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Entrepreneurial intentions of Sport Sciences students And Theory of Planned Behavior

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Abstract – This study tests Ajzen's[1] Theory of Planned Behavior in sport sciences with the purpose of determining which variables most influence students' entrepreneurial intentions. Although this theory has been employed to explain entrepreneurial intentions within different contexts, the context of sport sciences has not been addressed. A sample of 379 sport sciences students were administered the Entrepreneurial Intentions Questionnaire and results were analyzed using structural equation modeling. Results indicate that both perceived attitudes and perceived behavior control have significant positive impacts on entrepreneurial intentions, while the impact of subjective norms is negative. Several suggestions to improve curriculum design and teaching in order to promote entrepreneurial intentions and behaviors are provided.

Keywords: entrepreneurship, entrepreneurial intentions, sports, curriculum.

Introduction

Entrepreneurship is associated with a capacity for innovation, initiative[2], and creativity[3], currently receiving increasing attention in economic and societal policies. The entrepreneurial process is based upon the identification, evaluation, and exploitation of opportunities for the creation and development of new business ideas[4]. As intentions reflect a person's motivation to perform a behavior, evidence supporting the link between intentions and actions has been shown with respect to many different types of behaviors[5]. In other words, the stronger a person's intentions and the greater his/her ability (behavioral control), the more likely that behavior is to occur [1]. Specifically, Ajzen's[1] Theory of Planned Behavior (TPB) has been used as a validated framework to explain entrepreneurial intentions[6]. This theory states that much human behavior is planned and is therefore, preceded by intention. According to the TPB, intentions are predicted by cognitive variables, which are also termed motivational "antecedents," consisting of perceived attitudes (PA), subjective norms (SN), and perceived behavioral control (PBC)[1]. The more favorable attitudes, subjective norms, and perceived behavior control are, the stronger the intentions to perform that behavior. However, the relative importance of each of these predictors varies across analyzed behaviors and situations[1]. For example, perceived behavior control plays a key role in determining intentional behavior, while subjective norms are less predictive of intentions for subjects where there is a high internal locus of control[1].

Empirical studies often find the subjective norm construct to be a weak predictor of intentions[7]. Several concerns have been raised in relation to this construct, mainly due to measurement issues (mostly single-item measures are used) and due to the need for expansion of the normative component[8]. A negative relationship between subjective norms and entrepreneurial intentions, although rare, has been verified in some studies (e.g., Ross, Goulet[9]; Shook, Bratianu[10]). The TPB has been validated by several meta-analytic reviews, which have provided strong support for its predictive ability (e.g.,Armitage, Conner[8]). However, only a few TPB studies included measures of actual behaviors, which calls into question the validity of the study as self-reports were commonly used[8].

An issue often raised regarding the predictive power of TPB is the existence of a gap between intentions and future behaviors. Several authors propose strategies to close the *intention-behavior gap*[11]. Further, Ajzen, Czasch and Flood[12] argue that the effectiveness of implementing intentions is related with the notion of a commitment to perform the behavior.

According to the TPB, entrepreneurial intention is the effort a person will put forth to carry out an entrepreneurial behavior. These intentions may be influenced directly by motivational

antecedents[1,13], such as attitudes toward the desirability of an entrepreneurial career; subjective norms, including perceived family expectations and beliefs to perform the behavior; and perceived behavioral control (i.e., the perceived ability to execute the intended behavior of entering entrepreneurship). Moreover, cultural values also affect motivational intention antecedents in general, but might be stronger in subjective norms[14]. Intentions can also be influenced, indirectly (affecting motivational intention antecedents), by situational factors[15,16,17], such as time constraints, task difficulty, and the influence of other people through social pressure[18], and by human capital and other demographic factors[16,18,17], such as the knowledge of different entrepreneurial aspects[19]. Additionally, knowledge concerning the existence of a particular professional career option[13], the relevance of experience and education[20,21] and the role models[22,23] will also have an indirect effect.

Ajzen´s[1] model has been widely used in entrepreneurial research, and especially amongst student populations of different countries, including the U.S[6], Finland and Sweden[7], the U.K.[7], France[24], Romania[10], Russia[25], Spain and Taiwan[14], and Portugal[26]. However, in the sports science context, the TPB has been frequently applied in the analysis of lifestyles, physical activity, and exercise intentions and behaviors[27], but not in the analysis of entrepreneurial intentions.

The majority of studies investigating entrepreneurial intentions have been developed with business samples. To the best of our knowledge, no study investigated this phenomenon in the sports sciences field. Nevertheless, sports are an important economic and social driver of development around the world[28] with a growing relevance in contemporary society. Both entrepreneurship and sports aspire to encourage economic and regional development and share several characteristics, such as innovation, pro-activeness, risk taking, initiative, and opportunity seeking[29]. Sport entrepreneurship refers to innovative activities within the context of sports, enhanced with a proactive and risk-taking quality, valuable for both established and new organizations[28]. Furthermore, sport entrepreneurs are often involved in social and community activities that create social value rather than just personal wealth[29].

