, 2019). National culture is often seen as central to the entrepreneurship field. Among its different conceptualizations, Hofstede’s (1980) dimensions are the most widely used in entrepreneurship and management studies (Watson *et al.*, 2019). Unique cultural, national, and institutional contexts present opportunities and challenges for driving entrepreneurship (Krueger *et al.*, 2013). Previous research acknowledges the impact of culture on EIs using national cultural dimensions. However, these studies neglect within-group differences and the fact that members of a particular nation may vary in the extent to which they relate or adhere to prevailing cultural norms and values (Kirkley, 2016; Pruett *et al.*, 2009). The current study focuses on two individual cultural dimensions, CT and GF, to investigate their direct and indirect effects on EIs.

### *Change tolerance*

Change tolerance refers to the comfort level with novelty, risk taking and change (Solomon and Schell, 2009). Highly change-tolerant people take risks and view transformation as a natural part of their lives. They are creative, flexible and receptive to innovative ideas and do not fear failure to undertake new ventures (Solomon and Schell, 2009). Hofstede (2001) demonstrated that people who accept uncertainty are more at ease with new situations, which leads them to launch new businesses. Other research linked tolerance to change with innovation, thus explaining that change-tolerant people are more prone to developing innovative ways of doing things (Mueller and Thomas, 2001; Shane, 1993) and take advantage of opportunities they identify in their surroundings (Busenitz, *et al.*, 2000). Numerous studies support the fact that societies that encourage risk taking and acknowledge uncertainty tend to have more entrepreneurial members (Kreiser, *et al.*, 2010; McGrath *et al.*, 1992; Mueller and Thomas, 2001). Moreover, it has also been revealed that there is a strong relationship between risk tolerance and self-efficacy (Serino and Buccino, 2019) and between high-risk preference and EIs (Gurel *et al.*, 2021; Nasip *et al.*, 2017). Regarding gender differences in relation to risk taking, the literature indicates that women are more risk-averse than men, which negatively influences their propensity to step into entrepreneurship (Shinnar *et al.*, 2012, 2018). Despite this, women in some contexts, such as Sub-Saharan societies, may seek entrepreneurship to achieve higher social positions (Anlesinya, 2019).

Based on the theory that CT is associated with high comfort when dealing with risk, novelty, and change, that risk taking is associated with entrepreneurship attitude and self-efficacy, and that men are more risk tolerant than women, this study formulates the following hypotheses:

- H2a.* Gender differences exist in entrepreneurial intentions, such that the direct effects of change tolerance on intentions is stronger for men.
- H2b.* Gender differences exist in entrepreneurial intentions, such that the indirect effects of change tolerance on entrepreneurial intentions, through TPB antecedents, is stronger for men.

### *Group focus*

As defined by Solomon and Schell (2009) at the individual level, GF could be matched with Hofstede’s (1980) cultural dimension of collectivism. People in group cultures always seek consensus in decisions and seldom take the initiative or implement changes without discussing it with the group. They are motivated by greater security and affiliation opportunities (Solomon and Schell, 2009). Bullough *et al.* (2017) divided collectivism into two categories: institutional and in-group collectivism. Institutional or societal collectivism reflects the degree to which society,

such as laws, social programs and institutions, values group fidelity and unity over individual accomplishments. On the other hand, in-group collectivism reveals the extent to which people express dignity, trustworthiness, and solidarity in their families and how much they depend on them (Bullough *et al.*, 2017). In contrast, people in individualistic cultures focus on personal achievement and feel responsible for their own actions (Hofstede, 1980). They are motivated by the recognition of their talents and achievements and have the capacity to evaluate risk and make quick decisions (Solomon and Schell, 2009). Several empirical studies have revealed the positive influence of individualistic cultures on entrepreneurship since they accentuate the identity of an individual more than their society, which increases self-confidence, initiative and courage to take risks (Hayton *et al.*, 2002; Mueller and Thomas, 2001; Rantanen and Toikko, 2017). Some previous works conceptualized collectivism and individualism as two opposing dimensions, while others suggested that they constitute two different attributes at the individual level, implying that a person can have both tendencies depending on the different situations they encounter (Farrukh *et al.*, 2019; Rantanen and Toikko, 2017). Thus, individualism and collectivism do not imply two ends of the same scale (Oyserman, 2006). People may hold both an autonomous and a reliant sense of self, and each of these two dimensions may prevail across different circumstances (Markus and Kitayama, 1991). Rantanen and Toikko (2017) found that collectivism and individualism are significant factors in determining EIs. On the one hand, because individualist values such as individual autonomy and competitiveness promote entrepreneurial intentions, and on the other, because communality creates a socio-cultural capital that positively impacts EIs. Collective practices are then significant for entrepreneurial development because working in teams is an opportunity to solve problems and find and implement innovative ideas (Anlesinya, 2019; Lechler, 2001). The controversial findings regarding collectivist values and entrepreneurship in studies that applied the TPB model call for a deeper understanding of the impact of GF. While supporting the evidence that no gender differences exist in relation to the individualism/collectivism dimension (Hofstede, 2001; Shinnar *et al.*, 2012), we formulate the following hypotheses:

