

## **Entrepreneurial intentions, motivations and barriers: Differences among American, Asian and European students**

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**Abstract** Should entrepreneurship education be the same in every country or should it be adapted to each context? In addition to answering this question, it appears to be important to identify the concerns students have regarding their entrepreneurship education programs, so as to strengthen their perceptions of feasibility and desirability of an entrepreneurial career. In this article we examine whether differences exist among American, Asian and European students in terms of entrepreneurial intentions and dispositions, as well as motivations and perceived barriers for business startup. Results indicate that entrepreneurial disposition and intentions differ by country but that students across countries are motivated and/or discouraged by similar variables. However, our results indicate that the levels of sensitivity to each motivator and barrier differ by country. Our results support the argument made by past researches that cultural differences should be taken into consideration when developing entrepreneurship education programs.

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## Introduction

Why do we need to train entrepreneurs? Fillion (2009) argues that because the entrepreneur engages in different innovative activities, he or she needs to have a program of study adapted to this professional profile which will prepare him or her for this particular type of activity. In effect, the entrepreneurial act is a professional route, which requires, like other professions, a specific and targeted education. This may be even more important given the risks involved in entrepreneurship. In addition, entrepreneurship education is important because entrepreneurial activities are a vital component of economic growth, innovation and employment. This is why we see entrepreneurship education growing in importance in our universities.

Entrepreneurship education should be specific, however, we should not focus only on the skills an individual may need so as to bring an idea to life. Such education programs must also take contextual considerations into account which may play an important role in the individual's decision to launch an entrepreneurial venture (Mitchell et al. 2000). This means that entrepreneurship education programs should be adjusted to the country in which they will be taught. Country-specific contextual variables shape students' entrepreneurial intentions and allow us to explain the differences we may note between students of different nationalities. However, with only occasional exceptions (for example, Pruett et al. 2009), few studies have examined the differences in entrepreneurial intentions, motivations and perceived barriers to business creation among students in different nations (Wilson et al. 2004). In addition, as Krueger and Brazeal (1994) note, the faculty teaching entrepreneurship shape students' perceptions regarding the feasibility and desirability of business creation.

As Lee et al. (2009) point out, we must ensure that entrepreneurship education programs are consistent with the national context in which they are offered. Therefore, we believe it to be important to identify the differences that exist among students of different nationalities. To accomplish this, we believe it to be important to study students' motivations and perceived barriers so as to be able to meet their expectations. Based on a sample of over 2000 American, Asian and European students, we hope to offer recommendations for entrepreneurship education targeting students in the three continents in question.

This article is organized as follows: “**Introduction**” presents a brief literature review regarding entrepreneurship education and its impact. In “**Entrepreneurship education: Why is it important and what is its impact?**”, we present our data and the methodology we use. “**Methodology**” describes the results and “**Results**” offers a discussion of those results, recommendations for practice, and lists our study's limitations.

## Entrepreneurship education: Why is it important and what is its impact?

As Kuratko (2005) points out, we can no longer ask whether there is a point to entrepreneurship education. It has been over 70 years that this field of study is being

offered in universities. The first entrepreneurship program was created in Asia (Japan), at the end of the 1930s (Bell et al. 2004). In the U.S., entrepreneurship was recognized as a discipline only 40 years later and in the 1970s and 1980s numerous entrepreneurship programs were established in American universities (Bell et al. 2004). In early 2000 there were more than 500 entrepreneurship programs in that country. Similar growth was occurring in a number of countries during the 1990s (Bell et al. 2004). Today, be it in Europe, Asia, Oceania or the Americas, numerous universities offer their students a possibility to study business formation and creation (Bell et al. 2004). How can we explain this enthusiasm about entrepreneurship education in the last 40 years?

We can offer a first response to the above question in the economic and social importance of entrepreneurship. In fact, entrepreneurship, through venture creation, is a vital component of economic growth, innovation, and employment (Galloway and Brown 2002; Shane and Venkataraman 2000). For Lee and Peterson (2000), entrepreneurship has become the main mechanism for transforming the world economy. Indeed, a change in the perceptions of the entrepreneurial career has occurred over the last few years. As Lüthje and Franke (2003) point out, factors such as the internationalization of markets and restructuring of large corporations push individuals to consider business creation as a desirable alternative to employment for wages. In addition, the independence and self-actualization entrepreneurs can achieve are becoming more appealing to employees (Lüthje and Franke 2003).

However, the desire to accomplish something is different from actually doing it. As Lüthje and Franke (2003) point out, not all individuals who desire to start a business actually do so. These authors differentiate between entrepreneurial intentions and attitudes towards entrepreneurship. In their study, they show that individuals who were interested in business creation did not go through with it due to negative perceptions of entrepreneurship in their social environment. Similarly, Lee et al. (2005) state that starting a business without the necessary knowledge involves high risk, even when one has strong entrepreneurial intentions. Krueger and Brazeal (1994) sum this up in their argument that one is not born an entrepreneur but rather one becomes an entrepreneur. Lee and Peterson (2000) add that one does not become an entrepreneur in a vacuum but rather as a result of an entrepreneurial society. Based on these arguments, it appears that there are two main factors that can help us explain the emergence as well as the importance of entrepreneurship education: On the one hand, small and medium sized (SMEs) firms are playing an increasingly important economic role and the status of entrepreneurs is rising in different societies. On the other hand, there is a need to provide aspiring entrepreneurs the necessary skills for business startup and development. As Hills (1988) points out, the goal of entrepreneurship education programs is to inculcate the desirability (the desire to launch into an entrepreneurial career) as well as the feasibility (possessing the necessary skills and knowledge to create and manage a company) of entrepreneurship.

