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Towards the development of future sustainable sports entrepreneurs: An asymmetric approach of the sports sciences sustainable entrepreneurial intentions

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ABSTRACT

Contributing to the achievement of the Sustainable Development Goals of the 2030 Agenda is vital for ensuring the future of our society. The sports sector presents opportunities through entrepreneurship to contribute to them. However, little is known about how Physical Activity and Sports Sciences (PASS) students through university education could develop a sustainable mindset to be an entrepreneur. This research analyzes the conditions that generate high and low levels of sustainable entrepreneurial intentions in PASS students. The sample comprises 374 PASS students, with a mean age of 20.80 years ($SD = 3.19$). A structured questionnaire was administered. The results indicate that it is essential that PASS students perceive themselves as capable of creating and managing a sustainable business efficiently (condition present in all solutions). In addition, they should possess high levels of social and civic values (most explanatory solution: 47% of cases). Besides, is important that they have a positive attitude towards sustainable entrepreneurship and they feel supported by their immediate environment (second most explanatory solution: 36% of cases). Finally, some practical implications for encouraging sustainable entrepreneurial intentions of PASS students are presented.

1. Introduction

Sustainable entrepreneurship, and specially sports entrepreneurship, can be a way to contribute to the achievement of the United Nations (UN) 2030 Agenda (Rosa, 2017), which is an international plan that pursues overall sustainable development. It was created on 2015, when all member states of the UN developed an action plan to help people and the planet, covering the 17 Sustainable Development Goals (SDGs). Entrepreneurship and sustainability are two closely linked concepts (Santini, 2021). Several authors agree that the path to sustainability is based on the discovery of new opportunities, new products, and new services through innovation obtaining economic, social, and environmental benefits from this whole process. (Del Vecchio et al., 2021; Fatoki, 2019; Muñoz et al.,

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2020; Ruiz-Ruano & Puga, 2016). Education is one of the main areas of the SDGs, thus through university education an entrepreneurial sustainable mindset can be fostered. Furthermore, Strachan (2018) reiterates the importance and value of an education rich in sustainable values to achieve a sustainable future.

Often, the concept of sustainable entrepreneurship is understood in the literature as environmental entrepreneurship and eco-entrepreneurship (Belz & Binder, 2017). However, according to Tilley and Young (2009), sustainable entrepreneurship is geared towards economic prosperity, social equality, and environmental protection. Based on these three concepts, sustainable entrepreneurship is defined as a medium/long-term economic process whose objectives have been taxonomically ordered towards achieving profits through an enterprise that exploits market opportunities from a social and environmental perspective (Tarnanidis & Papaathanasiou, 2015). Regarding the sustainable entrepreneur, she or he offers and introduces products and services in conventional markets, satisfying the demands of consumers who choose a sustainable lifestyle (Feldman, 2017). In addition to meeting the demands of those already opting for sustainability, the sustainable entrepreneur has an essential role in transmitting attitudes towards sustainability through their work and impact (Gasbarro et al., 2017).

Specifically, sport is a sector that mobilizes the masses and is of great importance worldwide. Sport can be a way to offer the world environmentally friendly management (Reier-Forraddellas et al., 2021) and instil values towards society's sustainable development. A huge part of sport needs the natural environment for its performance. Through its practice, values in line with sustainability are instilled that can be extrapolated to everyday life (King & Church, 2017). Furthermore, it should be noted that sports entrepreneurship, is an option with many possibilities given its global impact (Reier-Forraddellas et al., 2021). Data from Eurostat (2021) show that it is a growing sector and is characterized by the employment of young people with tertiary education. Currently, Iceland (1.58%), Switzerland (1.31%), Portugal (1.3%), and Spain (1.24%) are the European countries with the highest employment rate (concerning the total) in this sector and with tertiary education in this field (Eurostat, 2021).

Sport entrepreneurship is a field of particular scientific interest due to its impact on many aspects worldwide (Ferreira & Ratten, 2016), and it can contribute with achievement of the UN 2030 Agenda SDGs. Sport has social and inclusive potential, making people at risk of social exclusion feel capable, involved, and wellness (Pérez-Campos et al., 2018). Sports entrepreneurship is characterized by its ability to link different socio-economic fields and converge them into a product or service. In the same way, these processes have a direct social influence, characterizing, in many cases, a person's routine (Cardella et al., 2021). However, although the number of articles published in recent years on sports sustainable entrepreneurship has increased, there is still much to be known, and more research is needed to consolidate this field of study (González-Serrano et al., 2020). No previous studies have been found that analyze the sustainable entrepreneurial intentions with PASS students. However, future graduates in the sports sector must be competent in these processes (sustainable entrepreneurship) as they are the main candidates to transform the economy and society through their initiatives and future projects (Reier-Forraddellas et al., 2021).

