



## Determinants of entrepreneurial intentions in European sports science students: Towards the development of future sports entrepreneurs

María Huertas González-Serrano<sup>a</sup>, Irena Valantine<sup>b</sup>, Radenko Matic<sup>c</sup>, Ivana Milovanović<sup>c</sup>, Ruslana Sushko<sup>d</sup>, Ferran Calabuig<sup>a,\*</sup>

<sup>a</sup> Departament d'Educació Física i Esportiva, Universitat de València, Valencia, Spain

<sup>b</sup> Department of Sport and Tourism Management, Lithuanian Sports University, Kaunas, Lithuania

<sup>c</sup> Faculty of Sport and Physical Education, University of Novi Sad, Novi Sad, Serbia

<sup>d</sup> Faculty of Health, Physical Education and Sports, Borys Grinchenko Kyiv University, Kyiv, Ukraine

### ARTICLE INFO

#### JEL classification:

I23  
L26  
M13

#### Keywords:

Sport entrepreneurship  
European countries  
Higher education  
Employability

### ABSTRACT

This study aims to analyse the determinants of sport science students' entrepreneurial intentions considering the cultural effect on these relationships. The sample comprises 764 final-year sport science students from five European countries: Lithuania, Spain, Ukraine, Serbia, and Croatia. A validated structured questionnaire was used to collect the data. The results showed significant direct effects between attitude towards behaviour and perceived behavioural control in sport science students' entrepreneurial intentions in all countries. Entrepreneurial skills presented an indirect impact (through attitude and perceived behavioural control) on all countries' entrepreneurial intentions. However, the importance of each of these variables in explaining entrepreneurial intentions varied according to the students' national culture. This study presents a series of educational policy implications to improve sports science students' employability by developing their entrepreneurial spirit.

### 1. Introduction

Due to the economic recession and the significant increase in unemployment in Europe, there has been renewed interest among researchers in the role of entrepreneurship and its determinants (Teixeira et al., 2018). European governments are increasingly aware of the importance of entrepreneurship as a sustainable development source, both economically and socially. This growing importance has led to numerous European Union (EU) initiatives based on the Lisbon Strategy and the European Small Business Chapter (European Commission, 2010). The objective set in the Lisbon Strategy was to make the EU economy the most competitive in the world by 2010, based on knowledge and employment, while the European Small Business Chapter is an instrument by which the Member States have committed themselves to undertaking actions to support small businesses.

However, the youth unemployment rate is still higher than the overall unemployment rate in most European countries (Eurostat, 2022; Macrotrends, 2020). Entrepreneurship education is considered a powerful tool for reducing unemployment (Maheshwari et al., 2022; Maina, 2013). Previous studies have confirmed the positive role of

universities in developing the entrepreneurial behaviours and entrepreneurial intentions (EI) of university students (Barba-Sánchez et al., 2022; Law & Breznik, 2017; Saeed et al., 2015). Fostering entrepreneurship among university students to prepare them for professional employability has become an important issue for public policies (Alves et al., 2019; Nowiński et al., 2019). In this research, entrepreneurship is understood as a process that culminates in business creation and requires the following stages: pre-start-up, growth, and maturity (Vesalainen & Pihkala, 1999).

The vast majority of studies have focused on analysing university business students' EI and have not focus their attention on other student populations (Jones & Jones, 2014). Entrepreneurial intentions are defined as a state of mind that directs an individual's attention, experience, and actions towards a concrete object, the creation, and the growth of a business (Bird, 1988). This fact is worrying since sports and entrepreneurship share similar characteristics (e.g., risk-taking, resilience, creativity, proactivity) due to the need for innovation to drive change (Jones et al., 2020). Thus, sports science students are often more prone to entrepreneurship (Teixeira et al., 2018). They have this predisposition to entrepreneurship because the skills they develop during

\* Corresponding author at: Departament d'Educació Física i Esportiva, Universitat de València, Gascó Oliag Street 3, 46010, Valencia, Spain.  
E-mail address: [ferran.calabuig@uv.es](mailto:ferran.calabuig@uv.es) (F. Calabuig).

physical sports practice can be highly transferable to entrepreneurial skills through university education (González-Serrano et al., 2017). In this vein, several studies have demonstrated how professional athletes have a higher predisposition to be driven by higher EI and abilities than the average population (Hindle et al., 2021; Jones & Jones, 2014; Pervun et al., 2022, Teixeira & Forte, 2017). Several actors have also highlighted the importance of integrating entrepreneurship-related offers as part of dual career programmes for sportsmen and sportswomen (Hakkers, 2019). Because of the reasons presented above, the sports entrepreneurship research field has grown tremendously in recent years (González-Serrano et al., 2020; Pellegrini et al., 2020). In addition, the entrepreneurial nature of the sport has been increasingly highlighted (Rexhepi et al., 2018; González-Serrano et al., 2023), and sportsmen and sportswomen's potential to develop an entrepreneurial career has also been examined (Pervun et al., 2022).

Another important aspect to consider is how the environment could influence sports science students' EI. Specifically, a country's culture can influence this predisposition towards entrepreneurship (GEM, 2022; Porfirio et al., 2023). The rates of youth unemployment (Eurostat, 2022) and entrepreneurial activity (Bosma et al., 2020) vary across countries. Therefore, more studies analysing the effects of culture on EI and its antecedents are needed, using samples of students from different countries to internationally clarify the determinants of university students' EI (Liñán & Chen, 2009; Nowiński et al., 2019).

Thus, this study aims to analyse whether the culture of the country of origin of sports science students (SSS) affects the antecedents of their EI. This paper contributes to the literature in several ways. First, it analyses students' EI in the sports sector based on the opportunities it presents (Eurostat, 2021) to create different sports enterprises to meet the demands of sports customers. Studies that examine science students are scarce (Jones & Jones, 2014; Naia et al., 2017), although the importance of entrepreneurship in this industry is increasingly highlighted (González-Serrano et al., 2020). Second, this paper uses a multicultural approach that is lacking and necessary in the entrepreneurship literature (González & Kobylińska, 2019; Röhl, 2019) to internationalize the theories of entrepreneurship. In this way, the knowledge of the determinants of EI is deepened to develop educational policies that improve students' employability in the sports sector through entrepreneurship and reduce the high rates of youth unemployment in European countries.

## 2. Theoretical framework: hypothesis proposals

### 2.1. Sports and entrepreneurship

Sports is one of the largest and fastest-growing industries globally (Ratten, 2018a), which has made it one of the most globalized and changing industries due to its competitive nature. Thus, innovation and entrepreneurship are needed in sports to cope with uncertainties and to integrate new societal developments (Andersen & Ronglan, 2015). For this reason, there has been a growing interest in sport entrepreneurship (González-Serrano et al., 2020). However, few studies have explained what sports entrepreneurship might be (Hammerschmidt et al., 2022).

Ratten (2010) was the first author to develop this theory and define the concept of sports entrepreneurship. She defined it as "a sports-related organization acting innovatively in a business context" (p.559). Ratten (2011) develops the sports entrepreneurship discipline by focusing on the link between entrepreneurship and sport management as a way of understanding the formation and development of new businesses. One year later, Ratten (2012) noted that entrepreneurship in a sports context involves the mindset of people actively seeking new opportunities around a sport. This author also highlighted that sports entrepreneurship is a remarkably complex concept describing innovation, risk-taking, and proactive behaviour in the sport context. Some years later, Hammerschmidt et al. (2020) defined sports entrepreneurship as "the process by which individuals, acting in a sports

environment, pursue opportunities without resources currently controlled" (p.842). Thus, sports entrepreneurs could develop their activity in nonprofit organizations, the public sector, or the commercial market (Hammerschmidt et al., 2022).

Sports entrepreneurship has become a driver of change, innovation, and employment in this industry and is crucial for meeting the rapidly changing demands of consumers in this sector (Ball, 2005). For this reason, there is a latent need to develop policies aimed at a better understanding of the social and economic factors that stimulate entrepreneurship in sport (Leitão, 2017). This is the case for students' EI in the sports sector, for which, despite the significant potential that the development of these EIs has in these individuals for social development (Adatepe & Kul, 2018), there are still few studies. Furthermore, even more comparative studies with sports science students from different countries to internationalize the theories of sport entrepreneurship are limited, focusing only on two countries (González-Serrano et al., 2018; González-Serrano, Gonzalez-Garcia et al., 2021).

Regarding the studies developed with sports science students, Lara-Bocanegra et al. (2022) found that sex and socioeconomic level did not influence EI, but the existence of an entrepreneur in the family or closed environment could affect it positively. Pervun et al. (2022) showed that participation in individual sports but not in team sports fosters EI. Moreover, being a star youth athlete further boosts the likelihood of being an entrepreneur. Costa and Miragaia (2022) indicated that several barriers to female entrepreneurship in sports remain. However, physical activity and sports and higher education could aid the development of skills and abilities that are vital to entrepreneurial initiatives. González-Serrano et al. (2018) analysed the internal and external factors that could affect the EI of sports science students. The results indicated that both the perceived entrepreneurial capacity to create an enterprise and the perceived entrepreneurial capacity to become an entrepreneur are two explanatory variables of sports science students' entrepreneurial intentions. Liu et al. (2021) showed that entrepreneurial attitude, subjective norms, and perceived behaviour control explain the EI of sports major students after graduation. Entrepreneurial perceived behavioural control was the main factor affecting EI, although the success rate of entrepreneurs will be higher when the three elements play a rational role.

Thus, due to the growing interest in the sports business, a change in sports education towards including a greater emphasis on entrepreneurial education is needed (Ratten, 2018b). Entrepreneurship education focuses on teaching risk assessment, opportunity recognition, and creativity (Fayolle, 2010). According to Ratten and Jones (2018), connecting student-athletes with entrepreneurship education helps to better develop their employability and soft skills. In this vein, several studies have analysed the role of entrepreneurship education in sports sciences, finding a positive impact of entrepreneurship education on the EI of sports science students (González-Serrano et al., 2018; González-Serrano Calabuig et al., 2021; Lara-Bocanegra, Bohórquez et al., 2022; Maleté et al., 2022). González-Serrano et al. (2018) found that attending entrepreneurship courses could foster sports science EI and the ability to become an entrepreneur. González-Serrano et al. (2021) showed how sports science students significantly improved their perception of perceived behavioural control and the university's climate towards entrepreneurship by bringing sports entrepreneurs to the university in a sports management subject. In addition, Lara-Bocanegra, Bohórquez, et al. (2022) analysed the influence of a sports entrepreneurship workshop on sports science students' entrepreneurial abilities. They found that this workshop significantly increased the sports science students' entrepreneurial intention as well as their perceived feasibility and desirability. Maleté et al. (2022) analysed the effects of a sport-based intervention program on the life skills and entrepreneurial mindsets of youth from three African countries. They demonstrated the relevance of sport-based interventions to youth development outcomes in different contexts and the transformative potential of youth sport reported in previous studies. Therefore, according to Ratten and Jones

(2018), in recent years, a need to change the sports education curriculum to reflect emerging areas of interest, such as entrepreneurship, has been highlighted. Additionally, due to the large impact of COVID-19 on society, new entrepreneurial education management practices are needed to cope with this situation (Ratten & Jones, 2021).