Since the creation of the first entrepreneurship program 70 years ago, the impact of entrepreneurship education programs has received some research attention (Boissin et al. 2009; Galloway and Brown 2002; Klapper 2004; Kuratko 2005; Lee et al. 2005; Lee et al. 2009; Peterman and Kennedy 2003; Souitaris et al. 2007). Two major outcomes of entrepreneurship education have been identified. First, students who have taken part in such programs are more interested in entrepreneurial careers and are more inclined to create a business. Second, entrepreneurial self-

efficacy (the belief that one can be successful as an entrepreneur) is stronger among students who have taken entrepreneurship classes.

If entrepreneurship education programs have a positive impact on students' entrepreneurial intentions, it appears that this effect is not consistent across different countries. Lee and Peterson (2000) argue that even in supportive environments, a national culture that supports and encourages entrepreneurial activities is necessary. Lee et al. (2005) argue that entrepreneurship education may be even more important in nations where the entrepreneurial culture is underdeveloped compared to countries where the entrepreneurial culture is well established. This may help explain some of the differences in returns on capital between poor and rich countries.

Pittaway and Cope (2007) as well as Carayannis et al. (2003) explain that an individual's entrepreneurial intentions can be shaped by his or her perceptions of barriers to business startup, cultural values, and the environment in which he or she is located. Lüthje and Franke (2003) see entrepreneurial intentions as related to cultural values and shaped by perceived barriers to creation as well as the infrastructure in place to support entrepreneurs. In fact, administrative difficulties, banks' reluctance to finance new projects, the stigma associated with failure, risk aversion, attitudes of friends and family, etc. are also elements that can derail an individual's entrepreneurial desire (Shinnar et al. 2009).

If these factors can have an impact on entrepreneurs in their countries of origin, these same variables can play a role in the entrepreneurial intentions of students. Therefore, in order for educational programs to be efficient, they must be adjusted, for example, to the perceived barriers and entrepreneurial attitudes unique to each nation. This is in fact what Pittaway and Cope (2007) argue: that entrepreneurship education should vary by nation as well as region.

To date, few studies have examined differences in entrepreneurial intentions, motivations and perceived barriers to business creation among students in different nations (Wilson et al. 2004) with the exception of a handful of studies (Boissin et al. 2009; Lee et al. 2009; Lee et al. 2005; Pruett et al. 2009). For example, Pruett et al. (2009) found that culture can be a strong predictor of entrepreneurial intention, but that culture may also pose conflicts, such as in China, where tradition and history do not support the choice of an entrepreneurial career. Many Chinese students in these researchers' sample intend to pursue entrepreneurial careers, yet report that their families often are indifferent or even opposed to the idea.

Boissin et al. (2009) compared entrepreneurial sensitivity between American and French students and found French students to have a much weaker entrepreneurial sensitivity compared to American students. In addition, the French were more attracted by employment for wages compared to the Americans. Similarly, Lee et al. (2005) examined the impact of entrepreneurship education on American and Korean students and found that entrepreneurship courses had a larger impact on the knowledge and ability of Korean students to create an enterprise, compared to American students. Lee et al. (2009) also took an interest in entrepreneurial orientation differences across countries. They show that the cultural context has a significant impact on students' entrepreneurial orientation but that being in a highly entrepreneurial environment does not necessarily imply a high level of entrepreneurial orientation.

These findings demonstrate that the impact of entrepreneurship education programs differs when students are from different national origins. This is due to

their attitudinal differences toward business creation and due to their perception of their own entrepreneurial competency. As Pittaway and Cope (2007) as well as Lee et al. (2005) point out, one must remain attuned to national differences when developing entrepreneurship education programs. To increase students' entrepreneurial intentions, it is important to shape their perceptions of their own abilities (Zhao et al. 2005). Krueger and Brazeal (1994) call on faculty to improve students' perceptions of business creation feasibility and desirability. Similarly, Fayolle and Kickul (2007) point out that faculty must be proactive about the way in which they develop and execute entrepreneurship education programs. Pruett et al. (2009), note that entrepreneurship education may have to address other factors as well, such as the prospect of student-family conflict.

For faculty to be able to create entrepreneurship programs that are contextually appropriate and serve to strengthen students' perceptions of feasibility and desirability of entrepreneurship, they must first understand the entrepreneurial intentions, motivations and perceived barriers of their prospective students. The objective of this study is to analyze a large international sample of university students and assess differences in entrepreneurial dispositions and aspirations as well as motivations and perceived barriers among students of different nationalities. More precisely, we try to answer the following questions:

1. Are there any differences between groups (nationality) of students in terms of dispositions, occupational aspirations and entrepreneurial intentions?
2. Are entrepreneurial motivations and/or barriers the same for all (nationalities) students?
3. Are the entrepreneurial motivations and/or barriers all equally important in all countries?