Studies on entrepreneurship with university students have mainly focused on business disciplines (Jones, Ratten, & Hayduk, 2020), leaving aside students from other disciplines. This fact is worrying because there are other university degrees where students have the right conditions to become entrepreneurs, which is the case of PASS students. Studying entrepreneurship with this type of university student is essential because sport and entrepreneurship have several common attributes, so PASS students deserve special attention (Holienska et al., 2018). In the same vein, Teixeira et al. (2018) point out that sports students present a great hidden potential for entrepreneurship. This is because the skills developed by these students during physical exercise can be easily transferable to the business world through university education (González-Serrano et al., 2017). Therefore, the characteristics of the PASS students, and sports sector and its opportunities make it an enabling environment to pursue a sustainable future (Aghaee et al., 2021; Holienska et al., 2018).

Yi (2021) states that, through education, there is an evolution from sustainable entrepreneurship intentions to sustainable entrepreneurship attitudes. The same author states that intentions for sustainability must be translated into attitudes or behaviors that impact society. Sustainable entrepreneurship is a practical result of how intentions to create a business are materialized while offering a social service that respects the environment (Ruiz-Ruano & Puga, 2016). Many studies analyze the entrepreneurial intentions of university students and their subsequent effect on economic, environmental and social development (Agu, 2021; Butkouskaya et al., 2020; Fatoki, 2019; Sher et al., 2020; Yasir et al., 2021). Specifically, Agu (2021) found, among other things, that attitude and subjective norm influence sustainable entrepreneurial intentions while perceived behavioural control was negative and irrelevant. Butkouskaya et al. (2020) concluded that women are more aware of the limitations that a university student has when it comes to entrepreneurship. In this case, women identified as the main obstacle the lack of business training as well as how to do it in a sustainable way. Fatoki (2019) found that sustainable orientations/attitudes are predictors of university students' sustainable entrepreneurial intentions. Along the same lines, Sher et al. (2020) state that the attitude towards sustainable entrepreneurship, as well as the perception of entrepreneurship as a feasible process (perceived entrepreneurial desirability and perceived entrepreneurial feasibility), drive the students sustainable entrepreneurial intentions. Furthermore, Yasir et al. (2021) provides that sustainable entrepreneurship, attitudes, social norm and perceived behavioural control drive sustainable entrepreneurial intentions among students. However, few studies analyze the sustainable entrepreneurship intentions that using the Theory of Planned Behaviour in this providing that such a theory can predict sustainable orientations that will drive sustainable entrepreneurship intentions (King & Church, 2017; Vuorio et al., 2017).

Thus, there is a gap in the literature when it comes to PASS students, since, although this field is conducive to this type of action, studies on sustainable entrepreneurship within the sector are scarce. From the present perspective, this paper delves into how these intentions are embodied in the students who in the future will be part of the new entrepreneurial processes. This research aims to determine the combination of conditions (variables) that generate high and low levels of sustainable entrepreneurial intentions in PASS students. The originality of this paper lies in, the relationship between the different variables with the sustainable

entrepreneurial intentions, and the sample on which the conclusions will be drawn, the sports science students (Ferreira & Ratten, 2016). As mentioned above, these sorts of students have remarkable entrepreneurial potential in a field as broad as a sport (Vuorio et al., 2017), which presents opportunities to contribute with the achievement of the SDGs. The personal profile of these people, due to the influence of the education received and sporting practice, make it necessary to study social skills and their transfer to other facets, in this case, entrepreneurship (Ratten & Jones, 2018). This paper aims to contribute to the literature in three ways. Firstly, through the analysis of sustainable entrepreneurial intentions with sport science students, these are scarce (González-Serrano et al., 2020). Secondly, studies with university students from the perspective of sustainable entrepreneurship are still scarce (Fatoki, 2019; Vuorio et al., 2017; Yi, 2021). Third, by analyzing both the factors that generate high and low intentions for sustainable entrepreneurship with an asymmetric methodology (Qualitative Comparative Analysis).

2. Theoretical framework of the antecedents of sustainable entrepreneurship

2.1. Sustainable entrepreneurial intentions in university students: the Theory of Planned Behaviour (TPB)

The Theory of Planned Behaviour (TPB) (Ajzen, 2020) has been one of the most widely used theories to explain the entrepreneurial intentions of university students (Entrialgo & Iglesias, 2018; Lechuga-Sancho et al., 2020; Zhang et al., 2018). Moreover, this theory is currently being used to predict and explain sustainable entrepreneurial intentions (Agu, 2021). This theory explains and predicts how subjects' beliefs and social context influence the intention to carry out a given behavior. It is based on three primary constructs: attitudes towards behavior, subjective norm, and perceived behavioral control. The first variable, attitudes towards behavior, refers to an individual's evaluation of sustainable entrepreneurship.

In addition, the subjective norm is related to the immediate social feedback that a person receives when executing or not executing a particular action. Finally, perceived behavioral control is understood as the person's control beliefs regarding the behavior in question (Iakovleva et al., 2011), sustainable entrepreneurship. Specifically, this construct refers to the perceived ease or difficulty of performing the behavior (Tkachev & Kolvereid, 1999), as is creating a sustainable enterprise. Ajzen (1991) states that a high level in these three variables will impact a high intention to perform a particular action, in this specific case, high intentions to undertake sustainably. Therefore, sustainable entrepreneurship is a behavioral and planned process whose initial stage is based on the intention to be a sustainable entrepreneur (Yi, 2021).