- H3a.* Group focus has a direct positive and significant impact on entrepreneurial intentions.
- H3b.* Group focus has an indirect positive and significant impact on entrepreneurial intentions through TPB antecedents.

Individuals driven by a GF mindset are more inclined to meet others' expectations and sustain social harmony (Solomon and Schell, 2009); they seek motivation and support from others to take entrepreneurial risks and create new ventures (Anlesinya, 2019; Lechler, 2001; Rantanen and Toikko, 2017). Further, the knowledge that a learner acquires through formal and informal activities in educational environments alters their perceptions and attitudes, thus producing behavioral changes such as the willingness to undergo new experiences, develop new ideas and skills, and try new things (Matthews *et al.*, 2020). A gender comparative study indicates that interactions with people help individuals, particularly women, to develop their entrepreneurial opportunities and boost their self-confidence to take risks and engage in the entrepreneurial process (Haddad and Loarne, 2015). Nevertheless, the theoretical evidence that group interactions can reduce risk aversion remains scarce. This study provides empirical proof on the mediation effect of CT between GF and EIs. Consequently, the following hypotheses are formulated:

- H4a.* Change tolerance mediates the relationship between group focus and entrepreneurial intentions.
- H4b.* Change tolerance and TPB antecedents mediate the relationship between group focus and entrepreneurial intentions.

## Methodology

This study examines the relationships between CT, GF, TPB constructs and students' EIs. A questionnaire survey was administered to 480 students, all pursuing degrees in business administration. This method of convenience sampling is extensively used in entrepreneurship research (de Jorge *et al.*, 2012; Karimi *et al.*, 2013, 2014; Liñán *et al.*, 2011). The questionnaire was subsequently administered to students in an electronic form using the data collection tool Sphinx. Overall, 425 responses were received, and after data cleaning and screening for missing data and outliers (Hair *et al.*, 2014), 407 valid questionnaires were obtained, with an effective response rate of 84.79%. A total of 47.9% of the respondents reported being male, while 52.1% of respondents were female. Overall, 76% of them were aged 18–25 years, while 23.6% were over 25 years of age. In terms of education level, 34.4% were undergraduates, 40% graduates and 25.6% had completed a post-graduate course.

## Measurement

The survey instrument included measurement scales used in other research and was assessed using self-report measures based on multi-item scales.

### *Entrepreneurial intentions (EIs)*

To assess entrepreneurial intentions, we used the scale used in earlier studies (Liñán *et al.*, 2011; Liñán and Chen, 2009). The construct consisted of four items measured on a seven-point Likert scale (1 = total disagreement to 7 = total agreement with each statement). A single-overall sub-scale was used to measure the following intentions: ready to do anything to be an entrepreneur, professional goal to be an entrepreneur, making every effort to start and run a firm, and determined to create a firm. Confirmatory factor analysis (CFA) suggested a single dimension of entrepreneurial intentions with an acceptable critical ratio for the items 0.76, average variance extracted of 0.65, and Cronbach's alpha reliability of 0.86. The average score of the six items was calculated and labeled *EI*.