## 2.2. The theory of planned behavior and entrepreneurial skills to explain EI

The cognitive approach provides a valuable point of view for analysing the phenomenon of entrepreneurship through the study of perceptions and intentions (Arranz et al., 2017). Becoming an entrepreneur is a deliberate and conscious process (Krueger et al., 2000). Entrepreneurial intentions encompass the wish to develop one's own business, thereby forming a solid foundation for accurate forecasts regarding entrepreneurial progress (Krueger et al., 2000). People's EI is a fundamental, enduring, and frequently used element in entrepreneurship research (Kautonen et al., 2015; Krueger et al., 2000). Furthermore, some authors have suggested that EI is a stable construct over time (Joensuu-Salo et al., 2020) and that both high and low levels of entrepreneurial intention remain fairly stable.

In recent years, the theory of planned behavior (TPB) (Ajzen, 1991) has become the most widely used theory for both explaining and predicting human behaviour, and it is the predominant model for analysing EI determinants (Maheshwari et al., 2022). The first predictor is the attitude towards entrepreneurship (AT), which refers to the degree to which an individual has favourable or unfavourable evaluations of the entrepreneurial behaviour in question (creating a business) (Ajzen, 1991). Attitudes are determined by the total accessible behavioural beliefs that link behaviour to various outcomes and other attributes. Several authors have highlighted the importance of attitudes towards entrepreneurship (AT) in developing students' EI. In most cases, a favourable attitude towards entrepreneurship as a career path (creating a business) for university students is positive and significantly related to EI (Bae et al., 2014; Gorgievski et al., 2018; Malebana & Swanepoel, 2015; Nowiński et al., 2019). This means that if sports science students have a favourable attitude towards entrepreneurship, they may show a greater predisposition later on towards the intention of becoming entrepreneurs and developing their own business. Therefore, the following hypothesis is presented:

**Hypothesis 1.** Attitude towards behaviour has a positive direct relationship with sports science students' EI.

The second predictor is entrepreneurial perceived behavioural control (PBC), which refers to a person's control beliefs regarding entrepreneurship behaviour (Iakovleva et al., 2011). Specifically, this construct relates to the perceived ease or difficulty of being an entrepreneur (Tkachev & Kolvereid, 1999). This construct also relates to the perceived controllability of the behaviour (Ajzen, 2002), understanding it as the perception of creating and managing a business successfully. In the case of this variable, numerous studies have also shown a positive and direct relationship between a positive perception of university students' capability of creating and managing a business successfully and their EI (Dos Santos & Silveira, 2018; Galvão et al., 2018; Liñán & Chen, 2009; Naia et al., 2017). Therefore, a good perception of sport science students regarding the ability to create a business and manage it successfully may be related to the development of EI. Thus, the following hypothesis is proposed:

**Hypothesis 2.** Perceived behavioural control has a positive direct relationship with sports science students' EI.

The last predictor of the TPB theory is the entrepreneurial subjective norm (SN), which refers to the perceived social pressure to perform or avoid entrepreneurial behaviour (to be an entrepreneur). It refers to the perceived probability that important reference groups of individuals will approve or reject an individual's decision to be an entrepreneur,

establishing the norm that specifies how the subject should behave. Depending on the social situation in the environment, these pressures can become a trigger or a barrier to individuals developing an entrepreneurial career (Iakovleva et al., 2011). Some research has shown a direct influence of the support of the important reference group in the decision of university students to be entrepreneurs (Engle et al., 2010; Farooq et al., 2018). Therefore, if sport science students' close environment (family, friends, and colleagues) approves of their decision to become entrepreneurs, they may show greater intentions to become entrepreneurs. Thus, the following hypothesis is proposed:

**Hypothesis 3.** Subjective norms have a positive direct relationship with sports science students' EI.

Other internal variables, such as entrepreneurial skills, can affect the EI (entrepreneurial intentions) of university students (Chen et al., 1998). Entrepreneurial skills indicate the confidence that subjects have a sufficiently high level of specific competencies related to entrepreneurship (Liñán, 2008). Possessing these skills could make university students feel more capable of creating their businesses (Denoble et al., 1999).

These sorts of skills could be more easily exercised by entrepreneurs (Liñán, 2008). Curiosity, exploration, and creativity, among others, positively affect EI (Chia & Liang, 2016). Therefore, they could be associated with greater personal attractiveness (AT) (Carsrud, 1992; Boyd & Vozikis, 1994) and greater perceived ease and control of developing entrepreneurial behaviours (PBC) (Farooq et al., 2018; Liñán, 2008; Munir et al., 2019) and would increase the perceived support from their close environment to be an entrepreneur (Liñán, 2008). People who have a higher level of entrepreneurial skills feel more prepared to successfully create and manage a business in the future (PBC). It could also be argued that a high self-perception of entrepreneurial skills would also be associated with more favourable attitudes towards entrepreneurship (AT) and with higher levels of perceived support from their close environment to be an entrepreneur (SN). Therefore, the following hypothesis is proposed:

**Hypothesis 4.** Attitude towards behaviour, perceived behavioural control and subjective norms mediate the relationship between entrepreneurial skills and EI.

## 2.3. Contextual variables affecting EI: country culture towards entrepreneurship

In addition, there are external or contextual variables that could affect EI, and its determinants often vary regarding the context (Bae et al., 2014). Individuals' entrepreneurial intentions and behaviours are determined by internal and contextual factors (Parente et al., 2019). Some researchers have noted that social values and beliefs regarding entrepreneurship will affect the motivational antecedents of EI (Liñán & Chen, 2009). Hofstede's values theory (2001) is one of the dominant traditions that classifies cultures according to their value systems (Malach-Pines & Kaspi-Baruch, 2008) to understand entrepreneurial activity differences between countries. Hofstede (2001) suggested four dimensions (uncertainty avoidance, masculinity, individualism, and power distance). He later added two more, which can be used to distinguish some cultures from others (long-term orientation and indulgence). He assigned indices in each of the nations and connected the dimensions with society's demographic, geographic, economic, and political aspects. These dimensions are individualism vs. collectivism, power distance, masculinity vs. femininity, uncertainty avoidance, long-term orientation, short-term orientation, and indulgence vs. restraint. All these values describe the relationships that individuals have in each culture.

Less developed countries usually have a predominance of collectivism, high power, and social stratification values, while individualism and low stratification are usually characteristic of developed countries (Tang & Koveos, 2008). In particular, there is some evidence that

individualist values are positively related to entrepreneurship (Liñán et al., 2016; Yang et al., 2015). Considering these values, some researchers (Hayton et al., 2002) argue that entrepreneurship is fostered in cultures with low uncertainty avoidance (UA-), high masculinity (MA+), high individualism (IND+), and low distance to power (DP-). This means that in countries where people are supposed to look after themselves and their direct family only (IND+), society is driven by competition, achievement and success (MA+), people have a culture that does not feel threatened by ambiguous or unknown situations (UA-), and the power in society is distributed equally (PD-), the culture is more prone to entrepreneurship. However, Hofstede et al. (2004) added a psychological perspective, stating that when individuals are dissatisfied, they tend to become self-employed even though their culture does not have a favourable view of entrepreneurship.

#### 2.4. Specific contextual factors: Lithuania, Spain, Croatia, Ukraine, and Serbia

##### 2.4.1. Youth unemployment rate

Regarding the youth unemployment rate in these countries in Europe in 2019 (Eurostat, 2022; Macrotrends, 2020), Spain has the highest unemployment rate (24.70%). Serbia also has similar youth unemployment rates (21.60%). Ukraine has a slightly lower rate (18.83%), followed by Croatia (13.40%) and Lithuania (8.60%).

##### 2.4.2. Income level

Regarding the type of economy to which students from these countries belong, according to the World Bank (2021), Croatia, Lithuania, and Spain belong to the group of high-income countries. However, Serbia belongs to the group of upper-middle-income countries and Ukraine to the group of lower-middle-income countries.

##### 2.4.3. Educational plan for sports education in Lithuania, Spain, Ukraine, Serbia, and Croatia

A comparison of education systems showed some differences among these countries (see Annex 1). Notably, all the sports sciences universities (University of Valencia Spain, Lithuanian Sports University Lithuania, Borys Grinchenko Kyiv University Ukraine, University of Zagreb Croatia and University of Novi Sad Serbia) covered four areas: education, health, recreation, and sports management. The number of degrees ranges from only one four-year degree in Spain or a five-year degree in Croatia to over three different degrees in Ukraine and four different degrees in Lithuania and Serbia. Analysis of all degrees in all countries showed SSS take courses in health, teaching, sports training, and management.

##### 2.4.4. Global entrepreneurship index

Finally, the Global Entrepreneurship Index (GEI) (Ács, et al., 2018) measures the quality of entrepreneurship and the propensity with which entrepreneurial ecosystems are supported. Lithuania is the best ranked, with a score of 51.10 points. Spain holds second place with a score of 45.30 points, followed by Croatia, with a score of ten points lower (34 points). Next is Ukraine, with 26.80 points, followed by Serbia, with a very similar score (26.40 points).

##### 2.4.5. Hofstede values

Regarding the Hofstede values of these countries, first, concerning power distance levels, Ukraine is the country with the highest score, while Lithuania has the lowest. Power distance is defined as the extent to which the less powerful members of both organizations and institutions in a country expect and accept that power will be distributed unequally (Hofstede, 2001). Second, regarding individualism values, Lithuania has the highest level, and Serbia and Ukraine have the lowest. Individuality refers to the degree of interdependence that a society maintains among its members (Hofstede, 2001). Third, regarding masculinity, Serbia has the highest levels, and Lithuania has the lowest. Masculinity refers to the

degree to which society will be driven by competition, achievement and success or by caring for others and quality of life (Hofstede, 2001). Regarding uncertainty avoidance, Ukraine has the highest values, and Lithuania has the lowest. Uncertainty avoidance refers to the way a society deals with the fact that the future can never be known (should we try to control the future or just let it happen?) (Hofstede, 2001). Regarding long-term orientation, Ukraine has the highest levels, while Spain has the lowest. Long-term orientation describes how each society has to maintain some links with its own past while facing the challenges of the present and the future (Hofstede, 2001). Finally, regarding the value of indulgence, Spain presents the highest levels, while Ukraine has the lowest. Indulgence refers to the degree to which people try to control their impulses and desires, considering the way they were raised (Hofstede, 2001). Please see Fig. 1.