The literature suggests that social problems and social value creation can be solved through positive attitudes towards sustainable entrepreneurship (Austin et al., 2006; Short et al., 2009). This is because the existence of sustainable attitudes favors the emergence of entrepreneurship permeated by these prior behaviors (Nuringsih et al., 2019). Also, according to Ruiz-Ruano and Puga (2016), ecocentrism (valuing nature as a good in itself, respecting and treating it as such), i.e., a favorable attitude towards nature, is closely related to the intention to create a sustainable and environmentally friendly company. Environmental sensitivity and values act as one of the forces that, together with others, drive sustainable entrepreneurial action (Sher et al., 2020). Along these lines, Muñoz et al. (2018) point out that sustainability orientations foster sustainable entrepreneurial intentions in students. Therefore, the following proposition is presented:

-Proposition 1: Attitude towards sustainable entrepreneurship generates high sustainable entrepreneurship intentions.

Perceived behavioral control is a concept similar to self-efficacy, vital for entrepreneurs to be successful (Arrighetti et al., 2016). Specifically, perceived behavioral control refers to the ability to control the process of creating and managing a company or business, with sustainable values that consider economic, social and environmental impacts (Fayolle & Gailly, 2015; Sher et al., 2020). Therefore, like its self-efficacy analog, this variable is crucial in forming sustainable entrepreneurship intentions, as some previous studies have shown (Ketut, 2019; Sher et al., 2020; Smith & Woodworth, 2012).

- Proposition 2: Subjective norm generates high sustainable entrepreneurial intentions.

- Proposition 3: Perceived behavioral control generates high sustainable entrepreneurship intentions.

Finally, the subjective norm, which is the external variable of the TPB, has been one of the most controversial in terms of its relationship with entrepreneurial intentions (Henley et al., 2017). Some researchers have not shown a direct relationship between entrepreneurial intentions and this variable (Belchior, & y Liñán F, 2017; González-Serrano, Calabuig, & Crespo, 2018). However, other studies argue that subjective norm directly and positively influences entrepreneurial intentions (Hidayana, 2021; Liñán & Chen, 2009; Zhang et al., 2013). Thus, this research proposes that subjective norm is also an essential factor that, together with others, promotes and predicts intentions for sustainable entrepreneurship in young students (Sargani et al., 2020). Therefore, the following proposition is presented:

-Proposition 3: Subjective norm generates high intentions for sustainable entrepreneurship.

2.2. Soft skills and sustainable entrepreneurship

In addition to the TPB variables mentioned above, it is worth noting that entrepreneurial leadership skills may also be essential in predicting sustainable entrepreneurship intentions. These skills are related to social, attitudinal, and temperamental skills and are referred to as Soft Skills (SS). SS can be determinant in taking risks, not being afraid of originality, or having a vision for the future (Sousa, 2018). Soft Skills can be defined as the set of interpersonal and social skills that enhance personal relationships, enabling an individual to stand out in a group (Robles, 2012). SS are grouped into five categories: (1) Cultural Adaptability, (2) Communication,

(3) Civic and Public Engagement, and (4) Leadership and Innovation (Byrne et al., 2020).

This previous categorization highlights the relationship of SS with sustainability as the social, cultural, and innovative aspects of this construct are necessary to achieve a sustainable future (Khodadadi et al., 2020). Furthermore, it should be noted that the physical education and sport practice, can stimulate the proliferation of SS (Andres, 2021).

Expressly, the social and civic engagement variable is understood as an individual's respect for human rights, the feeling, and awareness of belonging to a community, respect for rules, civic participation, and the development of critical thinking (Pesch et al., 2019). Regarding sustainable entrepreneurship, different authors (Andrei & Zait, 2018; Pesch et al., 2019) stated that an individual with an outstanding social and civic commitment has more awareness to sustainability as they consider the impact that the different actions have on the society. In the specific case of entrepreneurship, they will be entrepreneurs that follow the relevant premises that the industrial actions performed do not have negative impacts on the society. Furthermore, given their concern for society, a person with high levels of social and civic engagement is expected to consider the potential environmental, social, and economic risk of a business, a concept that can influence an entrepreneur's future ideas, thus orienting their business towards sustainability (Middermann et al., 2020). Therefore, the following proposition is presented:

- Proposition 4: Social and civic engagement of students generates high intentions for sustainable entrepreneurship.