### *TPB constructs*

We assessed the TPB constructs, that is, personal attitude toward entrepreneurship (PATE), subjective norms (SN) and perceived behavioral control (PBC) using a similar scale to that used by earlier research (Liñán *et al.*, 2011; Liñán and Chen, 2009). PATE was measured as being an entrepreneur is advantageous, career as an entrepreneur is attractive, willingness to start given the resources, and being an entrepreneur would entail great satisfaction. The measures of SN were approval of the decision to create a firm by close family, friends, or colleagues. PBC was assessed using knowledge of necessary practical details to start a firm, knowing how to develop an entrepreneurial project, and having a high probability of success. For all TPB constructs, we employed a seven-point Likert scale to measure responses (1 = total disagreement to 7 = total agreement with each statement). CFA suggests that all three constructs of TPB are supported, and reliability testing also found strong support for PATE (CR = 0.82; AVE = 0.74 and  $\alpha = 0.90$ ), SN (CR = 0.81; AVE = 0.83, and  $\alpha = 0.93$ ), and PBC (CR = 0.62; AVE = 0.59 and  $\alpha = 0.74$ ). The three TPB constructs were labeled *PATE*, *SN* and *PBC*, respectively.

### *Cultural variables*

The cultural variables change tolerance (CT) and group focus (GF) have been introduced to the TPB model for the first time through this study. Following Solomon and Schell (2009), we measured CT using change generally improves process, people should be encouraged to take prudent risks, comfortable introducing changes in life, and positive spin on new



ideas proposed. GF was measured by solving challenges in groups, team members clearing their work with each other, recognition as part of a team, and comfortable presenting business plan in a team. Measurement was performed using a five-point Likert scale (one = total disagreement to five = total agreement with each statement) for both CT and group focus.

## Results

### Measurement model

As outlined by Anderson and Gerbing (1988), a CFA model was employed to assess the overall fit of the measurement model. The results are presented in Table 1. Overall, we found strong support for the measures with acceptable standardized loading for all items as well as critical ratios above the threshold of 2.0. We examined the scale items, factor

Scales	Standardized loading	Critical ratio
<i>EIs (Entrepreneurial intentions) (seven-point Likert-type scale: 1 representing strong disagreement to 7 representing strong agreement)</i>		
1. I am ready to do anything to be an entrepreneur	0.74	14.1
2. My professional goal to become an entrepreneur	0.85	16.0
3. I will make every effort to start and run my own firm	0.80	15.1
4. I have thought very seriously about starting a firm	0.72	14.1
<i>PATE (Personal attitude toward Entrepreneurship) (seven-point Likert-type scale: 1 representing strong disagreement to 7 representing strong agreement)</i>		
1. Being an entrepreneur implies more advantages than disadvantages to me	0.73	17.7
2. A career as entrepreneur is attractive for me	0.89	24.1
3. If I had the opportunity and resources, I'd like to start a firm	0.86	24.1
4. Being an entrepreneur would entail great satisfaction for me	0.86	23.7
<i>SN (subject norm) (If you decide to create a firm, would people in your close environment approve of that decision?)</i>		
1. Your close family	0.87	26.2
2. Your friends	0.94	32.2
3. Your colleagues	0.89	31.5
<i>PBC (Perceived behavioral control) (seven-point Likert-type scale: 1 representing strong disagreement to 7 representing strong agreement)</i>		
1. I know the necessary practical details to start a firm	0.58	36.8
2. I know how to develop an entrepreneurial project	0.99	36.8
3. If I tried to start a firm, I would have a high probability of succeeding	0.63	33.2
<i>CT (change tolerance) (five-point Likert-type scale: 1 representing strong disagreement to 5 representing strong agreement)</i>		
1. I think that change generally improves process	0.65	10.7
2. I believe that people should be encouraged to take prudent risks	0.69	11.2
3. I am comfortable introducing changes into my daily life	0.65	10.5
4. When proposing new ideas, I like to put a positive spin on them	0.70	10.7
<i>GF (group focus) (five-point Likert-type scale: 1 representing strong disagreement to 5 representing strong agreement)</i>		
1. When confronted with a challenge, I prefer to solve it with a group	0.62	9.0
2. I believe that team members should clear their work with each other	0.65	9.0
3. I prefer to be recognized as part of a team (rather than alone)	0.60	8.6
4. I am most comfortable presenting a business plan as part of a team	0.58	8.4