According to Hagger et al. (2007), cultural practices and values moderate the relationships among the constructs of the TPB. In collectivist cultures, people's expectations in the immediate environment, i.e., SN, are usually considered, so this variable will have a stronger relationship with EI than in individualistic cultures (Moriano et al., 2012). Based on all the information presented in this section and the contextual differences found in these countries, the following hypothesis is proposed:

**Hypothesis 5.** Attitudes towards behaviour and subjective norms mediate the relationship between country culture and EI.

Please see Fig. 2 to observe the sports science students' EI model based on the hypotheses proposed.

### 3. Method

#### 3.1. Sample

Data were collected from 764 students in the final year of sports sciences from faculties in five European countries: Lithuania, Spain, Ukraine, Serbia, and Croatia (for more information, please see Table 1). A total of 70.30% of the sports science students were male, while 29.70% were women, with a mean age of 23.32 (DT=3.66). The study sample consisted of students who were informed about basic knowledge from the field of sport management. The sport management experiences are based on the least one subject in previous academic careers in all countries. It aimed to cover the study sample with subsamples of sports science students attending similar study programs in sports science at institutions in European countries.

#### 3.2. Instruments

A structured questionnaire was used to measure the following variables:

- Entrepreneurial intentions (EI): This scale was extracted from the EIQ (Entrepreneurial Intention Questionnaire) by Liñán and Chen (2009). It is composed of six items that measure the level of agreement or disagreement with the willingness to be an entrepreneur or create a business (e.g., I am ready to do anything to be an entrepreneur).
- Attitude towards behaviour (AT): This scale was also extracted from the EIQ of Liñán and Chen (2009). It comprises five items that measure the subjects' opinions and attitudes about choosing a career as an entrepreneur (e.g., Being an entrepreneur implies more advantages than disadvantages).

This scale was extracted from EIQ by Liñán and Chen (2009). It is composed of six items that refer to the control over the process of starting a new business or a new project and the perceived self-efficacy in this process (e.g., I can manage the process of developing a new firm).

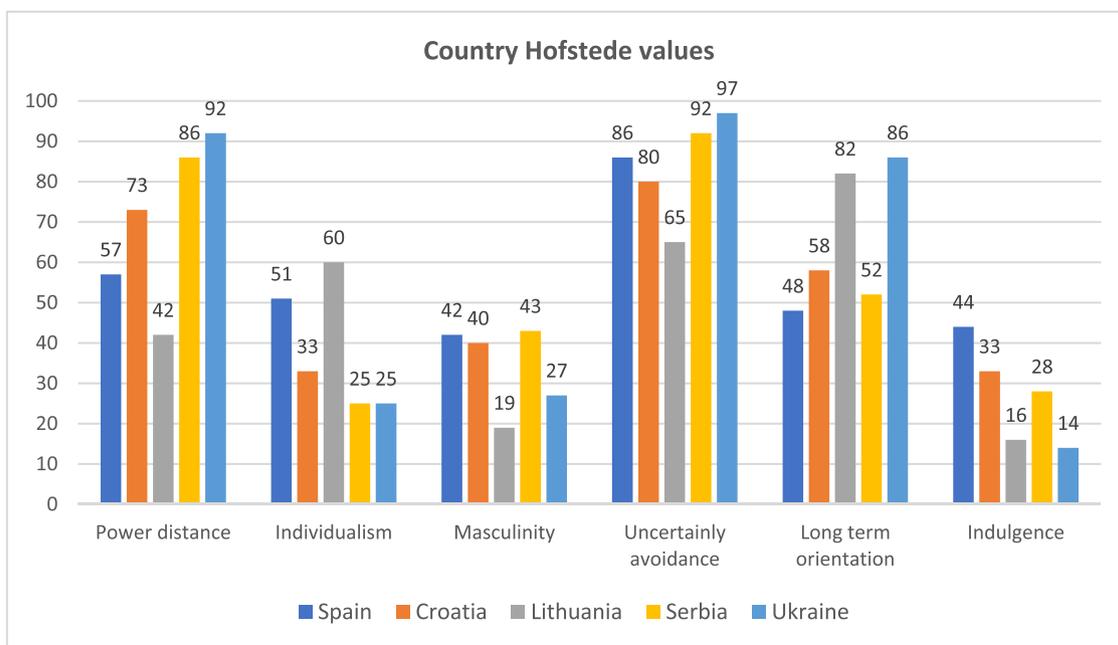


Fig. 1. Hofstede values according to countries (data extracted from 2019).

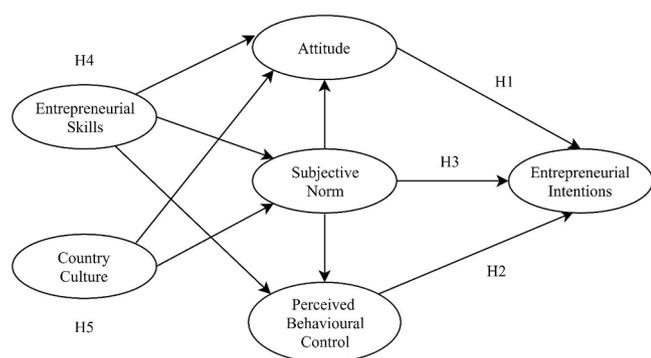


Fig. 2. Proposed hypothesized model for SSS entrepreneurial intentions.

Table 1

Description of the sport science student’s sample.

	Lithuania N=151	Spain N=134	Ukraine N=93	Serbia N=127	Croatia N=259	Total N=764
Gender (%)						
Male	58.00	81.30	63.40	75.40	71.80	70.30
Female	42.00	18.70	36.60	24.60	28.20	29.70
Entrepreneurship training (%)						
Yes	54.60	13.50	27.00	23.60	17.00	25.30
No	45.40	86.50	73.00	76.40	83.00	74.70
Labour experience in the sport industry (%)						
Yes	58.00	79.10	80.90	59.80	72.60	69.80
No	42.00	20.90	19.10	40.20	27.40	30.20
Age (M ±SD)	24.65 ±4.52	22.99 ±3.45	22.11 ±3.88	22.63 ±3.42	23.52 ±2.97	23.32 ±3.66

- Subjective norm (SN): This scale was also extracted from the EIQ of Liñán and Chen (2009). It comprises three items that measure the decision’s approval to create a firm by the people in the closest environment (e.g., one’s friends, family).
- Entrepreneurial skills (ES): This scale was extracted from Liñán (2008), and it comprises six items that measure different skills related to entrepreneurship: recognition of opportunities, creativity,

problem-solving, leadership and communication skills, development of new products and services, and professional networks.

- Country climate towards entrepreneurship (CC): This scale was extracted from the EIQ of Liñán and Chen (2009). It comprises five items that measure the degree of agreement or disagreement on aspects related to entrepreneurial activity and the entrepreneur’s role in the country (e.g., the entrepreneur’s role in the economy is not sufficiently recognized).

All scales were measured with Likert-type scales, ranked from 1 (strongly disagree) to 7 (strongly agree). Finally, some sociodemographic variables were measured; these included gender, age, country, entrepreneurship training, and labour experience.

### 3.3. Procedure

A cross-sectional quantitative approach was used in this research. Data were collected by surveying a sample of sports science students through an online questionnaire during the 2018/2019 academic year. For this research, it was not necessary to obtain approval from the Ethics Committee of the university where this study was conducted and managed (University of Valencia). According to the Ethics and Human Research Committee of this university, it is not necessary to obtain approval to conduct an opinion survey on a topic or issue, professional situation, or satisfaction with certain issues.

However, a preamble was included in the survey with the information presented about the project (topic and purpose), the benefits that the information collected by the survey can bring, the willingness to participate, and a guarantee of the anonymity of the data (Data Protection Law). A contact person was also indicated to request further information, and a paragraph in which the respondent voluntarily accepted participation in the research and gave his or her consent once the survey was completed online was included. In this way, following the guidelines indicated by the Ethics and Human Research Committee of the University of Valencia for conducting this type of research, all this information was added to the beginning of the questionnaire. The University of Valencia was in charge of developing the original questionnaire and administering it to the different universities. The students spent approximately 15 minutes replying to the questionnaires.

3.4. Data analysis

Confirmatory factorial analysis (CFA) and structural equation modelling (SEM) were used to test the relations and paths among latent dimensions in the hypothesized model and study hypotheses. In the CFA, the metric characteristics of scales, the internal fit indices with factor loadings, and the interitem reliability of latent dimensions were calculated using Cronbach’s alpha, composite reliability (CR), and average variance extracted (AVE), which are proposed by Hu and Bentler (1999).

In the SEM analysis, indices such as the comparative fit index (CFI), the nonnormed fit index (NNFI), and the incremental adjustment index (IFI) were calculated. Values of these indices above 0.90 represent good fit indicators (MacCallum & Austin, 2000). In addition, the root mean square error of approximation (RMSEA) was calculated, it fits within the range from 0.05 to 0.10 and is considered adequate (Byrne, 2000; Steiger, 2007). Last, in SEM analysis, attitude towards behaviour, subjective norms, and perceived behavioural control were analysed as a mediator between entrepreneurial skills and country culture as independent variables on entrepreneurial intentions as a dependent variable. The mediation analysis (Judd and Kenny, 2010; Pearl, 2014) was confirmed using the Sobel test ( $p < 0.001$ ). This step provided the quality approach to understanding the direct, indirect, and total effects within latent dimensions of the structural model.

Data analysis was prepared using Smart PLS version 3.3.2 for Windows. As additional statistical indicators of the goodness-of-fit indices of the proposed models, SPSS, AMOS, and version 24.0 were used.