On the other hand, innovation is understood as the introduction of something new, a change, or the transformation of something already existing, being of vital importance in the field of sustainable entrepreneurship (Sołtysik et al., 2019). Those companies or individuals committed to sustainable entrepreneurship also do so by being at the forefront and permanently pursuing innovation within their sectors (Ejemeyovwi et al., 2019). Indeed, there is a cyclical process in which innovation influences entrepreneurship, and entrepreneurship affects innovation (Agri et al., 2018). Several studies have shown a preference for an entrepreneurial career in individuals with high levels of innovation (Hessels et al., 2008; Langkamp-Bolton & Lane, 2012), which in turn is key to solving social problems and creating social value (Austin & Seitanidi, 2012; Short et al., 2009). Hence its relationship with sustainable entrepreneurship intentions. Indeed, identifying new ideas, opportunities and the ability to apply them creatively is closely linked to sustainable inclinations (Hall & Wagner, 2012). Numerous studies agree that generating creative ideas and actions is necessary to foster entrepreneurship for sustainable purposes (Bux & Van Vuuren, 2019; Hall & Wagner, 2012; Weidinger, 2014). Sher et al. (2020) argue that the more a future entrepreneur is committed to innovation, the greater the intention to do so in a sustainable way. Based on the above, the following proposition is put forward:

- Proposition 5: Students' innovativeness generates high intentions for sustainable entrepreneurship.

3. Research methods

This section describes the sample, instrument, procedure, and statistical analyses carried out for the data analysis.

3.1. Sample

The sample is composed of 374 Physical Activity and Sport Sciences students from two Spanish universities studying during the academic year 2020/2021. 79.1% of the students were male, while 20.9% were female, with a mean age of 20.8 years (SD = 3.19).

3.2. Instrument

The questionnaire was composed of several scales that had been previously validated. Each of these scales is explained below:

- **Intention to start a sustainable firm (ISSF) scale:** this scale was taken from Thelken and de Jong (2020). It is composed of three items that measure the intention to become an entrepreneur, considering sustainable development, natural resource management, and care for the environment, among other aspects. Cronbach's alpha for this scale was 0.88.
- **Attitude towards sustainable entrepreneurship (ATSE) scale:** this scale was extracted from Sher et al. (2020), who adapted the scale of Liñán and Chen (2009). It is composed of seven items that measure attitude towards sustainability when creating a business, mainly considering reducing environmental and social problems. The Cronbach's alpha of this scale was 0.88.
- **Subjective Norm (SN) scale:** this scale was extracted from Liñán and Chen (2009). It is composed of three items that measure the degree to which the subjects' immediate environment (family, friends, and peers) would approve of the subjects' decision to start a sustainable business. Cronbach's alpha for this scale was 0.82.
- **Perceived Behavioral Control (PBC) scale:** this scale was taken from Liñán and Chen (2009). It is composed of three items that measure the subjects' perception of their belief and control when designing and developing new products and services, in this case, sustainable ones, knowing the practical principles for developing innovative projects, and being able to develop them. Cronbach's alpha for this scale was 0.80.
- **Innovation (INN) scale:** scale taken from Byrne et al. (2020). It is composed of four items that measure the degree to which an employee is willing to offer new ideas and solutions in their work context over some time. The Cronbach's alpha of this scale was 0.70.
- **Social and Civic Engagement (SCC) scale:** scale extracted from Byrne et al. (2020). Composed of five items, this scale analyses the degree to which a person's work action aims to solve social problems, respect the environment, and relate their activities to social and public welfare. Cronbach's alpha for this scale was 0.61.

An ascending five-point Likert scale was used to measure these items, where one meant strongly disagree and five meant strongly agree. In addition, certain socio-demographic variables such as gender, age, and work experience were asked.

3.3. Common method bias

To ensure that there is not common method bias, the language of the survey items was kept as simple as possible. Double-barreled questions were avoided. Also, variables were explained before their measurement items to generate psychological separation in the respondents' minds (Podsakoff & Organ, 1986). Besides, one post hoc test was conducted to assess the common method bias, the Harman's one-factor (Podsakoff & Organ, 1986).

Harman's single factor test was performed to statistically discover if the variance explained by the 25 items under one single factor is below 50% or not. In the present research, the explained variance was 24.85%, This value below the threshold limit, ensuring that this research is not affected by the common method bias (Podsakoff & Organ, 1986).

3.4. Procedure

The questionnaire was administered in-person to undergraduate students of Physical Activity and Sport Sciences after approval by the ethics committee of the Catholic University of Valencia. Non-probability convenience sampling was used with the intention of reaching as many PASS students as possible. Professors were contacted beforehand, and 15 min before the end of the classes, the students answered the questionnaires. The anonymity of the data was guaranteed at all times and the voluntary nature of the questionnaire. Furthermore, it was emphasized that the data would be used solely and exclusively for academic purposes.