**Table 1.** Confirmatory factor analysis (CFA) of items and measurement properties of the scales

loadings, reliability and fit statistics and found them all to be in the acceptable range. This suggests that the standardized loadings significant for the items and the constructs are acceptable. Convergent validity can be determined when the item coefficients of the latent construct are significant. [Anderson and Gerbing \(1988\)](#) suggest that when the corresponding *t*-values (critical ratios) are greater than 2.0, there is evidence of convergent validity. CFA was also achieved by observing that each item loaded significantly on the factor. The fit indices suggest that the model fits the data very well ( $\chi^2/df = 1.605$ , RMSEA = 0.039, TLI = 0.970, CFI = 0.974, GFI = 0.935). These approaches confirmed the discriminant and convergent validity of the constructs in the model ([Anderson and Gerbing, 1988](#); [Fornell and Larcker, 1981](#)). The construct values, Cronbach's alphas, critical ratio and average variances extracted for each construct are reported in [Table 2](#).

The correlations for the constructs used in this analysis are presented in [Table 3](#). These findings provide further evidence for the discriminant validity of the measures employed herein.

*Research model results*

Following CFA, the structural model was examined using IBM-AMOS to validate the hypothesized model. We use a two-step analysis process following [Anderson and Gerbing \(1988\)](#). The first step involved a multistage process to validate the overall construct validity of the measures used in this study. The second step employed SEM to test our hypotheses simultaneously and the mediating effects of change tolerance and the TPB constructs on EIs. Following [Anderson and Gerbing \(1988\)](#), the error variances of the composite scores were used for the latent variables. The results of the final structural model, along with the standardized coefficients of each hypothesized path and the model fit indices, are reported in [Table 4](#).

This study employed the bootstrapping technique. Data were bootstrapped with 5,000 samples to explain the relationships between cultural influences on TPB and EI. The overall hypothesized model is illustrated in [Figure 2](#).

Construct	Cronbach's alpha	CR	AVE
EIs	0.86	0.72	0.61
PATE	0.90	0.78	0.70
SN	0.93	0.78	0.80
PBC	0.95	0.59	0.57
CT	0.77	0.80	0.45
GF	0.71	0.70	0.38

**Table 2.** Summary of constructs

	1	2	3	4	5
1 EIs					
2 PATE	0.58**				
3 SN	0.61**	0.71**			
4 PBC	0.61**	0.72**	0.88**		
5 CT	0.27**	0.36**	0.22**	0.23**	
6 GF	0.03	0.23**	0.10	0.11*	0.40**

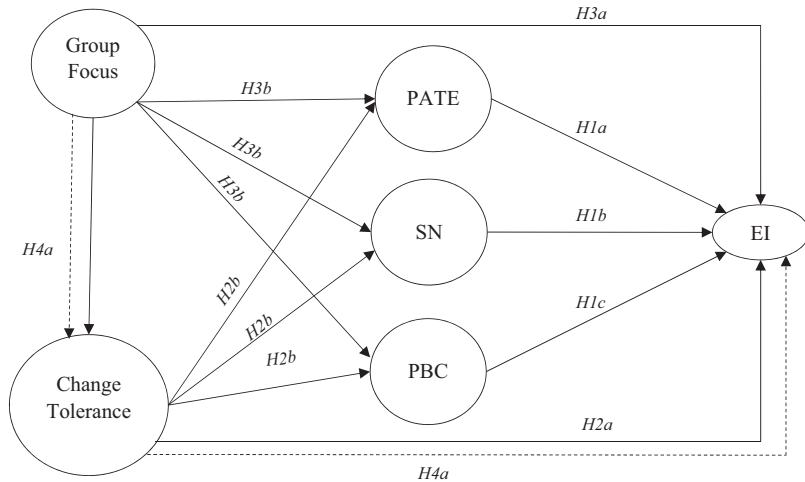
**Note(s):** \*\**p* < 0.01, \**p* < 0.05