4. Results

The results showed males’ frequent presence in all subsamples, from 58% in Lithuania to 81.30% in Spain (Table 1). This result is expected given the greater interest of males studying in sports sciences, as previous studies have highlighted (Forsyth et al., 2019). Specifically, the percentages of the total population of male sport sciences students enrolled in the final year of the sports sciences degree during the 2018-2019 academic year in these universities ranged from 82.19% to 69.90%. When considering the representativeness of male and female student numbers, we can observe that most countries met the criteria, with the exceptions being Lithuania and Ukraine. However, in both countries, the number of male students significantly exceeded the number of female students. Thus, this study accurately reflects the current gender distribution among students in this field. In addition, comparative descriptive statistics indicate that there are different possibilities for entrepreneurship training in different European countries. Namely, 54.60% of students from Lithuania had opportunities to receive entrepreneurship training, which is relatively more than the average sample result of 25.30%. The results showed that 72.60% of students in Croatia, over 79.10% in Spain, and 80.90% in Ukraine, which was the highest percentage, had labour experience.

The study findings are structured in three segments: (i) descriptive statistics (Table 2), (ii) CFA analysis (Table 3), and (iii) SEM analysis (Table 4, Table 5, and Fig. 3). In Table 2, the mean scores of the

**Table 2**  
Internal consistency, composite reliabilities, and correlations for the examined latent factors (all respondents).

		M	SD	$\alpha$	rho_A	CR	AVE	R						
								1	2	3	4	5		
1.	AT	4.65	1.68	0.92	0.93	0.94	0.76							
2.	CC	4.24	1.62	0.73	0.76	0.82	0.50	0.22 a						
3.	EI	3.92	1.86	0.95	0.96	0.96	0.82	0.78 a	0.25 a					
4.	ES	4.99	1.31	0.85	0.85	0.89	0.57	0.47 a	0.17 a	0.51 a				
5.	PBC	3.67	1.62	0.89	0.90	0.91	0.64	0.59a	0.22 a	0.69 a	0.57 a			
6.	SN	5.65	1.35	0.83	0.83	0.90	0.74	0.31 a	-0.01	0.20 a	0.24 a	0.17 a		

Note: AT – Attitude towards entrepreneurship, CC – Country culture, EI – Entrepreneurial intentions, ES – Entrepreneurial skills, PBC – Perceived behavioural control, SN – Subjective norms; a -  $p < 0.01$ .

**Table 3**  
Descriptive statistics and CFA item statistics (all respondents).

Variables	M	SD	Sk	Kur	Factor loading	SMCs
EI						
Item 1	3.77	1.71	0.00	-0.88	0.81	0.69
Item 2	3.71	1.81	0.12	-0.96	0.91	
Item 3	3.89	1.88	0.08	-1.03	0.93	
Item 4	4.04	1.85	-0.03	-1.03	0.93	
Item 5	4.03	1.98	-0.06	-1.23	0.92	
Item 6	4.08	1.95	-0.03	-1.19	0.92	
AT						
Item 7	4.55	1.54	-0.28	-0.36	0.78	0.28
Item 8	4.49	1.72	-0.32	-0.73	0.91	
Item 9	5.06	1.73	-0.67	-0.41	0.89	
Item 10	4.78	1.64	-0.52	-0.44	0.91	
Item 11	4.36	1.75	-0.23	-0.81	0.89	
SN						
Item 12	5.68	1.405	-1.09	0.82	0.83	0.06
Item 13	5.67	1.334	-1.08	1.10	0.90	
Item 14	5.60	1.302	-0.87	0.58	0.85	
PBC						
Item 15	3.63	1.53	0.11	-0.55	0.78	0.33
Item 16	3.79	1.65	0.04	-0.82	0.85	
Item 17	3.81	1.63	-0.03	-0.81	0.89	
Item 18	3.42	1.62	0.17	-0.79	0.67	
Item 19	3.39	1.61	0.18	-0.87	0.80	
Item 20	4.01	1.67	-0.08	-0.69	0.81	
ES						
Item 21	4.68	1.32	-0.33	-0.12	0.77	0.03
Item 22	5.12	1.33	-0.52	-0.07	0.75	
Item 23	5.36	1.15	-0.57	0.26	0.75	
Item 24	5.32	1.29	-0.62	0.14	0.75	
Item 25	4.61	1.32	-0.28	-0.28	0.78	
Item 26	4.88	1.43	-0.39	-0.43	0.72	
CC						
Item 27	3.50	1.77	0.11	-0.99	0.72	-
Item 28	4.10	1.62	-0.21	-0.59	0.77	
Item 29	4.31	1.60	-0.31	-0.53	0.73	
Item 30	4.49	1.52	-0.34	-0.41	0.70	
Item 31	4.79	1.58	-0.53	-0.33	0.50	

Note: AT – Attitude towards entrepreneurship, CC – Country culture, EI – Entrepreneurial intentions, ES – Entrepreneurial skills, PBC – Perceived behavioural control, SN – Subjective norms.

**Table 4**  
Fit indices of the entrepreneurial intentions model for all countries together and for each specific country (Lithuania, Spain, Ukraine, Serbia and Croatia).

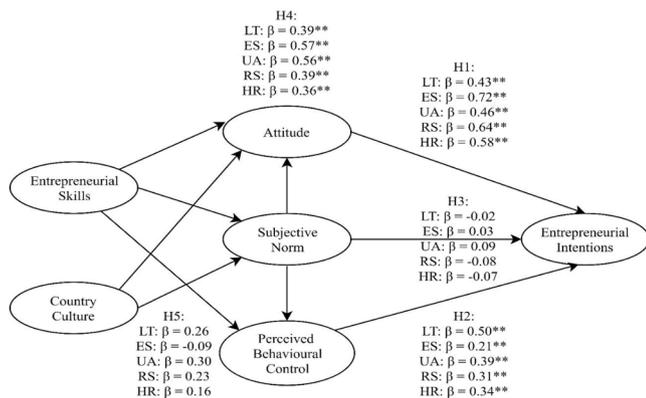
	$\chi^2$	df	$\chi^2/df$	CFI	IFI	RMSEA
Lithuania	843.85	425	1.99	0.85	0.85	0.08
Spain	714.47	425	1.68	0.92	0.92	0.07
Ukraine	782.08	425	1.84	0.83	0.83	0.08
Serbia	706.48	425	1.66	0.91	0.91	0.07
Croatia	879.97	425	2.07	0.90	0.91	0.06
All countries	1674.66	425	3.94	0.92	0.92	0.06

**Table 5**  
Direct, total indirect and total effects of ES, CC, AT, SN and PBC on EI.

Effects	Country	ES B	CC	AT	SN	PBC
Direct	Lithuania	0.00	0.00	0.43**	-0.02	0.50**
	Spain	0.00	0.00	0.72**	0.03	0.21**
	Ukraine	0.00	0.00	0.46**	0.09	0.39**
	Serbia	0.00	0.00	0.64**	-0.08	0.31**
	Croatia	0.00	0.00	0.58**	-0.07	0.31**
	All	0.00	0.00	0.59**	-0.04	0.34**
Total Indirect	Lithuania	0.39**	0.26	0.00	0.24	0.00
	Spain	0.57**	-0.09	0.00	0.12	0.00
	Ukraine	0.56**	0.30	0.00	0.14	0.00
	Serbia	0.39**	0.23	0.00	0.20	0.00
	Croatia	0.36**	0.16	0.00	0.14	0.00
	All	0.45**	0.17	0.00	0.14	0.00
Total	Lithuania	0.39**	0.26	0.43**	0.22	0.50**
	Spain	0.57**	-0.09	0.72**	0.15	0.21**
	Ukraine	0.56**	0.30	0.46**	0.23	0.39**
	Serbia	0.39**	0.23	0.64**	0.12	0.31**
	Croatia	0.36**	0.16	0.58**	0.07	0.31**
	All	0.45**	0.17	0.59**	0.10	0.34**
R2	Lithuania	-	-	0.36	0.10	0.25
	Spain	-	-	0.40	0.13	0.36
	Ukraine	-	-	0.42	0.13	0.51
	Serbia	-	-	0.33	0.06	0.36
	Croatia	-	-	0.22	0.05	0.30
	All	-	-	0.29	0.06	0.33

EI: R2=0.69 (Lithuania), R2=0.76 (Spain), R2=0.63 (Ukraine), R2=0.66 (Serbia), R2=0.59 (Croatia), R2=0.69 (All)

Note:  $\beta$  = standardized path of coefficients; ES= Entrepreneurial Skills; CC= Country Culture; AT= Attitude towards entrepreneurship, SN= Subjective Norms; PBC= Perceived Behavioural Control; ES= Entrepreneurial Skills.



**Fig. 3.** Results of proposed hypothesized model: direct and indirect impact of entrepreneurial skills and country culture on EI.

Notes: LT – Lithuania, ES – Spain, UA – Ukraine, RS – Serbia, HR – Croatia.  $\beta$  – standardized path of coefficients, \*\*  $p < 0.01$ .

subjective norm ( $M=5.65$ ;  $SD=1.34$ ) and entrepreneurial skills ( $M = 4.99$ ;  $DT=1.31$ ) were relatively greater than those of the other latent dimensions. The next latent variable with higher means was the attitude towards behaviour ( $M = 4.65$ ;  $DT=1.68$ ), followed by the country culture ( $M = 4.24$ ;  $DT = 1.62$ ). Last, the latent variables with lower means were entrepreneurial intentions ( $M = 3.92$ ;  $DT=1.86$ ) and perceived behavioural control ( $M = 3.67$ ;  $DT=1.62$ ).

Furthermore, the results of the reliability and validity of the measurement model (internal consistency, composite reliabilities, and correlations for the examined latent factors) are presented in Table 3. Cronbach’s alpha values were on an acceptable level ( $>0.73$ ), which is recommended by Nunnally and Bernstein (1994). Composite reliability (CR) indicators were greater than ( $>0.82$ ), which is in line with the proposals of Bagozzi and Yi (1988), while the AVE satisfied the criteria by Fornell and Larcker (1981), with values from 0.50 to 0.82. Based on

Kaiser’s (1974) suggestions and recommendations, all factor loadings were higher than the criteria value of 0.40 (please see Table 3).

Third, the structural model was tested, and acceptable fit indices for all countries separately were obtained. All the fit indices of the models for predicting SSS entrepreneurial intentions from the different countries are presented in Table 4.

In Table 5, a summary of the explanation of the direct, indirect, and total effects and paths among latent variables is presented. Entrepreneurial skills showed an indirect effect on EI (entrepreneurial intentions) in all countries ( $\beta = 0.39$  – Lithuania,  $\beta = 0.57$  – Spain,  $\beta = 0.56$  – Ukraine,  $\beta = 0.39$  – Serbia,  $\beta = 0.36$  – Croatia; all significant at the level  $p < 0.01$ ), which partially supports Hypothesis 1. This indirect effect was developed over the AT (attitude towards behaviour) and PBC (perceived behavioural control). AT and PBC mediate the relationship between entrepreneurial skills and entrepreneurial intentions in these paths: (1) Entrepreneurial skills -> Attitude towards behaviour -> Entrepreneurial intentions; and (2) Entrepreneurial skills -> Perceived behavioural control -> Entrepreneurial intentions (please see Table 5).