3.5. Data analysis

The data collected through the questionnaires were coded and subjected to different statistical analyses using SPSS (Statistical Package for the Social Sciences, version 23) and FSQCA 2.0 software. Qualitative Comparative Analysis (QCA) methodology was used in this research. It uses boolean logic instead of the traditional correlation methods to determine the causal conditions that have relationship with a specific outcome (Ragin, 2008). This asymmetric technique is analytic and combines both qualitative and quantitative methodologies (Ragin, 2000). Symmetric tests are based on variance theories, considering that a specific predictor variable needs to be both necessary and sufficient condition to reach a specific outcome (Pappas et al., 2019). Thus, focusing only on symmetric methods could be misrepresentative, because the effects do not be appropriate to all the cases of the data set (Woodside, 2013). Hence, the results provided by fsQCA analysis are more exhaustive and make available a more horizontal complexity than does structural equation modelling or regression analysis (Vis, 2012). To fill this gap in the literature, and for the reasons presented above, this research uses the QCA method, particularly fsQCA (fuzz-set Qualitative Comparative Analysis), based on the complexity and configuration theory, to analyze the sustainable entrepreneurial intentions of PASS. Entrepreneurship is a complex phenomenon, thus to study it, fsQCA methodology is appropriated (Douglas et al., 2020).

Firstly, descriptive analyses of the variables (mean, standard deviation, minimum and maximum values of the scale, and 10th, 50th, and 90th percentiles) were carried out with SPSS statistical software. Secondly, the fsQCA software was used to carry out the need and sufficiency analyses. This type of methodology allows knowing all logically possible combinations of conditions to reach a given result (Eng & Woodside, 2012), which in this case were the high and low levels of sustainable entrepreneurship intentions. Unlike other methodologies, this methodology contemplates equifinality, i.e., there are different ways to reach a given outcome (Prado-Gascó & Calabuig, 2016).

The first step in conducting the fuzzy set qualitative comparative analysis was to remove all missing data and transform the raw data responses into fuzzy set responses. Items scores were multiplied to calculate all constructs (conditions) to obtain more significant variability. Then, the constructs were recalibrated with values between 0 and 1. This process is critical as it can affect the final result, showing more or fewer observations or participants reaching a particular outcome or another. It is necessary to consider three thresholds to recalibrate constructs that have more than two values: the first (0) considers that observation with this value is totally out of the set (low levels); the second (0.50) considers a midpoint (intermediate levels), and finally, the last value (1) considers that the observation is totally within the set (high levels). In the case of continuous variables, it is necessary to introduce these three values to perform the accurate recalibration of the data. In this case, the literature suggests using the 10th, 50th, and 90th percentiles to calculate these thresholds (Woodside, 2013). Therefore, the constructs were recalibrated considering these three thresholds: 10th percentile (low levels), 50th percentile (intermediate levels), and 90th percentile (high levels).

Next, necessity and sufficiency tests were conducted to assess the effect of different conditions on high and low levels of sustainable entrepreneurship intentions. A condition is considered necessary when it must be present for a specific outcome to exist. If the consistency is above .90, the condition is considered necessary (Ragin, 2008). As far as sufficient conditions are concerned, they indicate that a combination of conditions can lead to a specific outcome. However, the same outcome can also be achieved or obtained by other combinations of conditions (equifinality). The FSQCA analysis to calculate sufficient conditions consists of two steps (Eng & Woodside, 2012). First, a truth table algorithm transforms fuzzy set membership scores into a truth table. Second, this analysis presents three possible solutions: complex, parsimonious and intermediate.

As Fiss (2011, p. 403) points out, "... the central conditions are those that are part of both the parsimonious and intermediate solutions, and the peripheral conditions are those that are eliminated in the parsimonious solution and therefore only appear in the intermediate solution". Therefore, according to Fiss (2011), the combination of the parsimonious and intermediate solutions allows

conclusions to be drawn about the causal essentiality of specific combinations of causal conditions. Therefore, this study has considered the intermediate and parsimonious solutions, and the central conditions (larger circles) and the peripheral conditions (smaller circles) have been presented.

4. Results

This section presents the results of this study. First, descriptive statistics and calibration values for the variables under study are presented. Secondly, the need analysis is presented for both high and low levels of sustainable entrepreneurial intentions. Finally, the sufficiency analysis is also presented for both high and low levels of sustainable entrepreneurial intentions.

Table 1 shows the descriptive statistics of the variables and the calibration values used to convert the variables into fuzzy set conditions. Specifically, the descriptive statistics (mean, standard deviation) and calibration values (10th, 50th, and 90th percentiles) for the variables under study are presented.

4.1. Necessity analysis

The first step was to check whether any causal condition was necessary for the presence or absence (indicated by "~") of the outcomes (high or low levels of sustainable entrepreneurship intentions). For this, the consistency of the solution had to be above .90 (Ragin, 2008). However, as can be seen in Table 2, no necessary conditions were found for either high or low levels of sustainable entrepreneurship intentions.

4.2. Sufficiency analysis

The second step was to check for sufficient conditions. When analyzing sufficient conditions in the truth table, a threshold was established based on a break in the distribution of the consistency scores (Schneider et al., 2010). Ragin (2008) recommends a minimum consistency threshold of .75. The notation used by Ragin and Fiss (2008) and Fiss (2011) was used to present the results. Black circles indicate the presence of a condition, and white circles indicate the absence of a condition.