## Methodology

In this section, we present our data and the data collection method used. We also discuss the methodology used in this study.

### Data

Our sample consists of students from five universities in five nations including the United States, China, India, Spain and Belgium. This sample includes 2093 students (317 Americans, 333 Chinese, 422 Indian, 604 Spanish, and 417 Belgian students) from various fields of study including: art, communication, political science, law, sociology, foreign languages, history, management, engineering, and computer information systems. This research is based on a survey carried out by Genescá and Veciana (1984). This survey has been replicated several times in Spain (Veciana et al. 2005). The questionnaire used in this article has been completed with additional demographic questions. The Spanish questionnaire<sup>1</sup> was translated into English<sup>2</sup> (for

<sup>1</sup> The completed questionnaire is available on request from the authors.

<sup>2</sup> For the Chinese and Indian students, verbal clarifications were given when necessary during survey administration.

the American, Chinese and Indian students) and into French (for the Belgian students). The questionnaires were back-translated into the language of origin to assure no loss of meaning in the French and English translations. The Spanish students completed the questionnaire in the original language. For Americans, Chinese, Indian and Belgian students, the questionnaire was administered during a class session. For these students the response rate was 100%. For Spanish students questionnaire was placed on the university website and could be answered on a voluntary basis.

Using Likert scales and demographic variables, we measured students' entrepreneurial dispositions and aspirations as well as their motivations and perceived barriers to business startup. Survey respondents were 38.1% male, 78.2% were business majors, and 21.8% majored in other fields of study. 24.6% were first year students, 27.7% were second year students, 20.2% were third year students, 14% were fourth year students and the remaining 19.5% were in their fifth year of study.

## Analysis

We followed a three stage procedure for our data analysis. First, we examined the motivations and perceived barriers for all students. To accomplish that, we applied principal component factor analysis to the motivations and barriers items. This allowed us to identify different groups of motivators and perceived barriers. In the second stage, we conducted an ANOVA<sup>3</sup> to examine whether there were significant differences between the student groups in relation to the motivations and barriers identified in our factor analysis. The hypothesis ( $H_0$ )<sup>4</sup> tested by the ANOVA is that the mean importance ranking of a variable for the different groups of students, in our case one of the factors, would be identical. Alongside the ANOVA, we conducted a multiple comparison to determine which groups of students are significantly different from the other groups in the motivations and perceived barriers.

While we assume that our data is normally distributed, we prefer the *Levene* test to the Bartlett test to verify homogeneity of variance. The *Levene* test is less likely to result in a type 1 error (reject the null hypothesis when it is correct) when data is not normally distributed (Hsu 1996). When homogeneity was not assumed, we used the *Welch* test. When homogeneity of variance is not assumed, the *Fischer* test used for the ANOVA is not sufficiently robust and results may be incorrect. The *Welch* test has the advantage of providing more trustworthy ANOVA results while allowing for heterogeneity of variance. All analysis was done using SPSS version 15.0.

## Results

In the next section we present our results and our factor analysis and analysis of variance which examined the existence of differences in motivations and barriers to business creation among the five nations studied. First, we analyze the differences in

<sup>3</sup> Normality is assumed.

<sup>4</sup> The alternative hypothesis ( $H_1$ ) was that for at least one group, the impact of one of the factors would be significantly different from the other groups.

terms of entrepreneurial disposition, professional aspirations and entrepreneurial intentions for the five groups of students.

Entrepreneurial dispositions, occupational aspirations and entrepreneurial intentions

In order to evaluate the entrepreneurial disposition of the students, we asked them the following question: “On a scale of 1 to 7, indicate the degree to which you consider yourself to be an entrepreneur, full of ideas and initiative to start your own business”. The 7-point Likert scale ranged from “1” being “Not entrepreneurial at all” to “7” being “Very Entrepreneurial.” When comparing students’ entrepreneurial disposition our sample shows significant between group differences ( $F(4, 2029)=32.249, p<0.000$ ). Table 1 below details students’ entrepreneurial disposition by nation.

On average, the Spanish students had the highest entrepreneurial disposition (mean=4.75; s.d.=1.27), followed by the American (mean=4.24; s.d.=1.53), the Indian (mean=4.07; s.d.=1.40), the Chinese (mean=3.99; s.d.=1.48) and the Belgian students (mean=3.84; s.d.=1.37).

To assess students’ occupational aspirations, respondents were asked the following questions: “Which is your primary aspiration for future employment?” Answers included three options: (a) Work in my own business; (b) Work in a large organization; or (c) Work in public administration. The comparison of the occupational aspirations of students in the five countries showed significant between group differences ( $F(4,1995)=5.020, p<0.001$ ). As Table 2 shows, 43.5% of the Spanish students wanted to work in their own business compared to only 29% of the Chinese, 23.5% of the American, 23.3% of the Indian and 23.2% of the Belgian students. Public administration was considered to be a desirable occupational trajectory for 29.3% of the Chinese students, compared to 24.7% of the Spanish, 13.2% of the Indian, 11.9% of the American and 4.4% of the Belgian students. The desire to work in a large organization was most important for the Belgian, American, and Indian students (72.3%, 64.6%, and 63.4% respectively) compared to only 41.8% of the Chinese and 31.8% of the Spanish students.