On the other hand, the results showed that attitude towards behaviour, subjective norms, and perceived behavioural control does not mediate the relationship between country culture and entrepreneurial intentions ( $p > 0.05$ ), so Hypothesis 5 is rejected.

In terms of the structural model, as shown in Fig. 3, the results showed direct positive significant effects between AT and EI (Hypothesis 1) in all countries ( $\beta = 0.43$  for students from Lithuania,  $\beta = 0.72$  for students from Spain,  $\beta = 0.46$  for students from Ukraine,  $\beta = 0.64$  for students from Serbia, and  $\beta = 0.58$  for students from Croatia), which supported and confirmed Hypothesis 1. Likewise, a significant direct effect from PBC on EI (Hypothesis 2) in all countries is confirmed ( $\beta = 0.50$  for students from Lithuania,  $\beta = 0.21$  for students from Spain,  $\beta = 0.39$  for students from Ukraine,  $\beta = 0.31$  for students from Serbia, and  $\beta = 0.34$  for students from Croatia). However, the direct effect between SN and EI (Hypothesis 3) was not confirmed. Therefore, significant direct effects were revealed in the following paths: (1) Attitude towards behaviour -> Entrepreneurial intentions; and (2) Perceived behavioural control -> Entrepreneurial intentions.

Then, the indirect effects of entrepreneurial skills (Hypothesis 4) and country culture (Hypothesis 5) on EI were tested, as shown in Table 6. Entrepreneurial skills showed an indirect effect on EI in all countries ( $\beta = 0.39$  – Lithuania,  $\beta = 0.57$  – Spain,  $\beta = 0.56$  – Ukraine,  $\beta = 0.39$  – Serbia,  $\beta = 0.36$  – Croatia, all significant at the level  $p < 0.01$ ), which partially supports Hypothesis 4. This indirect effect was developed over both AT and PBC. The results in Table 6 show that AT and PBC mediate the relationship between ES and EI in the next paths: (1) ES -> AT -> EI; (2) ES -> PBC -> EI.

On the other hand, the obtained results showed that attitude towards behaviour and subjective norms do not mediate the relationship between country culture and EI, Hypothesis 5 is rejected.

## 5. Discussion

Sports entrepreneurship has attracted increasing interest (González-Serrano et al., 2020) since the sports industry presents good opportunities for helping young graduating students develop their own business (Eurostat, 2021). Sports and entrepreneurship have several common skills (e.g., risk-taking, creativity, proactivity), so that these students can develop these entrepreneurial skills more easily due to physical sports practices (González-Serrano et al., 2017). Therefore, there is a potential for recent graduates to use their entrepreneurial skills to start their businesses and reduce the high rates of youth unemployment. Hence, the interest and importance of analysing the predictive variables of these students’ entrepreneurial intentions using a multi-cultural approach.

Fostering the entrepreneurial intentions of sports science students is essential for improving their employability. The findings showed direct effects of the perception of being able to successfully start and manage a

**Table 6**

Specific indirect effects of entrepreneurial skills and country culture on entrepreneurial intention through attitude towards entrepreneurship, subjective norms and perceived behavioural.

Specific Indirect effects	LTU	SP	UKR	SRB	CR	ALL
Country culture -> Attitude -> Entrepreneurial intentions	0.08	0.04	0.06	0.21	0.11	0.09
Country culture -> Subjective norms -> Attitude -> Entrepreneurial intentions	0.01	-0.03	-0.01	0.01	-0.01	-0.01
Country culture -> Subjective norms -> Entrepreneurial intentions	-0.00	-0.01	-0.01	-0.01	0.00	0.00
Country culture -> Subjective norms -> Perceived behavioural control -> Entrepreneurial intentions	0.01	-0.01	0.00	0.00	-0.00	-0.00
Entrepreneurial skills -> Attitude -> Entrepreneurial intentions	0.11b	0.43a	0.19b	0.18b	0.18b	0.23a
Entrepreneurial skills -> Perceived behavioural control -> Entrepreneurial intentions	0.22a	0.12b	0.28a	0.18b	0.17b	0.19b
Entrepreneurial skills -> Subjective norms -> Attitude -> Entrepreneurial intentions	0.05	0.02	0.05	0.04	0.03	0.03
Entrepreneurial skills -> Subjective norms -> Entrepreneurial intentions	-0.01	0.00	0.04	-0.02	-0.02	-0.01
Entrepreneurial skills -> Subjective norms -> Perceived behavioural control -> Entrepreneurial intentions	0.02	0.00	-0.00	0.00	0.00	0.00
Subjective norms -> Attitude -> Entrepreneurial intentions	0.16	0.10	0.14	0.19	0.12	0.13
Subjective norms -> Perceived behavioural control -> Entrepreneurial intentions	0.08	0.02	-0.00	0.01	0.02	0.01

Note: LTU=Lithuania; SP= Spain; UKR= Ukraine; SRB= Serbia; CR= Croatia;  $\beta$ -standardized path of coefficients, a - p <0.01, b - p <0.05.

business (PBC) on the EI of SSS (sports sciences students). This finding is in line with numerous studies highlighting the positive and direct relationship between these two variables (da Costa et al., 2023; Dos Santos & Silveira, 2018; Galvão et al., 2018; Liñán & Chen, 2009; Munir et al., 2019; Naia et al., 2017). This variable exerted a more potent effect in Lithuania and Ukraine and a weaker effect in Serbia and Spain. This finding may be because Serbia and Spain are countries with the highest levels of masculinity. Masculinity (which indicates that society will be driven by achievement, competition and success) is related to entrepreneurial behaviour, and therefore, they consider their attitude towards entrepreneurship to be the most crucial variable in deciding to become an entrepreneur. Therefore, activities on how to develop business plans and strategic plans could be more effective tools for developing EI in the case of SSS of all the countries analysed (as they can help

improve their perception of their PBC). Nevertheless, these activities could be more effective in promoting the EI of Lithuanian and Serbian sports sciences students than that of students in other countries.

Likewise, direct and positive effects of having a favourable attitude towards entrepreneurship (AT) as a career path were also found in the EI of these SSS in all countries. These findings align with those found in previous studies (da Costa et al., 2023; Gorgievski et al., 2018; Malebana & Swanepoel, 2015; Naia et al., 2017; Nowiński et al., 2019) that showed a positive effect between the attitude towards entrepreneurship and students' EI. In Spain and Ukraine, this variable exerted a greater force, while in other countries, it was smaller. This finding may be because both countries present high uncertainty avoidance scores, which is one of the main characteristics of entrepreneurs coping with the unexpected. In addition, both countries (Spain and Ukraine) have high youth unemployment rates, which could make their sports science students consider creating their own business a favourable possibility of finding employment. Therefore, bringing successful sports entrepreneurs into the classroom or mentoring programs with sports entrepreneurs could be effective measures for promoting EI in the sports science students of all these countries (as they can help improve the AT of their sports sciences students). However, in the case of Spanish and Ukrainian sports sciences students, these activities and methodologies could be more effective in fostering EI.

Another aspect to highlight is that PBC exerted a more significant influence on EI in all countries, except for Spain, where AT was the variable that presented the greatest strength. This is in line with Liu et al. (2021), who highlighted that PBC is the core factor affecting the entrepreneurial drive of students in sports majors. However, Spain is characterized by high youth unemployment rates, high levels of youth work experience in these SSS (sports sciences students), and high scores on the GEI (Global Entrepreneurship Index). These findings suggest that enhancing a favourable attitude in Spanish SSS is vital to enhancing their EI. Thus, the levels of entrepreneurship in a society depend on both the population's skills (entrepreneurial skills) and the preferences they have (attitude towards entrepreneurship) when choosing employment (Kedmenec & Strašek, 2017).

Concerning entrepreneurial skills, these turned out to positively and indirectly influence EI. Entrepreneurial skills positively influenced AT and PBC, which is in line with previous studies (Farooq et al., 2018; Liñán, 2008; Munir et al., 2019; Rueda et al., 2022). These skills exerted a greater strength in Spain and Lithuania, while in Ukraine, Serbia, and Croatia, this was somewhat lower. Since Spain and Lithuania are countries that score higher in individualism, which includes values positively related to entrepreneurship (Liñán et al., 2016; Yang et al., 2015), this may improve their perceptions of entrepreneurial skills. Additionally, both countries possess a more favourable entrepreneurial climate than the other countries. Thus, the introduction in the curricula of new methodologies that encourage divergent thinking, creativity, teamwork, and innovation is vital in the case of the SSS of all the European countries analysed. These activities can be the use of the CANVAS model in sports, visual thinking, problem-solving, real case studies, and activities related to the professional use of social networks (LinkedIn). However, these methodologies could be more effective in promoting the EI of Spanish and Lithuanian sports science students than that of students in other countries.

Regarding the social component of this theory, SN (subjective norm) was not found to exert a direct or indirect influence on SSS entrepreneurial intentions. Although some previous research has highlighted the role of SN in explaining EI (Liñán & Jaén, 2018), the findings of this study are not aligned. However, these findings are in line with those of other multicountry studies (González-Serrano et al., 2018; Moriano et al., 2012) that have failed to confirm such a relationship. Although Ukraine, Serbia, and Croatia are countries with the lowest level of individualism, the subjective norm (SN) did not affect the EI of the SSS in these countries. Therefore, according to Liñán and Jaén (2018), much research is still needed to better understand the role of subjective norms

in the relationship between culture and intention. Moreover, these results could be explained by this type of student presenting a high internal locus of control because of physical activity practice (Ajzen, 2001). This means that sport science students are more aware that the consequences of their actions depend on their actions, and it is something they can control. Therefore, their decisions are based more on personal rather than external factors. This is in line with Krueger et al. (2000), who argued that social norms are the minor predictive variables of EI for an individual with a high internal locus of control.

Finally, a significant aspect to highlight is that EI antecedents related to external or environmental variables (subjective norms or country culture) were not found to influence sports science students' EI. Therefore, when deciding to become an entrepreneur, it seems that this type of student relies more on internal or personal factors than on assessments of their environment. This finding could be explained by the practice of physical sports developing the internal locus of control of these students. In this vein, researchers have highlighted that physical activity is consistently and positively related to the internal locus of control (Parsons & Betz, 2001). Therefore, educational policies at the university level should improve the perceptions of these internal aspects of SSS (sports science students). These findings are in line with those of Liñán (2008), although some previous research has also found the influence of internal variables or characteristics on EI (Liñán & Santos, 2007). This could be explained by these countries not promoting entrepreneurship.