The consistency threshold for high levels of target performance was 0.83. According to Eng and Woodside (2012), a fsQCA model is informative when consistency is above 0.74. Three solutions were obtained to explain 56% of the cases of high levels of sustainable entrepreneurial intentions (consistency: 0.76; raw coverage: 0.56). It can be observed that the most essential or explanatory combination for high levels of sustainable entrepreneurship intentions was the combination of high levels of perceived behavioral control and high levels of social and civic engagement (consistency: 0.78; raw coverage: 0.47). Thus, proposition 3 and proposition 4 are in line with these results. The second most crucial configuration was the combination of high levels of attitude towards sustainable entrepreneurship, perceived behavioral control and subjective norm (consistency: 0.79; raw coverage: 0.36). Hence, proposition 1, proposition 2, and proposition 3 are align with these results. The third most explanatory configuration was the combination of high levels of perceived behavioral control, high levels of innovativeness, and low levels of the subjective norm (consistency: 0.81; raw coverage: 0.29). Accordingly, proposition 3 and proposition 5 are in line with these results, and contrary to those presented on proposition 4. Thus, in general, proposition 3 is supported in the three solutions presented, while proposition 1, proposition 4 and proposition 5 are partially supported in only one of the three solutions (second, first and third solution, respectively). However, proposition 2 is supported in the second solution and rejected in the third solution. These solutions explained 47%, 36%, and 29% of the variance of high levels of sustainable entrepreneurial intention (See Table 3).

Subsequently, the sufficiency analysis was conducted for low levels of sustainable entrepreneurship intentions. The level of consistency was 0.84, which is in line with the values recommended by Ragin (2008). Five solutions were obtained that explained the 62% of the cases of low levels of sustainable entrepreneurship intentions (consistency: 0.83; coverage: 0.36). It can be observed that the most important configuration for low levels of sustainable entrepreneurship intentions was the combination of low levels of social and civic engagement, low levels of perceived behavioral control, and low levels of the subjective norm (consistency: 0.83; raw co-coverage: 0.35). The second most crucial configuration was low levels of innovativeness, low levels of perceived behavioral control, and high levels of the subjective norm (consistency: 0.85; raw coverage: 0.35). The third most crucial combination was the

Table 1
Main descriptions and calibration values.

	ISSF	SCC	INN	PBC	SN	ATSE
Mean	20.16	1220.32	359.79	28.71	84.22	18554.77
SD	26.46	784.26	167.40	23.60	37.46	20705.30
Minimum	1	60	24	1	1	1,00
Maximum	125	3125	625	125	125	78125
Percentiles						
10	1	342	144	4	27	1458
50	8	1000	320	27	80	10800
90	55	2500	625	60	125	50000

Note: ISSF—Intention to start a sustainable firm; SCC—social and civic competency; INN—innovation; PBC—Perceived behavioral control; SN—Subjective norm; ATSE—Attitude towards Sustainable Entrepreneurship.

Table 2
Necessary conditions for high and low levels of intention to start a sustainable firm.

	ISSF		~ISSF	
	Consistency	Coverage	Consistency	Coverage
SCC	0.65	0.63	0.54	0.59
~SCC	0.57	0.53	0.66	0.68
INN	0.69	0.64	0.56	0.58
~INN	0.55	0.53	0.65	0.70
PBC	0.65	0.69	0.48	0.56
~PBC	0.59	0.50	0.74	0.70
SN	0.65	0.56	0.64	0.61
~SN	0.55	0.58	0.54	0.64
ATSE	0.60	0.63	0.51	0.60
~ATSE	0.62	0.53	0.69	0.66

Note: ISSF-Intention to start a sustainable firm; SCC- social and civic competency; INN-innovation; PBC-Perceived behavioral control; SN-Subjective norm; ATSE-Attitude towards Sustainable Entrepreneurship.

Table 3
Sufficient conditions for high and low levels of intention to start a sustainable firm.

Frecuencia cutoff: 2; Consistency cutoff	ISSF			~ISSF				
	0.83			0.84				
	1	2	3	1	2	3	4	5
SCC	●			○		○	●	●
INN			●		○	●	○	
PBC	●	●	●	○	○			●
NS		●	○	○	●		○	○
ATSE		●				○	○	○
Consistency	0.78	0.79	0.81	0.83	0.85	0.79	0.86	0.83
Raw coverage	0.47	0.36	0.29	0.36	0.35	0.31	0.21	0.19
Unique coverage	0.08	0.05	0.03	0.10	0.11	0.05	0.01	0.01
Overall solution consistency	0.76			0.62				
Overall solution coverage	0.56			0.77				