Entrepreneurial intentions were measured by asking respondents: “Have you ever thought about starting a business?” Possible responses were ranked on a 4-point

**Table 1** Students’ entrepreneurial disposition (in %)

	U.S.	China	India	Belgium	Spain
1 Not entrepreneurial at all	4.9	5.4	5.5	4.4	2.5
2	12.8	10.8	8.7	12.3	9.2
3	19	20.8	19.1	23.5	17.1
4	19.7	25.3	30.5	28.6	24.2
5	26.9	24.4	25.2	20.7	25.3
6	12.1	8.7	6.8	7.2	16.3
7 Very entrepreneurial	4.6	4.5	4.1	3.2	5.5
Total	100	100	100	100	100

**Table 2** Students' occupational aspirations (in %)

	U.S.	China	India	Belgium	Spain
Work in my own business	23.5	29	23.3	23.2	43.5
Work in an organization	64.6	41.8	63.4	72.3	31.8
Work in public administration	11.9	29.3	13.2	4.4	24.7
Total	100	100	100	100	100

Likert scale where “1” was “No never,” “2” was “Yes, vaguely,” “3” was “Yes, seriously,” and “4” was “Yes, I have a definite plan to start my own business.” Significant between group differences were identified ( $F(4,2074)=14.883, p<0.000$ ) between the student groups in terms of entrepreneurial intentions. Table 3 below shows that, when considering the top two categories together, the Chinese students consider starting their own business most seriously (43.2%), followed by the Spanish students (37.5%), the American students (32.5%), the Indian students (26.2%) and the Belgian students (25%).

From a purely descriptive point of view, we note that the Spanish students have the highest entrepreneurial disposition and the greatest desire to work in their own business. In fact, it is the Spanish student sample that has the highest proportion of individuals who have a definite plan to start a business. In the following section we present our results for the comparative analysis of motivations and perceived barriers

### Motivations for startup business

In this section, we present our analysis results for the differences between the five groups of students in terms of their motivations to start a business. Initially, our questionnaire included 16 items (See Table 4 below) assessing the perceived importance of different motivators. Respondents were asked: “How would you rate the following motives for starting a business?” Importance was measured on a 5-point Likert scale ranging from “1” being “very unimportant” to “5” being “very important”. Table 4 presents the mean rankings for the five groups of each of the 16 motivations for business startup. From a descriptive point of view, if we examine the ensemble of motivations, we note that, on average, the Indian students ranked most of the motivators as more important compared to the American, Chinese, Spanish and Belgian students. The Spanish and Chinese students ranked most motivators as less

**Table 3** Students' occupational intentions (in %)

	U.S.	China	India	Belgium	Spain
No, never	19.2	15.1	24.5	23.6	12.4
Yes, vaguely	48.3	41.7	49.4	51.3	50.1
Yes, seriously	24.6	35.3	20.6	20.2	24.4
Yes, I have a definite plan	7.9	7.9	5.6	4.8	13.1
Total	100	100	100	100	100



**Table 4** Students' motivations for startup business (means)

Motives for starting businesses	U.S.	China	India	Belgium	Spain
The chance to implement my own ideas	4.55	4.20	4.56	4.36	4.40
Creating something of my own	4.35	4.11	4.46	4.19	4.10
Personal independence	4.43	3.91	4.52	4.08	3.86
Being at the head of an organization	4.06	3.54	3.98	3.92	3.31
The opportunity to be financially independent	4.27	3.60	4.51	3.80	3.61
Improving my quality of life	4.21	3.71	4.51	3.74	3.78
Creating jobs	3.63	2.89	4.10	3.63	3.30
Managing people	3.72	3.33	4.18	3.62	3.11
Receiving fair compensation	3.65	3.08	4.17	3.51	3.36
Making more money than by working for wages	3.71	3.67	3.93	3.43	3.20
Dissatisfaction in a professional occupation	3.54	3.02	3.48	3.37	3.45
Building personal wealth	3.97	3.61	4.15	3.35	3.36
Having more free time	3.62	2.97	2.84	2.99	2.86
Gaining high social status	2.92	3.45	4.03	2.99	2.64
The difficulty of finding the right job	3.39	2.59	3.72	2.93	3.36
Following a family tradition	2.97	2.63	3.05	2.51	1.74

important when compared to the other groups. This can be surprising when we consider the previous results indicating the Spanish and Chinese students to have the strongest entrepreneurial intentions compared to the other groups.

Before examining whether significant differences exist between the five groups, we conducted a factor analysis of the 16 motivations. This analysis intended to verify whether the motivations presented in Table 4 can be grouped into distinct categories. Our factor analysis yielded five distinct factors with values greater than 1 and a total variance explained of 58.36%.

The VARIMAX rotation allows us to redistribute the variance equally among the different factors to facilitate interpretation. To interpret the final results we used the principal components matrix after rotation.