Finally, it needs to be emphasized that this study has several limitations. First, the results of this study are not generalizable to the entire population of SSS. Therefore, this sample should be extended to more countries to analyse these differences in future research. Second, this is a cross-sectional study that analyses entrepreneurial intentions but not the link between these intentions and actual behaviour. Therefore, future studies should be approached from a longitudinal perspective to determine whether these intentions finally materialize in behaviour.

### 5.1. Theoretical implications

It has been demonstrated how entrepreneurial skills mediate the relationships between two of the TPB antecedents (attitude towards entrepreneurship and perceived behavioural control) with EI. However, the environmental factors analysed did not directly or indirectly influence EI. Therefore, more complex models should be developed to transform EI into action, as previous research suggests (Liñán & Jaén, 2018). However, there is still a need to delve deeper into the study of external factors that help understand the differences in entrepreneurship rates between countries and regions. Hofstede's values (Hofstede, 2001) provide a good framework for assessing countries' entrepreneurial climates and can be helpful for understanding such differences in the antecedents of EI of different countries. Finally, the development of EI models with sports science students from different European countries represents an advance in the field of study of sports entrepreneurship. It is vital to know their entrepreneurial characteristics and how to foster EI to improve these students' employability and reduce youth unemployment.

### 5.2. Practical implications

The results show that the educational policies to be developed in sport science faculties must differ depending on the culture of each country if entrepreneurial intentions are to be developed successfully. Although AT (attitude towards entrepreneurship), PBC (entrepreneurial perceived behavioural control), and entrepreneurial skills are critical in all countries, their importance is country specific. The development of a positive attitude towards entrepreneurship could be developed by bringing successful entrepreneurs into the classroom to tell their stories. For the development of the PBC, creating mentoring programs in which students are guided and accompanied by entrepreneurs from the sports sector or develop their business plans could be a good strategy.

In terms of entrepreneurial skills, new methodologies that encourage divergent thinking, creativity, teamwork, and innovation are vital. Visual thinking, problem solving, or real case studies can contribute to this. Additionally, strategic plans in which students must discover opportunities based on a thorough analysis of the environment and develop projects to exploit these and differentiate their company from others should be created. The use of social networks for academic purposes to establish relationships with professionals in the sports field can be another strategy for creating networks and discovering new opportunities.

## 6. Conclusions

Sports science students seem to possess high levels of entrepreneurial skills and, in general, a good attitude towards being an entrepreneur. In addition, they perceived their environment as supportive of developing their entrepreneurial activity. However, the perceptions of their capabilities to be an entrepreneur and their entrepreneurial skills are not as positive. Thus, students in the sports sector seem to possess a series of innate characteristics related to entrepreneurial behaviour due to the practice of sport. As the last link in the educational level and the bridge to the labour market, universities should try to enhance sports science students' EI to generate future sports entrepreneurs by transferring entrepreneurial skills developed due to physical practice to entrepreneurial skills to develop and manage their own business. This will improve the employability of future graduates in the sports sector and thus reduce the high youth unemployment rates that affect most European countries.

Specifically, the university educational policies to be implemented in each of the faculties of sports sciences must be different. Although in all of them it is necessary to search for new methodologies and tools that foster a favourable attitude towards the figure of the entrepreneur (a person who possesses entrepreneurial skills and is capable of recognizing opportunities in the environment for creating his or her own business and managing it successfully), the perception of possessing the necessary entrepreneurial skills and the belief that they can successfully start up a business, depending on students' country, can lead to greater or lesser value. Bringing successful entrepreneurs from the sports sector into the classroom, creating social media groups with sports entrepreneurs, and creating policies supporting entrepreneurs and their visibility on social media is vital.

However, governments should not forget that these measures must also be addressed at the macro level to develop entrepreneurial ecosystems that foster sports entrepreneurship at all levels from the top. A country's climate is a variable that can indirectly influence entrepreneurial variables, acting as a facilitator or inhibitor of entrepreneurial behaviour. Therefore, measures for promoting this phenomenon must be approached in a coordinated manner from different levels if more extraordinary results are to be achieved, and countries' specific characteristics must always be considered.

## Funding

The author of this manuscript, María Huertas Gonzalez-Serrano is grateful for the support of the VALI+d predoctoral contract "ACIF/2016/445" granted by the Regional Ministry of Education, Research, Culture and Sports of the Valencian Community ("Generalitat Valenciana").

This work was also supported by project conducted by Faculty of Sport and Physical education, University of Novi Sad, Serbia, entitled "Developing Future Sports Entrepreneurs in Europe: University Education to Promote Entrepreneurial Intentions in Sports Science Students (Reg. No: 142-451-2596/2021), financed by the Provincial Secretariat for Higher Education and Scientific research.

## CRedit authorship contribution statement

**María Huertas González-Serrano:** Conceptualization, Investigation, Project administration, Writing – original draft. **Irena Valantine:** Investigation, Project administration, Writing – review & editing. **Radenko Matic:** Data curation, Formal analysis, Software, Validation, Writing – original draft. **Ivana Milovanović:** Data curation, Formal analysis, Software, Validation, Writing – original draft. **Ruslana Sus-hko:** Investigation, Writing – review & editing. **Ferran Calabuig:** Conceptualization, Investigation, Methodology, Project administration, Writing – review & editing.

## Declaration of Competing Interest

The authors declare no conflict of interest.

## Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.iemeen.2023.100229](https://doi.org/10.1016/j.iemeen.2023.100229).