Note: ●=presence of the condition, ○=absence of the condition; Large circles indicate core conditions; small ones, peripheral conditions; all sufficient conditions had adequate raw coverage between .19 and .47; ISSF-Intention to start a sustainable firm; SCC- social and civic competency; INN-innovation; PBC-Perceived behavioral control; SN-Subjective norm; ATSE-Attitude towards Sustainable Entrepreneurship. Expected vector for subjective performance: 1.1.1.1.1.1 (0: absent; 1: present); Expected vector for ~subjective performance: 0.0.0.0.0.0 using the format of Fiss (2011)

combination of low levels of social and civic engagement, high levels of innovativeness, and low levels of attitude towards sustainable entrepreneurship (consistency: 0.79; raw coverage: 0.31). The fourth most explanatory combination was the combination of high levels of social and civic engagement, low levels of innovativeness, low levels of subjective norm, and low levels of sustainable attitude towards entrepreneurship (consistency: 0.86; raw coverage: 0.21). Finally, the fifth most crucial combination was the combination of high levels of social and civic engagement, high levels of perceived behavioral control, low levels of subjective norm, and low levels of sustainable attitude towards entrepreneurship (consistency: 0.83; raw coverage: 0.19). These solutions explained 36%, 35%, 31%, 21%, and 19% of the variance of low levels of sustainable entrepreneurial intentions.

5. Discussion

Sustainability is gaining increasing importance in society, with the sports industry being no exception (Lindsey & Darby, 2019). To contribute to the sustainable development of society and achieve the SDGx set by the UN 2030 Agenda, sustainable entrepreneurship is vital (Ben-Youssef et al., 2018), having gained importance also within sports entrepreneurship (González-Serrano et al., 2020). As the last educational link between the academic world and the labour market, the university has excellent potential to build attitudes and competencies that facilitate the development of sustainable entrepreneurial intentions in future PASS graduates.

The findings show that intrinsic (ATSE, PBC, SSC, and INN) and extrinsic variables (SN) generate high intentions for sustainable entrepreneurship, with the intrinsic ones being mainly important. The findings show that it is more important to develop PASS students' attitudes, skills, and abilities towards sustainability than to model their immediate environment's opinions about this behavior. Among all the intrinsic variables, knowing how to set up a sustainable business and feeling able to successfully start and managing it (PBC) is essential to generate high levels of sustainable entrepreneurial intentions. This condition was present in all solutions. This finding aligns with several previous studies, which have highlighted the importance of perceived behavioral control in sustainable entrepreneurial intentions (Fatoki, 2019; Sher et al., 2020; Yasir et al., 2021).

However, not just one condition but the combination of different conditions generates these high sustainable entrepreneurial intentions. Specifically, if PASS students feel capable of creating and efficiently managing a sustainable business (PBC) and have high

levels of social and civic engagement, they will have greater chances of having high sustainable entrepreneurial intentions. It seems that, as some previous studies have shown (Andrei & Zait, 2018; Pesch et al., 2019), developing positive feelings towards sustainability (towards education), would help students to have a common goal in the society, and to bear in mind the impacts that their business could have on society. Indeed, once PASS students have learned how to successfully create and manage a sustainable sport business, to possess social and civic values is an indicator of the feasibility of developing sustainable entrepreneurial intentions in the future (Yasir et al., 2021).

Furthermore, PASS students' good attitude towards sustainable entrepreneurship is also essential. This finding is in line with previous studies highlighting the importance of this positive attitude to be materialized in entrepreneurial intentions (Austin et al., 2006; Muñoz et al., 2020; Nuringsih et al., 2019; Short et al., 2009), and sustainable entrepreneurial intentions (Agu, 2021; Fatoki, 2019; Sher et al., 2020; Yasir et al., 2021). High sustainable entrepreneurial intentions will be generated if they also have support from their immediate environment. This finding aligns with some previous studies that have found direct and positive relationships between subjective norms and entrepreneurial intentions (Hidayana, 2021; Liñán & Chen, 2009; Zhang et al., 2013), and sustainable entrepreneurial intentions (Agu, 2021; Fatoki, 2019; Sher et al., 2020; Yasir et al., 2021). Therefore, in addition to bringing sustainable entrepreneurs in the sports sector into the classroom, it would be helpful to hold a day in which friends or family members of the students could attend.

On the other hand, it should not be forgotten the importance of the innovative capacity of PASS students. High levels of innovation, i.e., an excellent capacity to generate ideas and actions creatively, are essential for sustainable entrepreneurship, as previous studies have shown (Bux & Van Vuuren, 2019; Hall & Wagner, 2012; Weidinger, 2014). This is because a sustainable entrepreneurship provides an alternative solution to the conventional one to perform its action with the highest possible potential but respecting the environment (Agri et al., 2018). In addition, due to the physical-sports practice, these students usually present high levels of creativity and imagination, which through education can be transferred to the labour market (González-Serrano, Calabuig, & Crespo, 2018). Therefore, the practical subjects, especially the collective sports subjects that these students attend during the degree, can indirectly help (sports tactics and activity design) to foster these students' capacity for innovation. If PASS students feel capable of creating and managing a sustainable business successfully, and they possess high levels of innovation, even if their close environment does not support them if they decide to be a sustainable entrepreneur, they will have great chances of developing high levels of sustainable entrepreneurial intentions. Therefore, in this case, the subjective norm did not turn out to be of such importance in developing sustainable entrepreneurial intentions, which is in line with previous studies that have not found a direct relationship between both variables (Belchior, & y Liñán F, 2017; González-Serrano, Calabuig, & Crespo, 2018). This fact may be because sports practice has boosted the students' internal locus of control, and if they decide to make a decision, they give more importance to their beliefs, attitudes, and skills than to the opinions of the people around them.