The analysis results presented in Table 5, permit us to identify five factors. For the first factor, the motivations "Being at the head of an organization," "Managing people," "Making more money than by working for wages," "Building personal wealth," "Gaining high social status," and "Following a family tradition" are grouped together. The nature of these six motivations suggests that the first factor represents the pursuit of profit and social status. The second factor includes the following three motives: "The chance to implement my own ideas," "Personal independence," "The opportunity to be financially independent" which we labeled as desire for independence. The motivations "Creating something of my own," "Creating jobs" are part of the third factor which we label creation. The fourth factor is comprised of two motivations including "Improving my quality of life," and "Having more free time" which we label personal development. Finally, the last factor includes "Receiving fair compensation," "Dissatisfaction in a professional occupation," and "The difficulty of finding the right job" which we label professional dissatisfaction.

**Table 5** Components matrix after rotation

Motivations	The five factors				
	1	2	3	4	5
The chance to implement my own ideas	-.034	.574	.517	-.052	.52
Creating something of my own	.088	.355	.670	.079	-.048
Personal independence	-.020	.718	.085	.039	.069
Being at the head of an organization	.603	.262	.348	-.218	.015
The opportunity to be financially independent	.300	.571	.162	.244	.136
Improving my quality of life	.209	.245	.128	.736	.063
Creating jobs	.171	-.051	.722	.213	.108
Managing people	.576	.124	.484	-.152	.077
Receiving fair compensation	.291	.260	-.048	.293	.538
Making more money than by working for wages	.472	.427	-.355	.271	.085
Dissatisfaction in a professional occupation	-.038	.061	.069	-.081	.805
Building personal wealth	.657	.320	-.041	.221	.014
Having more free time	.069	-.017	.048	.773	.137
Gaining high social status	.700	-.006	.031	.238	.022
The difficulty of finding the right job	.044	.007	.034	.179	.727
Following a family tradition	.639	-.187	.133	.113	.080

Having grouped our 16 motivators into 5 factors, we seek to determine whether there are significant differences between the five nations in our sample in terms of the 5 types of motivations. For this purpose we have conducted an ANOVA. First we verify homogeneity of variance using Levene's test for each of the five motivations categories. Once this condition has been met, we use Welch's test to determine if significant differences exist.

Table 6 shows that, for the motivation factors, homogeneity of variance could not be assumed. While we could consider homogeneity of variance given the similar sample sizes of our five groups, we prefer, so as to insure the robustness of our ANOVA results (see Table 7), to use the Welch test. For comparison, Table 7 also provides the Fisher test results.

**Table 6** Homogeneity of variance test

Motivations	Levene Test	DF1	DF2
Pursuit of profit and social status	9.199***	4	1,799
Desire for independence	17.336***	4	1,799
Creation	20.793***	4	1,799
Personal development	21.296***	4	1,799
Professional dissatisfaction	4.583**	4	1,799

\*\* $p < 0.001$  ; \*\*\* $p < 0.000$

**Table 7** Anova

Motivations		Sum of Squares	DF	Mean Squares	Fischer Test	Welch Test
Pursuit of profit and social status	Between groups	315.118	4	78.779	95.252***	100.928***
	Within groups	1487.882	1,799	.827		
	Total	1803.000	1,803			
Desire for independence	Between groups	73.660	4	18.415	19.157***	19.795***
	Within groups	1729.340	1,799	.961		
	Total	1803.000	1,803			
Creation	Between groups	81.806	4	20.451	21.376***	27.413***
	Within groups	1721.194	1,799	.957		
	Total	1803.000	1,803			
Personal development	Between groups	46.184	4	11.546	11.823***	13.769***
	Within groups	1756.816	1,799	.977		
	Total	1803.000	1,803			
Professional dissatisfaction	Between groups	93.072	4	23.268	24.480***	27.440***
	Within groups	1709.928	1,799	.950		
	Total	1803.000	1,803			

\*\*\* $p < 0.000$

In examining Table 7, we note the differences between at least two groups of students for each of the five motivation factors. These results, however, do not permit us to identify which groups differ significantly in each motivation category. We therefore follow up with a multiple analysis to determine which groups differ significantly using the non-parametric *Tamhane's* test. Given that the Levene's test has indicated unequal variance, we cannot use a parametric test to conduct this comparison. In the following, we present only the significant findings of our multiple analysis (see Table 8).

First, for the Indian students, the motivation of pursuit of profit and social status appears to be most important compared to the other groups. The American and Chinese students are, on average, more driven by this motivation as well, compared to the Spanish students. Lastly, the Spanish students are less sensitive to this motivation compared to the Belgian students. Second, it appears that the desire for independence motive is most important for the American and Indian students compared to the other three groups. Belgian, Spanish, and Chinese students are relatively less motivated by the desire for independence. Third, the Belgian, Indian and American students are more motivated by the opportunity for creation compared to the Spanish students. The same relationship exists between the American and Chinese students. On the other hand, the Chinese students are more sensitive to starting a business for creation motivation compared to the Spanish, Belgian and Indian students. Fourth, the Chinese, Spanish and Belgian students are less sensitive, on average, compared to the American students to the personal development motivation. The same is true for the Spanish and Belgian students compared to the Indian students. Fifth, professional dissatisfaction is, on average, a more important