## References

- Ács, Z. J., László Szerb, & Lloyd, A. (2018). *The global entrepreneurship index 2018*. GEDI. Retrieved from [https://thegedi.org/wp-content/uploads/dlm\\_uploads/2017/11/GEI-2018-1.pdf](https://thegedi.org/wp-content/uploads/dlm_uploads/2017/11/GEI-2018-1.pdf).
- Adatepe, S., & Kul, M. (2018). Themes of reflective thinking as a predictor of physical education and sport pre-service teachers' entrepreneurial characteristics. *Journal of Education and Training Studies*, 6(10), 117–122. <https://doi.org/10.11114/jets.v6i10.3487>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Ajzen, I. (2001). Nature and operation of attitudes. *Annual Review of Psychology*, 52(1), 27–58. <https://doi.org/10.1146/annurev.psych.52.1.27>
- Ajzen, I. (2002). Perceived behavioural control, self-efficacy, locus of control, and the theory of planned behaviour. *Journal of Applied Social Psychology*, 32(4), 665–683. <https://doi.org/10.1111/j.1559-1816.2002.tb00236.x>
- Alves, A. C., Fischer, B., Rücker Schaeffer, P., & Queiroz, S (2019). Determinants of student entrepreneurship: An assessment on higher education institutions in Brazil. *Innovation & Management Review*, 16(2), 96–117. <https://doi.org/10.1108/INMR-02-2018-0002>
- Andersen, S. S., & Ronglan, L. T. (2015). Historical paths and policy change: Institutional entrepreneurship in Nordic elite sports systems. *International Journal of Sport Policy and Politics*, 7(2), 197–216. <https://doi.org/10.1080/19406940.2015.1031811>
- Arranz, N., Ubierna, F., Arroyabe, M. F., Perez, C., & Fdez. de Arroyabe, J. C. (2017). The effect of curricular and extracurricular activities on university students' entrepreneurial intention and competences. *Studies in Higher Education*, 42(11), 1979–2008. <https://doi.org/10.1080/03075079.2015.1130030>
- Bae, T. J., Qian, S., Miao, C., & Fiet, J. O. (2014). The relationship between entrepreneurship education and entrepreneurial intentions: A meta-analytic review. *Entrepreneurship Theory and Practice*, 38(2), 217–254. <https://doi.org/10.1111/etap.12095>
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74–94. <https://doi.org/10.1007/BF02723327>
- Ball, S. (2005). The importance of entrepreneurship to hospitality, leisure, sport and tourism. *Hospitality, Leisure, Sport and Tourism Network*, 1(1), 1–14.
- Barba-Sánchez, V., Mitre-Aranda, M., & del Brío-González, J. (2022). The entrepreneurial intention of university students: An environmental perspective. *European Research on Management and Business Economics*, 28(2), Article 100184. <https://doi.org/10.1016/j.iemeen.2021.100184>
- Bird, B (1988). Implementing entrepreneurial ideas: The case for intention. *Academy of Management Review*, 1(3), 442–453. <https://doi.org/10.5465/amr.1988.4306970>
- Bosma et al., 2020. Global entrepreneurship monitor. 2019/2020 Global Report. Babson.
- Boyd, N. G., & Vozikis, G. S. (1994). The influence of self-efficacy on the development of entrepreneurial intentions and actions. *Entrepreneurship Theory and Practice*, 18(4), 63–77. <https://doi.org/10.1177/104225879401800404>
- Byrne, B. M. (2000). *Structural equation modelling with AMOS: Basic concepts, applications, and programming*. Mahwah, NJ: Lawrence Erlbaum.
- Carsrud, A. L. (1992). *The psychology of entrepreneurship*. Stirling, UK: University of Stirling.
- Chen, C. C., Greene, P. G., & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing*, 13(4), 295–316. [https://doi.org/10.1016/s0883-9026\(97\)00029-3](https://doi.org/10.1016/s0883-9026(97)00029-3)
- Chia, C. C., & Liang, C. (2016). Influence of creativity and social capital on the entrepreneurial intention of tourism students. *Journal of Entrepreneurship, Management and Innovation*, 12(2), 151–168. <https://doi.org/10.7341/20161227>
- Costa, C., & Miragaia, D. A. M. (2022). A systematic review of women's entrepreneurship in the sports industry: has anything changed? *Gender in Management: An International Journal*, 37(8), 988–1008. <https://doi.org/10.1108/GM-04-2021-0101>
- da Costa, C. D., Miragaia, D. A., & Veiga, P. M. (2023). Entrepreneurial intention of sports students in the higher education context-Can gender make a difference? *Journal of Hospitality, Leisure, Sport & Tourism Education*, 32, Article 100433. <https://doi.org/10.1016/j.jhlste.2023.100433>
- Denoble, A. F., Jung, K., & Ehrlich, S. B. (1999). Entrepreneurial self-efficacy: The development of a measure and its relation to entrepreneurial action. In P. Reynolds, W. Bygrave, S. Manigart, C. Mason, G. D. Meyer, H. J. Sapienza, & K. G. Shaver (Eds.), *Frontiers of entrepreneurship research* (pp. 73–87). Wellesley, MA: Babson College.
- Dos Santos, R., & Silveira, A (2018). Intención emprendedora en contexto universitario brasileño. *Revista Gestão Universitária na América Latina-GUAL*, 11(2), 297–318. <https://doi.org/10.5007/1983-4535.2018v11n2p297>
- Engle, R. L., Dimitriadis, N., Gavidia, J. V., Schlaegel, C., Delanoe, S., Alvarado, I., ... Wolff, B. (2010). Entrepreneurial intent: A twelve-country evaluation of Ajzen's model of planned behavior. *International Journal of Entrepreneurial Behavior & Research*, 16(1), 35–57. <https://doi.org/10.1108/13552551011020063>
- European Commission. (2010). *Employment in Europe 2010*. Bruselas: European Commission.
- Eurostat (2021). Sport employment. Retrieved from: [https://ec.europa.eu/eurostat/statistics-explained/index.php/Employment\\_in\\_sport](https://ec.europa.eu/eurostat/statistics-explained/index.php/Employment_in_sport).
- Eurostat (2022). Youth unemployment. Retrieved from: Youth unemployment - Statistics Explained (europa.eu).
- Farooq, M. S., Salam, M., ur Rehman, S., Fayolle, A., Jaafar, N., & Ayupp, K. (2018). Impact of support from social network on entrepreneurial intention of fresh business graduates: A structural equation modelling approach. *Education+ Training*, 60(4), 1–19. <https://doi.org/10.1108/ET-06-2017-0092>
- Fayolle, A. (2010). *Handbook of research in entrepreneurship education*, 3. Northampton, MA: International Perspectives, Edward Elgar.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.1177/002224378101800104>
- Forsyth, J. J., Jones, J., Duval, L., & Bambridge, A. (2019). Opportunities and barriers that females face for study and employment in sport. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 24, 80–89. <https://doi.org/10.1016/j.jhlste.2019.01.005>
- Galvão, A., Marques, C. S., & Marques, C. P. (2018). Antecedents of entrepreneurial intentions among students in vocational training programmes. *Education+ Training*, 60(7/8), 719–734. <https://doi.org/10.1108/ET-03-2017-0034>
- GEM (Global Entrepreneurship Monitor). (2022). *Global entrepreneurship monitor 2021/2022 global report: Opportunity amid disruption*. London: GEM.
- González, J. A. M., & Kobylńska, U. (2019). Influence of personal variables on entrepreneurial intention: A comparative study between Poland and Spain. *Engineering Management in Production and Services*, 11(1), 68–79. <https://doi.org/10.2478/emj-2019-0005>
- González-Serrano, M. H., Calabuig, F., & Crespo, J. (2021). Sport management education through an entrepreneurial perspective: Analysing its impact on Spanish sports science students. *The International Journal of Management Education*, 19(1), Article 100271. <https://doi.org/10.1016/j.ijme.2018.11.007>
- Gonzalez-Serrano, M. H., Gonzalez-Garcia, R. J., Carvalho, M. J., & Calabuig, F. (2021). Predicting entrepreneurial intentions of sports sciences students: A cross-cultural approach. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 29, Article 100322. <https://doi.org/10.1016/j.jhlste.2021.100322>
- González-Serrano, M. H., Jones, P., & Llanos-Contrera, O. (2020). An overview of sport entrepreneurship field: A bibliometric analysis of the articles published in the web of science. *Sport in Society*, 23(2), 296–314. <https://doi.org/10.1080/17430437.2019.1607307>
- González-Serrano, M. H., Crespo, J., Pérez-Campos, C., & Calabuig, F. (2017). The importance of developing the entrepreneurial capacities in sport sciences university students. *International Journal of Sport Policy and Politics*, 9(4), 625–640. <https://doi.org/10.1080/19406940.2017.1316762>
- González-Serrano, M. H., Valantine, I., Crespo, J., Pérez-Campos, C., & Calabuig, F. (2018). Sports university education and entrepreneurial intentions: A comparison between Spain and Lithuania. *Education+ Training*, 60(5), 389–405. <https://doi.org/10.1108/ET-12-2017-0205>
- González-Serrano, M. H., Valantine, I., Hammerschmidt, J., & Calabuig, F. (2023). How to foster intrapreneurial intentions of sport science students? A cross-cultural symmetric and asymmetric approach. *Economic Research-Ekonomska Istraživanja*, 36 (1), Article 2180059. <https://doi.org/10.1080/1331677X.2023.2180059>
- Gorgievski, M. J., Stephan, U., Laguna, M., & Moriano, J. A. (2018). Predicting entrepreneurial career intentions: Values and the theory of planned behavior. *Journal of Career Assessment*, 26(3), 457–475. <https://doi.org/10.1177/1069072717714541>
- Hagger, M. S., Nikos, L., Chatzisarantis, V. B., John, C. K., Wang, V. H, Maret, P., & Istvan, K (2007). Cross-cultural generalizability of the theory of planned behavior among young people in a physical activity context. *Journal of Sport and Exercise Psychology*, 29(1), 1–19. <https://doi.org/10.1123/jsep.29.1.2>
- Hakkers, S. (2019). *How can sport clubs support a talent's dual career?: Guidebook of best practices in dual career*. Innovative Clubs for Dual Careers.
- Hammerschmidt, J., Eggers, F., Kraus, S., Jones, P., & Filser, M. (2020). Entrepreneurial orientation in sports entrepreneurship-a mixed methods analysis of professional soccer clubs in the German-speaking countries. *International Entrepreneurship and Management Journal*, 16(3), 839–857. <https://doi.org/10.1007/s11365-019-00594-5>