**Table 3.** Correlations of constructs



Hypotheses	Relationships/Structural path	Men	Women	Accepted/Not supported
<i>Theory of planned behavior</i>				
<i>H1a</i>	PATE → EIs	0.34***	0.18**	Accept
<i>H1b</i>	SN → EIs	0.30***	0.47***	Accept
<i>H1c</i>	PBC → EIs	0.12**	0.14**	Accept
<i>Cultural influences</i>				
<i>H2a</i>	CT → EIs	0.10 (ns)	0.11*	Not supported
<i>H2b</i>	CT → PATE	0.40***	0.27***	Accept
<i>H2b</i>	CT → SN	0.30***	0.14**	Accept
<i>H2b</i>	CT → PBC	0.32***	0.27***	Accept
<i>H3a</i>	GF → EIs	-0.09 (ns)	-0.19***	Not supported
-	GF → PATE	0.13*	0.05 (ns)	-
-	GF → SN	0.08 (ns)	-0.05 (ns)	-
-	GF → PBC	0.16**	0.11 (ns)	-
Chi-square		5.395		
df		2		
Adjusted Chi-square		2.697	<5	
<i>p</i>		0.067		
RMR		0.031	<0.08	
GFI		0.996	>0.9	
TLI		0.931	>0.9	
CFI		0.995	>0.9	
RMSEA		0.065	<0.0	
<b>Note(s):</b> *, **, *** = $p < 0.10$ , $p < 0.05$ , and $p < 0.001$ , respectively. ns = not significant				

**Table 4.**  
Results of the direct hypothesized paths



**Figure 2.**  
Hypothesized model

*Hypothesis testing*

The results for the significance of each proposed path/relationship were evaluated. For the sample of men, the three dimensions (PATE = 23%, SN = 11%, PBC = 17%) and cultural indicators (CT = 21%) together explained 44% of the variance in EIs. For the sample of women, the three dimensions (PATE = 8%, SN = 2%, PBC = 10%) and cultural indicators (CT = 12%) together explained 44% of the variance in EIs.

Concerning *H1*, all three antecedents of TPB had a significant and positive impact on EIs for both men and women. The impact of PATE on EIs was stronger for men (0.34<sup>\*\*\*</sup>) than for women (0.18<sup>\*\*</sup>), supporting *H1a*. For SN and PBC, the impact was stronger in the case of women (0.47<sup>\*\*\*</sup>, 0.14<sup>\*\*</sup>) than in men (0.30<sup>\*\*\*</sup>, 0.12<sup>\*\*</sup>); thus, *H1b* and *H1c* were also supported.

Regarding *H2*, which concerns the cultural variable of change tolerance, there was a significant and positive impact of CT on the TPB constructs (i.e. PATE, SN, PBC) for both men and women. However, the impact of CT on EIs was not significant for men but was positive and significant for women. *H2a* was not supported as the path from CT to EIs in the case of men was not significant. However, *H2b* was accepted as the paths were significant and stronger for men (0.40<sup>\*\*\*</sup>, 0.30<sup>\*\*\*</sup>, 0.32<sup>\*\*\*</sup>) than for women (0.27<sup>\*\*\*</sup>, 0.14<sup>\*\*</sup>, 0.27<sup>\*\*\*</sup>).

*H3*, which was in relation to the cultural variable group focus, revealed that the direct paths from GF to PATE, SN, and PBC for women were not significant, while for men, there was a significant and positive direct impact from GF to PATE and PBC. Further, the direct relationship between GF and EIs was insignificant for men and significant and negative for women. Thus, *H3a* and *H3b* were not supported.

### Mediating analysis

To examine the mediating role of CT and TPB constructs in the relationship between GF and EIs, we examined several indirect paths using PROCESS macro version 3 (Hayes, 2018) and bootstrapping analysis with 5,000 sub-samples in AMOS. Tables 5 and 6 report the results for specific indirect effects for men and women, respectively. Indirect effects analysis was applied to test the type of mediation (Zhao et al., 2010). Zhao et al. (2010) identified five types of mediation effects: complementary, competitive, indirect only mediation, direct only non-mediation, and no effect non-mediation. Complementary and indirect only mediation are similar to Baron and Kenney's (1986) partial and full mediation, respectively. By examining the significance value of the direct path (see Table 4) and the role of the mediating variables, the variations and type of mediation can be detected between the two samples (see Tables 5 and 6). Where both the direct and indirect effects are significant, partial mediation is achieved. To determine the nature of partial mediation, the product of the direct and indirect effects was calculated; if the sign of the product is positive, then complementary partial mediation is achieved, otherwise, competitive partial mediation is achieved.