**Table 8** Comparative analysis of motivations for the different student groups

Dependent Variable: Motivations	Country (A)	Country (B)	Difference * mean between A and B
Pursuit of profit and social status	US	Spain	0.712
		India	-0.464
	China	Spain	0.619
		India	-0.562
	Spain	Belgium	-0.556
		India	-1.182
Belgium	India	-0.625	
Desire for independence	US	Chine	0.548
		Spain	0.329
		Belgium	0.333
	China	India	-0.602
		India	-0.382
	Belgium	India	-0.387
Creation	US	Chine	0.586
		Spain	0.232
	China	Spain	-0.353
		Belgium	-0.575
	Spain	India	-0.714
		Belgium	-0.221
India	-0.361		
Personal development	US	Chine	0.254
		Spain	0.309
		Belgium	0.430
	Spain	India	-0.260
		India	-0.382
	Belgium	India	-0.382
Professional dissatisfaction	US	Chine	0.606
		Belgium	0.226
	China	Spain	-0.582
		Belgium	-0.380
	Spain	India	-0.212
		Belgium	0.202
India	-0.212		
Belgium	India	-0.414	

\* $p < 0.05$ 

motivation for the Indian students compared to the Chinese, Spanish and Belgian students. In addition, the Belgian students appear to be less motivated by professional dissatisfaction compared to American and Spanish students. Finally, the Chinese students, compared to the American, Belgian and Spanish students, are less subject to the professional dissatisfaction motive.

## Barriers to creation

In this section, we analyze the differences between the five student groups in terms of their perceived barriers to business startup. Our questionnaire included 20 items (see Table 9) assessing the perceived importance of each barrier in preventing business startup. Importance of each barrier was assessed by asking respondents: “How would you rate the importance of the following barriers to starting a business?” Responses were measured on a 5-point Likert scale ranging from “1” being “very unimportant” to “5” being “very important.” Table 9 presents the average importance given to each of the 20 barriers by the five groups of students.

If we examine all the motivations, we note that, as with the motivations, the Indian students are, on average, more sensitive than the American, Chinese, Spanish and Belgian students to the majority of the barriers. If we want to look at the groups least sensitive to the barriers, we find that the Spanish and Chinese students are less sensitive to 11 and 7 (respectively) of the barriers. These two nations are also the two nations which represent the strongest entrepreneurial intentions. This is then not surprising that they are less sensitive to barriers to business startup.

In order to determine whether significant differences exist between the groups we used the same methodology as with the analysis of the motivations above. The factor analysis resulted in five factors with a value higher than 1 which explain 52.013% of the variance.

**Table 9** Barriers to business startup (means)

Barriers for starting businesses	U.S.	China	India	Belgium	Spain
Excessively risky	4.25	3.76	4.00	4.07	3.94
Lack of initial capital	4.18	3.92	4.32	3.94	4.25
Lack of a entrepreneurial competence	3.86	3.65	3.89	3.82	3.53
Current economic situation	4.18	3.68	4.30	3.67	3.94
Fear of failure	3.44	3.28	3.41	3.53	3.16
Fiscal charges (taxes, legal fees, etc.).	3.54	3.12	3.61	3.52	3.26
Lack of knowledge	3.84	3.38	4.02	3.45	3.26
Lack of knowledge of the business world and market	3.70	3.48	4.02	3.41	3.27
Lack of ideas regarding what business to start	3.68	3.51	3.93	3.41	2.72
Lack of experience in management and accounting	3.76	3.37	3.92	3.37	3.62
Lack of available assistance in assessing business viability	3.52	3.41	3.61	3.35	3.14
Lack of legal assistance or counseling	3.42	3.26	3.67	3.33	3.43
Irregular income	3.65	3.13	3.68	3.32	3.22
Lack of formal help to start a business	3.52	3.25	3.51	3.31	3.43
Lack of organizations to assist entrepreneurs	3.47	3.26	3.75	3.24	3.30
Doubts about personal abilities	3.37	3.15	3.68	3.24	2.64
Problems with employees/contracted personnel	3.27	3.05	3.68	3.18	2.61
Start up paperwork and bureaucracy	3.18	3.03	3.17	3.12	2.86
Having to work too many hours	3.41	2.81	3.17	3.09	2.75
Lack of support from people around me (family, friends, etc.)	3.46	3.30	3.69	2.87	2.68

The analysis results presented in Table 10 allow us to identify five factors. The items that loaded on the first factor include: “Fiscal charges,” “Lack of available assistance in assessing business viability,” “Lack of legal assistance or counseling,” “Lack of formal help to start a business,” “Lack of organizations to assist entrepreneurs,” and “Start up paperwork and bureaucracy.” The nature of these barriers suggests that this factor represents the lack of support structure and fiscal and administrative costs. Factor 2 consists of 2 items including: “Lack of knowledge of the business world and market,” and “Lack of experience in management and accounting” based on which we label it lack of knowledge and experience. The barriers “Excessively risky,” “Lack of initial capital,” “Lack of entrepreneurial competence” and “Current economic situation” are the most correlated to the third factor which we label economic climate and lack of entrepreneurial competencies. The barriers “Lack of ideas regarding what business to start,” “Doubts about personal abilities,” “Problems with employees/contracted personnel,” and Lack of support from people around me (family, friends, etc.) are most correlated with the fourth factor, which we label lack of self confidence. Finally, the barriers “Fear of failure,” “Irregular income,” and “Having to work too many hours” make up the fifth factor which we label risk aversion.