- Hammerschmidt, J., Kraus, S., & Jones, P. (2022). Sport entrepreneurship: Definition and conceptualization. *Journal of Small Business Strategy*, 32(2), 1–10. <https://doi.org/10.53703/001c.31718>
- Hayton, J. C., George, G., & Zahra, S. A. (2002). National culture and entrepreneurship: A review of behavioral research. *Entrepreneurship Theory and Practice*, 26(4), 33–52. <https://doi.org/10.1177/104225870202600403>
- Hindle, K., Hammerschmidt, J., Viala, C., Kraus, G. S., Jones, P., & Calabuig, F. (2021). Converting sporting capacity to entrepreneurial capacity: A process perspective. *European Journal of International Management*, 15(2-3), 197–213. <https://doi.org/10.1504/EJIM.2021.113246>
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations*. Thousand Oaks, CA: Sage. <https://doi.org/10.5465/amr.2002.7389951>
- En: Hofstede, G., Noorderhaven, N. G., Thurik, A. R., Uhlaner, L. M., Wennekers, A. R., & Wildeman, R. E. (2004). Culture's role in entrepreneurship: Self-employment out of dissatisfaction. In J. Ulijn, & T. Brown (Eds.), *Innovation, entrepreneurship and culture: The interaction between technology, progress and economic growth* (pp. 162–203). Cheltenham, UK: Edward Elgar. <https://doi.org/10.4337/9781845420550.00014>
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: A Multidisciplinary Journal*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Iakovleva, T., Kolvereid, L., & Stephan, U. (2011). Entrepreneurial intentions in developing and developed countries. *Education + Training*, 53(5), 353–370. <https://doi.org/10.1108/00400911111147686>
- Joensuu-Salo, S., Viljamaa, A., & Varamäki, E. (2020). Do intentions ever die? The temporal stability of entrepreneurial intention and link to behavior. *Education+ Training*, 62(3), 325–338. <https://doi.org/10.1108/ET-03-2019-0053>
- Jones, P., & Jones, A. (2014). Attitudes of sports development and sports management undergraduate students towards entrepreneurship: A university perspective towards best practice. *Education+ Training*, 56(8/9), 716–732. <https://doi.org/10.1108/ET-06-2014-0060>
- Jones, P., Ratten, V., & Hayduk, T. (2020). Sport, fitness, and lifestyle entrepreneurship. *International Entrepreneurship and Management Journal*, 16(3), 783–793. <https://doi.org/10.1007/s11365-020-00666-x>
- Judd, C. M., & Kenny, D.A. (2010). Data analysis. In Gilbert, D., Fiske, S. T., Lindzey, G. (Eds.), *The handbook of social psychology* (5th ed., Vol. 1, pp. 115-139). New York, NY: Wiley.
- Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, 39(1), 31–36. <https://doi.org/10.1007/BF02291575>
- Kautonen, T., Van Gelderen, M., & Fink, M. (2015). Robustness of the theory of planned behavior in predicting entrepreneurial intentions and actions. *Entrepreneurship Theory and Practice*, 39(3), 655–674. <https://doi.org/10.1111/etap.12056>
- Kedmenec, I., & Strašek, S. (2017). Are some cultures more favourable for social entrepreneurship than others? *Economic Research-Ekonomska Istraživanja*, 30(1), 1461–1476. <https://doi.org/10.1080/1331677X.2017.1355251>
- Krueger, N. F., Jr, Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15(5-6), 411–432. [https://doi.org/10.1016/S0883-9026\(98\)00033-0](https://doi.org/10.1016/S0883-9026(98)00033-0)
- Lara-Bocanegra, A., Bohórquez, M. R., Grimaldi-Puyana, M., Gálvez-Ruiz, P., & García-Fernández, J. (2022). Effects of an entrepreneurship sport workshop on perceived feasibility, perceived desirability and entrepreneurial intentions: A pilot study in sports science students. *Sport in Society*, 25(8), 1528–1544. <https://doi.org/10.1080/17430437.2020.1829596>
- Lara-Bocanegra, A., García-Fernández, J., Gálvez-Ruiz, P., Grimaldi-Puyana, M., & Gómez-Millán, M. R. B. (2022). Does background matter? Analysis of the influence of sex, socioeconomic status and the existence of an entrepreneurial family member as a precursor to entrepreneurship in university students of Sport Sciences. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 31, Article 100394. <https://doi.org/10.1016/j.jhlste.2022.100394>
- Law, K. M., & Breznik, K. (2017). Impacts of innovativeness and attitude on entrepreneurial intention: Among engineering and non-engineering students. *International Journal of Technology and Design Education*, 27(4), 683–700. <https://doi.org/10.1007/s10798-016-9373-0>
- Leitão, J. (2017). The innovative and entrepreneurial nature of sport: A critical assessment. *International Journal of Entrepreneurial Behavior & Research*, 23(6), 1071–1074. <https://doi.org/10.1108/IJEBR-10-2017-409>
- Liñán, F. (2008). Skill and value perceptions: How do they affect entrepreneurial intentions? *International Entrepreneurship and Management Journal*, 4(3), 257–272. <https://doi.org/10.1007/s11365-008-0093-0>
- Liñán, F., & Chen, Y. W. (2009). Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship theory and practice*, 33(3), 593–617. <https://doi.org/10.1111/j.1540-6520.2009.00318.x>
- Liñán, F., & Jaén, I. (2018). A proposed model for the culture's mode of influence on the entrepreneurial process. *A research agenda for entrepreneurial cognition and intention*. Edward Elgar Publishing.
- Liñán, F., & Santos, F. J. (2007). Does social capital affect entrepreneurial intentions? *International Advances in Economic Research*, 13(4), 443–453. <https://doi.org/10.1007/s11294-007-9109-8>
- Liñán, F., Moriano, J. A., & Jaén, I. (2016). Individualism and entrepreneurship: Does the pattern depend on the social context? *International Small Business Journal*, 34(6), 760–776. <https://doi.org/10.1177/0266242615584646>
- Liu, T., Lipowski, M., Xue, Y., Xiao, T., Liu, H., Xu, R., ... Zhao, Z. (2021). The impact of entrepreneurship education of entrepreneurs on the entrepreneurial psychology of sports majors from the perspective of pedagogy. *Frontiers in Psychology*, 12, Article 727831. <https://doi.org/10.3389/fpsyg.2021.727831>
- MacCallum, R. C., & Austin, J. T. (2000). Applications of structural equation modeling in psychological research. *Annual Review of Psychology*, 51(1), 201–226. <https://doi.org/10.1146/annurev.psych.51.1.201>
- Macrotrends (2020). Ukraine youth unemployment rate 1991-2020. Retrieved from: <http://www.macrotrends.net/countries/UKR/ukraine/youth-unemployment-rate>
- Ukraine Youth Unemployment Rate 1991-2020. Retrieved 2020-12-04.
- Maheshwari, G., Kha, K. L., & Arokiasamy, A. R. A. (2022). Factors affecting students' entrepreneurial intentions: A systematic review (2005-2022) for future directions in theory and practice. *Management Review Quarterly*, 1–68. <https://doi.org/10.1007/s11301-022-00289-2>
- Maina, S. (2013). The role of entrepreneurship education on job creation among youths in Nigeria. *International Letters of Social and Humanistic Sciences*, 15, 87–96. <https://doi.org/10.18052/www.scipress.com/ILSHS.15.87>
- Malach-Pines, A., & Kaspi-Baruch, O. (2008). The role of culture and gender in the choice of a career in management. *Career Development International*, 13(4), 306–319. <https://doi.org/10.1108/13620430810880808>
- Malebana, M. J., & Swanepoel, E. (2015). Graduate entrepreneurial intentions in the rural provinces of South Africa. *Southern African Business Review*, 19(1), 89–111. <https://doi.org/10.25159/1998-8125/5835>
- Malet, L., McCole, D., Tshube, T., Mphela, T., Maro, C., Adamba, C., ... Ocansey, R. (2022). Effects of a sport-based positive youth development program on youth life skills and entrepreneurial mindsets. *PloS One*, 17(2), Article e0261809. <https://doi.org/10.1371/journal.pone.0261809>
- Moriano, J. A., Gorgievski, M., Laguna, M., Stephan, U., & Zarafshani, K. (2012). A cross-cultural approach to understanding entrepreneurial intention. *Journal of Career Development*, 39(2). <https://doi.org/10.1177/0894845310384481>
- Munir, H., Jianfeng, C., & Ramzan, S. (2019). Personality traits and theory of planned behavior comparison of entrepreneurial intentions between an emerging economy and a developing country. *International Journal of Entrepreneurial Behavior & Research*, 25(3), 554–580. <https://doi.org/10.1108/IJEBR-05-2018-0336>
- Naia, A., Baptista, R., Biscaia, R., Januário, C., & Trigo, V. (2017). *Entrepreneurial intentions of sport sciences students and theory of planned behavior*, 23 pp. 14–21. Motriz: Revista de Educação Física. <https://doi.org/10.1590/s1980-6574201700010003>
- Nowiński, W., Haddoud, M. Y., Lančarić, D., Egerová, D., & Czeglédi, C. (2019). The impact of entrepreneurship education, entrepreneurial self-efficacy and gender on entrepreneurial intentions of university students in the Visegrad countries. *Studies in Higher Education*, 44(2), 361–379. <https://doi.org/10.1080/03075079.2017.1365359>
- Nunnally, J., & Bernstein, I. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.
- Parente, S., Perfilí, M., Morales-Alonso, G., & Grimaldi, M. (2019). Culture and environment as antecedents of technological entrepreneurship. *Engineering Digital Transformation* (pp. 67–74). Cham: Springer.
- Parsons, E. M., & Betz, N. E. (2001). The relationship of participation in sports and physical activity to body objectification, instrumentality, and locus of control among young women. *Psychology of Women Quarterly*, 25(3), 209–222. <https://doi.org/10.1111/1471-6402.00022>
- Pearl, J. (2014). Interpretation and identification of causal mediation. *Psychological Methods*, 19(4), 459–481. <https://doi.org/10.1037/a0036434>
- Pellegrini, M. M., Rialti, R., Marzi, G., & Caputo, A. (2020). Sport entrepreneurship: A synthesis of existing literature and future perspectives. *International Entrepreneurship and Management Journal*, 16(3), 795–826. <https://doi.org/10.1007/s11365-020-00650-5>
- Pervun, K., Libaers, D., & Sutton, N. (2022). From athletes to entrepreneurs: Participation in youth sports as a precursor to future business endeavors. *Journal of Small Business Management*, 1–42. <https://doi.org/10.1080/00472778.2022.2073359>
- Porfirio, J. A., Felício, J. A., Carrilho, T., & Jardim, J. (2023). Promoting entrepreneurial intentions from adolescence: The influence of entrepreneurial culture and education. *Journal of Business Research*, 156, Article 113521. <https://doi.org/10.1016/j.jbusres.2022.113521>
- Ratten, V. (2010). Developing a theory of sport-based entrepreneurship. *Journal of Management & Organization*, 16(4), 557–565. <https://doi.org/10.1017/S1833367200001930>
- Ratten, V. (2011). Sport-based entrepreneurship: Towards a new theory of entrepreneurship and sport management. *International Entrepreneurship and Management Journal*, 7(1), 57–69. <https://doi.org/10.1007/s11365-010-0138-z>
- Ratten, V. (2012). Sport entrepreneurship: Challenges and directions for future research. *International Journal of Entrepreneurial Venturing*, 4(1), 65–76. <https://doi.org/10.1504/ijev.2012.044819>
- Ratten, V. (2018a). *Sport entrepreneurship: Developing and sustaining an entrepreneurial sport culture*. United Kingdom: Springer. <https://doi.org/10.1007/978-3-319-73010-3>
- Ratten, V. (2018b). Sport entrepreneurship education and policy. *Sport entrepreneurship* (pp. 125–138). Cham: Springer. [https://doi.org/10.1007/978-3-319-73010-3\\_9](https://doi.org/10.1007/978-3-319-73010-3_9)
- Ratten, V., & Jones, P. (2018). Future research directions for sport education: Toward an entrepreneurial learning approach. *Education+ Training*, 60(5), 490–499. <https://doi.org/10.1108/ET-02-2018-0028>
- Ratten, V., & Jones, P. (2021). Covid-19 and entrepreneurship education: Implications for advancing research and practice. *The International Journal of Management Education*, 19(1), Article 100432. <https://doi.org/10.1016/j.ijme.2020.100432>
- Rexhepi, G., Ramadani, V., & Ratten, V. (2018). TQM techniques as an innovative approach in sport organisations management: Toward a conceptual framework. *International Journal of Business and Globalisation*, 20(1), 18–30. <https://doi.org/10.1504/IJBG.2018.088661>

- Röhl, K. H. (2019). Entrepreneurship: A comparative study of the interplay of culture and personality from a regional perspective. *Journal of Small Business & Entrepreneurship*, 31(2), 119–139. <https://doi.org/10.1080/08276331.2018.1462621>
- Rueda Barrios, G. E., Rodríguez, J. F. R., Plaza, A. V., Vélez Zapata, C. P., & Zuluaga, M. E. G. (2022). Entrepreneurial intentions of university students in Colombia: Exploration based on the theory of planned behavior. *Journal of Education for Business*, 97(3), 176–185. <https://doi.org/10.1080/08832323.2021.1918615>
- Saeed, S., Yousafzai, S. Y., Yani-De-Soriano, M., & Muffatto, M. (2015). The role of perceived university support in the formation of students' entrepreneurial intention. *Journal of Small Business Management*, 53(4), 1127–1145. <https://doi.org/10.1111/jsbm.12090>
- Steiger, J. H. (2007). Understanding the limitations of global fit assessment in structural equation modeling. *Personality and Individual Differences*, 42(5), 893–898. <https://doi.org/10.1016/j.paid.2006.09.017>
- Tang, L., & Koveos, P. E. (2008). A framework to update Hofstede's cultural value indices: Economic dynamics and institutional stability. *Journal of International Business Studies*, 39(6), 1045–1063. <https://doi.org/10.1057/palgrave.jibs.8400399>
- Teixeira, A. A., & Forte, R. P. (2017). Prior education and entrepreneurial intentions: The differential impact of a wide range of fields of study. *Review of Managerial Science*, 11(2), 353–394. <https://doi.org/10.1007/s11846-015-0188-2>
- Teixeira, S. J., Casteleiro, C. M. L., Rodrigues, R. G., & Guerra, M. D. (2018). Entrepreneurial intentions and entrepreneurship in European countries. *International Journal of Innovation Science*, 10(1), 22–42. <https://doi.org/10.1108/IJIS-07-2017-0062>
- The World Bank (2021). World Bank Country and Lending Groups Retrieved from: <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>. Date: 14th March 2021.
- Tkachev, A., & Kolvereid, L. (1999). Self-employment intentions among Russian students. *Entrepreneurship & Regional Development*, 11(3), 269–280. <https://doi.org/10.1080/089856299283209>
- Vesalainen, J., & Pihkala, T. (1999). Entrepreneurial identity, intentions and the effect of the push-factor. *Academy of Entrepreneurship Journal*, 5(2), 1–24.
- Yang, K. P., Hsiung, H. H., & Chiu, Y. J. (2015). The comfort zone of the value circumplex for entrepreneurship: A structural analysis. *Career Development International*, 20(6), 663–683. <https://doi.org/10.1108/CDI-07-2014-0087>