Relationships	Effect size	Sig/ns	Lower threshold	Upper threshold	Hypotheses	Mediation type
GF → PATE → EIs	0.042	ns	-0.019	0.114	<i>H3b</i>	-
GF → SN → EIs	-0.007	ns	-0.044	0.023	<i>H3b</i>	-
GF → PBC → EIs	0.015	ns	-0.004	0.054	<i>H3b</i>	-
GF → CT → EIs	0.045	ns	-0.017	0.114	<i>H4a</i>	No-effect (non-mediation)
GF → CT → PATE	0.184	Sig	0.113	0.273	-	Complementary
GF → CT → SN	0.135	Sig	0.067	0.219	-	Indirect-only
GF → CT → PBC	0.145	Sig	0.076	0.225	-	Complementary
<i>Multiple/serial mediation</i>						
GF → CT → PATE → EIs	0.061	Sig	0.020	0.123	<i>H4b</i>	Indirect-only
GF → CT → SN → EIs	-0.002	ns	-0.019	0.012	<i>H4b</i>	No-effect
GF → CT → PBC → EIs	0.013	ns	-0.002	0.033	<i>H4b</i>	No-effect

**Note(s):** sig = significant; ns = not significant

**Table 5.** Specific indirect effects (Men)

**Table 6.**  
Specific indirect  
effects (Women)

Relationships	Effect size	Sig/ns	Lower threshold	Upper threshold	Hypotheses	Mediation type
GF → PATE → EIs	0.008	ns	-0.021	0.049	<i>H3b</i>	-
GF → SN → EIs	-0.039	ns	-0.101	0.018	<i>H3b</i>	-
GF → PBC → EIs	0.012	ns	-0.009	0.038	<i>H3b</i>	-
GF → CT → EIs	0.036	ns	-0.006	0.087	<i>H4a</i>	No-effect
GF → CT → PATE	0.093	Sig	0.044	0.161	-	Indirect-only
GF → CT → SN	0.049	Sig	0.004	0.112	-	Indirect-only
GF → CT → PBC	0.092	Sig	0.043	0.160	-	Indirect-only
<i>Multiple mediation</i>						
GF → CT → PATE → EIs	0.017	Sig	0.001	0.042	<i>H4b</i>	Competitive
GF → CT → SN → EIs	-0.007	ns	-0.033	0.014	<i>H4b</i>	No-effect
GF → CT → PBC → EIs	0.009	Sig	0.001	0.023	<i>H4b</i>	Competitive

**Note(s):** sig = significant; ns = not significant

In the case of both men and women, *H4a*, which posited that CT mediates the relationship between GF and EIs, was not supported as the bootstrap confidence intervals included zero within the lower and upper threshold {men= $(-0.017, 0.114)$ ; women= $(-0.006, 0.087)$ }; thus, the indirect effect was not significant. For both men and women, the indirect effects of GF on TPB constructs through CT were significant and positive. For women, CT fully mediated the relationship between the GF and TPB constructs. GF explained EIs of women through the TPB. For men, following *Zhao et al. (2010)*, the sign of the product of direct and indirect effects (in the case of PATE and PBC) was calculated. This was a case of complementary mediation, as the sign of the product was positive (*Zhao et al., 2010*). Thus, there was complementary partial mediation through CT in case of the impact from GF to PATE and PBC, and full mediation through CT for GF to SN. GF indirectly explained the EIs of men through the SN and both directly and indirectly through PATE and PBC.

*H4b* concerned serial mediation in the mediating role of both CT and TPB constructs (PATE, SN, and PBC) between GF and EIs. First, the specific indirect effects through CT and each TPB construct (serial mediation) were evaluated (see *Tables 5 and 6*), and the total indirect effects (parallel mediation) were then examined between the two samples (see *Table 7*). For men, the direct effect of GF on EIs was not significant, although the specific indirect effects of GF on EIs through CT and PATE were significant and positive (0.061 (0.020, 0.123)), thus confirming that CT and PATE together fully mediate the relationship between GF and EIs of men. However, for women, the direct effect of GF on EIs was significant and negative ( $-0.19^{**}$ ). Moreover, the specific indirect effects of GF on EIs through CT and PATE (0.017 (0.001, 0.042)) and CT and PBC (0.009 (0.001, 0.023)) were significant and positive, thus confirming the presence of competitive partial mediation.