**Table 10** Components matrix after rotation

Barriers	The five components				
	1	2	3	4	5
Excessively risky	-.025	.103	.678	.007	.216
Lack of initial capital	.130	.057	.699	.001	.010
Lack of a entrepreneurial competence	.109	.358	.479	.109	.186
Current economic situation	.131	.067	.686	.131	.027
Fear of failure	.001	.108	.210	.239	.579
Fiscal charges (taxes, legal fees, etc.).	.347	-.128	.346	.197	.293
Lack of knowledge	.154	.765	.079	.181	.162
Lack of knowledge of the business world and market	.407	.501	.113	.285	.010
Lack of ideas regarding what business to start	.004	.276	.120	.695	-.052
Lack of experience in management and accounting	.231	.749	.159	.020	.103
Lack of available assistance in assessing business viability	.449	.266	.147	.395	.001
Lack of legal assistance or counseling	.736	.102	.070	.146	.067
Irregular income	.130	.065	.192	.061	.715
Lack of formal help to start a business	.742	.147	.149	-.020	.054
Lack of organizations to assist entrepreneurs	.650	.184	.084	-.002	.036
Doubts about personal abilities	.002	.475	.049	.541	.228
Problems with employees/contracted personnel	.173	-.015	.123	.540	.378
Start up paperwork and bureaucracy	.583	.045	.003	.239	.162
Having to work too many hours	.095	.181	-.038	.004	.754
Lack of support from people around me (family, friends, etc.)	.249	.003	-.015	.612	.118

Once we have identified the five factors for the barriers to business startup, we conduct an ANOVA to compare among the five groups, to assess whether significant differences exist.

Table 11 shows that among all the barriers, with the exception of risk aversion, equality of variance cannot be assumed. The ANOVA results (see Table 12) are therefore interpreted using the Welch test. In addition, as with the analysis of motivations, we also present the Fisher test results.

Table 12 shows that there are significant differences between groups in the sensitivity to the different barriers. In order to identify which groups differ we conducted an additional multiple analysis. The results (presented in Table 13) allow us to draw a few conclusions.

First, it appears that the barrier lack of support structure and fiscal and administrative costs is rated as most important for the Indian students. It is relatively less important for the Chinese, Spanish and Belgian students. Second, the American and the Indian students consider the lack of knowledge and experience to be a more important barrier compared to the Chinese, Spanish and Belgian students. Third, the economic climate and lack of entrepreneurial competencies barrier was rated as more important by the American and Indian students compared to the Chinese and Belgian students. On the other hand, the Belgian students are more preoccupied by this barrier compared to the Spanish students and then Chinese students are less so. Fourth, the Indian students, compared to the American, Chinese, Spanish and Belgian students consider the lack of self confidence as a more important barrier to creation. The Spanish students are less concerned with this barrier compared to the American and Chinese students. Fifth, the Chinese and Spanish students rated risk aversion as a less important barrier compared to the American, Belgian and Indian students.

## Conclusions

In this study, we have attempted to determine the differences in entrepreneurial intention among American, Asian and European students. There were a number of motivations for our study. First, as Lee et al. (2009) point out, it is important to determine whether country differences exist in entrepreneurial intentions so as to be able to create contextually appropriate entrepreneurship programs. Second, it is

**Table 11** Test of homogeneity of variance

Barriers	Levene Test	DF1	DF2
Lack of support structure and fiscal or administrative costs	4.687**	4	1,791
Lack of knowledge and experience	2.510*	4	1,791
Economic climate and lack of entrepreneurial competencies	8.666***	4	1,791
Lack of self confidence	10.315***	4	1,791
Risk aversion	1.774	4	1,791

\* $p < 0.05$  ; \*\* $p < 0.001$  ; \*\*\* $p < 0.000$

**Table 12** Anova

Barriers		Sum of squares	DF	Mean squares	Fischer Test	Welch Test
Lack of support structure and fiscal or administrative costs	Between groups	19.281	4	4.820	4.862***	5.867***
	Within groups	1775.719	1,791	.991		
	Total	1795.000	1,795			
Lack of knowledge and experience	Between groups	28.194	4	7.049	7.145***	7.057***
	Within groups	1766.806	1,791	.986		
	Total	1795.000	1,795			
Economic climate and lack of entrepreneurial competencies	Between groups	38.282	4	9.571	9.757***	9.694***
	Within groups	1756.718	1,791	.981		
	Total	1795.000	1,795			
Lack of self confidence	Between groups	286.856	4	71.714	85.164***	90.219***
	Within groups	1508.144	1,791	.842		
	Total	1795.000	1,795			
Risk aversion	Between groups	63.152	4	15.788	16.327***	
	Within groups	1731.848	1,791	.967		
	Total	1795.000	1,795			

\*\*\* $p < 0.000$ 

important to understand students' motivations and perceived barriers when designing entrepreneurship education programs so as to be able to best cater to students' needs and expectations. Third, given the reshuffling of the geo-economic maps, especially between the US and Asia, it was interesting to attempt and determine what differentiates American, Chinese and Indian entrepreneurs. Based on our analysis, we draw the following conclusions.