Therefore, when it comes to fostering sustainable entrepreneurship, the university, as the last link in the education system and a bridge to the labour market, has a vital role. Indeed, Strachan (2018) reiterates the importance and value of an education rich in sustainable values for a sustainable future. It is essential since education rich in sustainable values implicitly brings social and civic values and is committed to creating new ways of operating a business from a sustainable perspective. Furthermore, entrepreneurship education should consider adding contents related to sustainability. For this reason, PASS degrees should rethink how to introduce education on sustainability issues in their studies in a cross-sectional manner. In addition, future sports sector graduates should be taught how to be an entrepreneur and how to manage a business sustainably during sport management courses. The direct consequence will be the proliferation of sports entrepreneurs with a sustainable view of the future.

However, without introducing an entrepreneurial education permeated by environmental, social, and economic awareness, without giving sustainability the importance it deserves, there will be a stagnation in sustainable entrepreneurship attitudes. The data show that low levels of PASS sustainable entrepreneurship attitudes is the most prevalent condition, which, along with others, that would generate levels of sustainable entrepreneurship intentions. In line with Fayolle and Gailly (2015), concerning the TPB (Ajzen, 1991), entrepreneurship education must be capable of fostering this sustainable entrepreneurial spirit among students to materialize it subsequently.

Also in terms of low levels of sustainable entrepreneurship intentions, the immediate environment's perception of low support for sustainable entrepreneurship may also influence them. Low levels of subjective norms may hinder the creation of a sustainable enterprise, but it is by no means a determining factor. However, low levels of this concept negatively affect the intention to create a sustainable company. Therefore, feedback from the immediate social environment is also postulated as an important factor, on some occasions, in driving entrepreneurial intention (Hidayana, 2021).

Finally, it should be noted that this study has some limitations. Firstly, due to the sample size, the data are not representative of the entire population of PASS students. Therefore, future studies should extend the sample to other Spanish universities or even other countries. Furthermore, the variables used in this study are limited, so future studies should delve deeper into the relationships between other variables and sustainable entrepreneurship intentions. Moreover, although sustainable entrepreneurship intentions are good predictors of actual future behavior, the data obtained in this study are cross-sectional. Therefore, future studies should be conducted longitudinally to determine whether these variables eventually materialize in the actual behavior of becoming sustainable entrepreneurs in sport.

6. Conclusions

Sustainability in sport entrepreneurship is vital due to the role sport plays in society. Therefore, through the university, future graduates in the sports sector must be educated with favorable attitudes towards sustainability, with high capacity for innovation, and

high social and civic values to generate future sport sustainable entrepreneurs. This research, therefore, relates existing theoretical studies on sustainable entrepreneurial intentions and applies them directly to PASS students. Profiles of PASS students with high and low levels of sustainable entrepreneurial intentions are presenting, shedding lights of how to develop future sustainable entrepreneurs in the sport industry. Using this type of procedure, tangible evidence is obtained of how to orientate the education offered by sport sciences faculties to fully educate PASS students in a competent and up-to-date society (and the labor market) demands. In relation with the findings, it is essential to teach PASS students to perceive themselves as capable of creating a sustainable sports enterprise and managing it efficiently.

Therefore, content related to sustainable enterprises' creation and management should be dealt with in sport management subjects. Specifically, content on, for example, how to organize sustainable sport events, build sustainable sport facilities and take the SDGs into account when making decisions in sport management are vital. In addition, a positive attitude towards sustainability, the ability to innovate, and social and civic values should be promoted throughout the degree in the different subjects. In this way, students' entrepreneurial intentions in the sports sector will be increased sustainably. This sector is growing because the number of people employed, and enterprises created has been increased over the last few years. Thus, it presents good opportunities for future graduates to start up their businesses considering the social, environmental, and economic impacts and become sustainable entrepreneurs. For this reason, this study follows the path of previous work and contributes with this research field by proposing specific profiles of PASS students with high and low levels of sustainable entrepreneurial intentions. Based on these findings, it is possible to know what types of contents or methodologies are needed at sports faculties to generate future sport sustainable entrepreneurs.

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CRediT authorship contribution statement

Daniel Ordinaña Bellver: Conceptualization, Investigation, Writing – original draft. **Carlos Pérez-Campos:** Supervision, Writing – review & editing. **María Huertas González-Serrano:** Methodology, Software, Writing – review & editing. **Gabriel Martínez-Rico:** Writing – review & editing, Data curation, Formal analysis.

Declaration of competing interest

No potential conflict of interest was reported by the authors

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