**Table 7.**  
Comparison between  
total indirect and direct  
effects

Relationships	Men		Women	
	Effect size (Bootstrap CI/p value)	Sig/ns	Effect size (Bootstrap CI/p value)	Sig/ns
CT → EIs (direct effect)	0.099 ( $p = 0.142$ )	ns	0.107 ( $p = 0.063$ )	Sig
GF → EIs (direct effect)	-0.088 ( $p = 0.155$ )	ns	-0.190 ( $p < 0.001$ )	Sig
CT → EIs (through TPB)	0.262 (0.165, 0.367)	Sig	0.153 (0.062, 0.249)	Sig
GF → EIs (through CT and TPB)	0.249 (0.145, 0.360)	Sig	0.087 (-0.016, 0.188)	Sig

**Note(s):** sig = significant; ns = not significant

The other specific indirect effects through CT and SN, and CT and PBC were not significant for men. Likewise, for women, the specific indirect effects through CT and SN on the relationship between GF and EIs were not significant.

The total indirect effects are the sum of all the specific indirect effects through all the mediators of the causal antecedent on the consequent variable (Hayes, 2018). A comparison between the direct effect of GF on EIs and CT on EIs and the total indirect effects through the mediators are illustrated in Table 7. To explain the EIs of men, both CT and GF indirectly explain more through PATE, SN and PBC. TPB constructs fully mediate the relationship between CT and EIs, and CT and TPB constructs fully mediate the relationship between GF and EIs in men. On the other hand, for women, adding TPB constructs as mediators enhanced the relationship between CT and EIs. Furthermore, CT and TPB constructs as mediators to explain the relationship between GF and EIs of women, had a significant and net positive effect.

## Discussion

This study developed an integrative model using two cultural dimensions (CT and GF) and the TPB model to understand how these dimensions influence students' intentions toward entrepreneurship.

### *Antecedents of intentions and gender*

The significant relationship between PATE and EIs for both genders, even if stronger for men, reveals that young women no longer feel that they are less qualified than men for entrepreneurial careers, thus breaking gender stereotypes, which traditionally associate entrepreneurship with masculinity traits (Stedham and Wieland, 2017). While there were inconsistencies in previous findings about SN (Moriano *et al.*, 2012), the current study demonstrates the importance of this factor for both genders. The relationship between SN and EIs is stronger for women. This could be justified by the fact that women, more than men, tend to be strongly influenced by societal values and the roles ascribed to them (Haddad, 2017; Haddad and Loarne, 2015; Sweida and Sherman, 2020). Their social circle's positive view of entrepreneurship has an impact on their intentions. The link between PBC and EIs, which is positive and significant for male and female students, reiterates the importance of self-efficacy in explaining EIs (Elnadi and Gheith, 2021; Krueger *et al.*, 2000; Santos *et al.*, 2016). Consistent with Kickul *et al.* (2008), the current study revealed that the relationship is stronger for women. This could be explained by the fact that low self-efficacy is usually considered a major barrier to female entrepreneurship (Haddad *et al.*, 2016). Women with high self-efficacy tend to adopt unconventional paths (Bandura, 1977) and show eagerness to undergo the entrepreneurial process.

### *Change tolerance*

This study examined the impact of CT on TPB antecedents and EIs, either directly or through mediating effects. The findings reveal a direct and positive relationship between CT and EIs for women students and not for men. However, the mediation effect between CT and EIs through EIs antecedents (PATE, SN, PBC) was stronger for men. This implies that women students who are tolerant to change tend to have higher EIs than their male counterparts. These results align with previous research demonstrating that risk-tolerant women show a strong tendency toward entrepreneurial activities (Anlesinya, 2019; Gurel *et al.*, 2021). One possible explanation of the findings on CT may stem from the French context of the study. In France, the role of women has been revolutionized and they have been encouraged to take initiatives and risks without fear of making mistakes or being rejected by their community.

Furthermore, the current research illustrated the positive and significant impact of CT on TPB antecedents for both genders; however, it exerted a stronger influence on men than women. This finding confirms the fact that men, being more change-tolerant and less risk-averse than women, show higher entrepreneurial propensity (Yukongdi and Lopa, 2017), and have a higher self-efficacy level (Serino and Buccino, 2019). Moreover, women with high levels of CT culture feel less conditioned by societal influences and less sensitive to SN (Haddad *et al.*, 2016).