First, from a descriptive point of view, it appears that that the American, Asian and European students do not share the same entrepreneurial intentions or dispositions. For example, in terms of occupational aspirations, the Chinese students are more interested in a public administration career compared to the students from the other four countries. This result can be due to the longstanding importance attached to an official government post in China, in spite of the deep socio economic changes China has undergone in the last few years. On the other hand, we note that the Spanish students, compared to the other four national groups, show a strong entrepreneurial disposition and occupational aspirations of working in their own business. This finding is in contrast to the Global Entrepreneurship Monitor (GEM) studies, which suggest that Spain is one of the counties in which entrepreneurial intentions are one of the weakest and fear of failure is one of the strongest (Bosma et al. 2007).

Second, our factor analysis indicate that the American, Asian and European students are similarly motivated as well as perceive similar barriers to business creation but indicate different levels of sensitivity to each motivator and/or barrier. For example, business creation for financial and social status motives is stronger for the Indian students compared to the other groups. Similarly, the desire for personal



**Table 13** Comparison analysis of barriers for the different student groups

Dependent variable : Barriers	Country (A)	Country (B)	Difference* mean between A and B
Lack of support structure and fiscal or administrative Costs	China	India	-0.312
	Spain	India	-0.219
	Belgium	India	-0.289
Lack of knowledge and experience	US	China	0.234
		Spain	0.247
		Belgium	0.220
	Chine	India	-0.288
	Spain	India	-0.300
	Belgium	India	-0.273
Economic climate and lack of entrepreneurial Competencies	US	Chine	0.350
		Belgium	0.221
	China	Spain	-0.333
		India	-0.408
	Belgium	India	-0.280
		Spain	0.232
Lack of self confidence	US	Spain	0.731
		India	-0.334
	China	Spain	0.823
		India	-0.241
	Spain	India	-1.065
		Belgium	India
Risk aversion	US	China	0.441
		Spain	0.456
	China	Belgium	-0.354
		India	-0.274
	Spain	Belgium	-0.370
		India	-0.274

\* $p < 0.05$ 

development through business creation is more highly rated by the Indian students compared to the Spanish and Belgian students. These results may, to a certain extent, be explained by the socio-economic precariousness the Indian population is faced with compared to the other nations in our study. If we look at professional dissatisfaction as a reason to start a business, this motivation was rated as least important by the Chinese, Spanish and Belgian students compared to the other two groups. As Noorderhaven et al. (2004) point out, professional dissatisfaction is synonymous with necessity-driven entrepreneurship. The fact that the Indian students are more driven by that motivation compared to the Chinese, Spanish and Belgian students is not surprising when we consider the fact that necessity-driven entrepreneurship is more common in India compared to China, Spain or Belgium

(Bosma et al. 2007). Unlike the Indian students, the Chinese students are less motivated by professional dissatisfaction compared to the American, Spanish and Belgian students.

Third, our analysis of the barriers to business startup also shows a certain number of significant differences between the countries in our study. For example, the barriers of “lack of support structures and financial and administrative costs,” “Lack of knowledge and experience,” and “lack of self confidence” are clearly identified by the Indian students are more important compared to the Chinese, Spanish, and Belgian students. The lack of self confidence barrier was ranked as least important by the Spanish students. It is interesting to note that the Spanish and the Chinese students are less risk averse compared to the American, Indian and Belgian students. Again, this is in contrast to the GEM studies (Bosma et al. 2007) which rank Spain as a risk-averse nation.

It appears that our results confirm the arguments made by Pittaway and Cope (2007), Lee et al. (2005), Carayannis et al. (2003), Lüthje and Franke (2003), Mitchell et al. (2000), and Lee and Peterson (2000) regarding the importance of taking national differences into consideration when developing entrepreneurship education programs. In fact, as we show, there are significant differences among the American, Asian and European students in our study. These differences exist in entrepreneurial intentions and dispositions as well as motivations and perceived barriers to business startup. We propose, based on our findings, that entrepreneurship education programs in India place an emphasis on the support services available to aspiring entrepreneurs and to strengthen students’ management skills. Similarly, it would be important to reduce the fear of failure in an entrepreneurial venture among American and Belgian students. In addition, in order to increase the entrepreneurial inclination, entrepreneurship programs in China could place more emphasis on the advantages of an entrepreneurial career. Lüthje and Franke (2003) state that one may have the desire to create a business but fail to pursue that desire due to negative perceptions of the socio-economic conditions. For that purpose, knowing the fears and hesitations of our students regarding business creation is not sufficient, professors should also be aware of these factors when designing entrepreneurship education programs.

Our study suffers four main limitations. First, we do not assess the role of cultural values of the countries in question and their impact on intentions, motivations and perceived barriers. This issue could be addressed in future studies and would greatly advance our understanding of national differences. Second, we cannot generalize our findings to other countries. Third, the data for this study were collected through a survey instrument. Respondents provided data about entrepreneurial disposition, occupational aspirations, and perceived barriers and motivations. All the observed relationships were reported by the same group of respondents. Therefore, any observed relations may be in part a result of common method effect (Fiske 1982). However, this limitation is consistent with the limitations of prior empirical studies in this area and of most survey research. Finally, it would be interesting to analyze whether the observed differences between countries also exist between students from different countries pursuing similar courses (e.g. business students or non-business students). Unfortunately our data do not allow such comparisons for all countries.

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