#### *Group focus and the mediating effect of change tolerance*

The results reveal there is no direct link between GF and EIs for men; however, the relationship is negative and significant for women. This indicates that, in the men's sample, collective practices do not influence intentions toward entrepreneurship. In the women's sample, high-level GF leads to a low level of EIs. This contradicts the findings of Rantanen and Toikko (2017) and Lechler (2001) regarding the importance of collective practices in entrepreneurial development. The absence of an indirect effect between GF and EIs through TPB antecedents for both genders contradicts previous research (Farrukh *et al.*, 2019; Hueso *et al.*, 2020), which proved the mediating effect of SN between collectivism and EIs. A plausible reason for GF not positively and significantly impacting EIs, either directly or indirectly, could be the French environment itself. France is considered a developed country where people receive support from institutions such as the government, laws, and social programs. Students depend more on institutional rather than in-group collectivism to create new business ventures (Bullough *et al.*, 2017). Another reason could be that students may hold both an independent and dependent sense of self, and each of these two dimensions may prevail across different contexts (Markus and Kitayama, 1991).

Another important finding is the multiple mediation effect of CT and TPB antecedents between GF and EIs. This finding holds for both genders, but it is higher for men, which could be explained by the dissimilar effect of contextual influences on the perceptions of both genders (Byrne and Fayolle, 2010). One possible explanation for the mediation effects could be the multicultural context of international business schools in France. Students from different nationalities interact together and mutually influence each other, which may lead them to be more open minded and more tolerant regarding innovation and change (Matthews *et al.*, 2020; Shane, 1993). The shared cultural values among students may influence the extent to which they consider entrepreneurial behaviors as feasible and desirable, hence nurturing positive intentions toward entrepreneurship (Haddad *et al.*, 2021; Krueger *et al.*, 2013; Watson *et al.*, 2019).

#### **Conclusion**

Entrepreneurship is one of the primary drivers of economic growth; thus, it is essential to gain better insights into the factors that affect its development. To the best of our knowledge, no study has compared and contrasted gender differences in relation to the direct and indirect role of CT and GF in predicting EIs among business students. Thus, this study contributes to the literature on culture, gender, and entrepreneurship by developing an extended framework of TPB that integrates individual cultural dimensions and establishes comparisons between men and women.

#### *Research implications*

The theoretical implications of this study are threefold. The first is that national cultural dimensions fall short of explaining/predicting EIs in a diverse context, such as international business schools. Future research should focus more on the context, on multiculturalism, on

the individual dimensions, and the way they impact EIs. The second implication is that it explains the controversial findings about collective values and practices by revealing that, on their own, they fail to drive positive intentions toward entrepreneurship unless they occur in a culture that is open minded and tolerant to novelty, risk, and change. The third implication relates to gender differences. The study aligns with previous research, thus showing that men are more tolerant to change than women. However, women who are tolerant to change have higher EIs than their male counterparts and feel less conditioned by societal influences and SN.

This study has practical implications for business schools. It informs education managers about the need to create an environment that encourages diversity and fosters free thinking, risk taking, mistake-driven learning, and tolerance to change. Academics can work on implementing shared cultural values and beliefs regarding the importance of entrepreneurship and the increasingly growing role of women as major players in economic growth. Moreover, business schools could create an entrepreneurial environment with appropriate institutional infrastructure and culture that encourages and strengthens students' self-efficacy and ambition to become entrepreneurs. Thus, it is suggested that they provide entrepreneurship modules in their curricula to increase students' EIs. Entrepreneurial education needs to be based on practical actions and peer-to-peer learning that capitalizes on collective practices in a change-tolerant culture to reduce risk aversion and produce positive intentions toward entrepreneurship. Business schools could encourage the creation of culturally diverse teams where learners work collaboratively and try out a variety of new ideas. Taking actions among learners' diverse teams where mistakes are allowed increases creativity and self-efficacy, encourages risk taking, and enhances students' EIs.

#### *Limitations and future directions for research*

This study has some limitations. It was conducted in one country; it is recommended that the model be tested across different contexts. This research did not consider the biculturalism factor and did not conduct a comparative analysis that considers French students versus international students living in France. Future research may benefit from using nationality to control for such variances. This study emphasizes two cultural dimensions and future work may consider the integration of other dimensions to analyze their impact on the outcomes of this study.

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