In particular, a selection of studies have investigated the link between entrepreneurship and sports focusing on different issues, such as entrepreneurial attitudes and sport franchise[30], entrepreneurial strategies and brand management theories[31], and entrepreneurial systems[32]. Together these studies emphasized the relevance of a deeper understanding of entrepreneurship within the sports domain, since through sport, many new ideas can arise allowing entrepreneurship to take place[28]. However, few studies have empirically developed and tested a sport entrepreneurship construct and little conceptual or empirical research has been devoted to understanding the conditions that produce sport entrepreneurship[29].

According to the European Commission[33], sport represents an important phenomenon with social, economic, cultural, and educational dimensions. Sport sciences reflect this scope as it is a multifaceted and multidisciplinary field where different approaches and research questions emerge[34]. When compared with other fields, sport sciences are unique in terms of its coverage, economic and social role, and for the characteristics it develops in people. Most sport sciences students are related to sport in different ways, either directly (through sports) or indirectly (through sport management), and possess a number of relevant characteristics related with entrepreneurship, such as determination, motivation, and persistence, which can be maximized through education and converted into entrepreneurial actions. Ratten[29] posits that an entrepreneurial culture is important in the support and fostering of entrepreneurial sport opportunities. Therefore, analyzing and promoting entrepreneurial intentions of these students is important for increasing their entrepreneurial initiatives.

Despite earlier advances in the field, relevant unanswered questions related to entrepreneurial intentions of sports sciences students remain. In particular, does the Theory of Planned Behavior contribute to the explanation of entrepreneurial intentions of sport sciences students and if so, what factors influence entrepreneurial intentions of these students? Therefore, the main purpose of this study was to analyze which variables most influence entrepreneurial intentions of sport sciences students. Based upon the TPB predictions and previous literature, the following hypotheses were defined:

Hypothesis 1: There is a positive relationship between perceived attitudes (PA) and entrepreneurial intentions in sport science students.

Hypothesis 2: There is a positive relationship between subjective norms (SN) and entrepreneurial intentions in sport science students.

Hypothesis 3: There is a positive relationship between perceived behavior control (PBC) and entrepreneurial intentions in sport science students.

Method

Participants and data collection

Participants were students of a mid-sized University located in Lisbon, Portugal who agreed voluntarily to participate in this study. A convenience sample of 379 students was obtained, comprised of the following characteristics: 63.5% men and 36.5% women; aged from 18 to 41 years, (21.3 ± 3.2); of which 85.8% were students of sport sciences (exercise and health, sport training and physical education) and 14.2% were from the sport management discipline. Questionnaires were administrated in the classes, with prior permission from the lecturers. Students were briefed on the purpose of the study and then asked voluntarily to complete the standard Entrepreneurial Intentions Questionnaire (EIQ). Participants were given approximately 20 minutes to complete the questionnaire.

Approval of the study protocol was granted by the ethics committee of the Faculdade de Motricidade Humana (Lisbon, Portugal) with the project number 60/2015.

Instrument

The EIQ was developed by Liñán and Chen[14] to measure entrepreneurial intentions and other variables based upon Ajzen's Theory of Planned Behavior model.

Two native speakers in both languages translated the survey instrument into Portuguese. To test the equivalence between the original and the Portuguese instrument, back translation into English was carried out by two other natives of Portugal who are academics and fluent in English. A scholar of English literature then verified the accuracy of the translation. The comparison of the two versions led to the conclusion that the instruments were equivalent (Redford, Veloso[35]).

We used the Entrepreneurial Activity scale (EIQ v.3.2), which is comprised of 20 items that correspond to the elements in the entrepreneurial intention model. All items were measured using a Likert-type scale, ranging from zero (not at all) to seven (totally). The following constructs were measured: Entrepreneurial Intention (EI) (items A4, A6, A9, A13, A17, and A19); Perceived Behavior Control (PBC) (items A1, A5, A7, A14, A16, A20); Personal Attitudes (PA) (items A2, A10, A12, A15, A18); and Subjective Norms (SN) (A3, A8, A11).

Data analysis

Data were analyzed using AMOS 22.0. A two-step maximum likelihood structural equation modeling procedure was performed. First, a confirmatory factor analysis (CFA) was conducted to evaluate the measurement model. The reliability of the constructs was assessed through the Composite Reliability (CR)-values of CR larger than .70 were indicative of good reliability[36]. The average variance extracted (AVE) was estimated to evaluate convergent validity and values larger than .50 were considered to demonstrate convergent validity [37]. Discriminant validity was assumed when the AVE of each construct was larger than the squared correlation between that construct and any other[36].

Second, a structural model estimation was performed to test the research hypotheses. The appropriateness of the data to both the measurement and structural models was estimated through a variety of goodness-of-fit indices. Specifically, a good fit of the models was assumed when the ratio of χ^2 to its degrees of freedom was less than 3.0, and comparative-of-fit-index (CFI) and the goodness-of-fit-index (GFI) were larger than .90 [37]. A root mean square error of approximation (RMSEA) value between .05 and .10 was considered indicative of good fit[38]. The significance of the structural weights was evaluated using Z-tests (statistical significance was assumed at a .05 level).

Results

Measurement model

None of the variables presented asymmetry coefficients indicating severe violations of the normal distribution (|Sk < 3| and |Ku < 7|), which would recommend against SEM with maximum likelihood estimation[38]. The results of the CFA showed that the factor loadings from three items of PBC (A5, A16, A20), two items from PA (A2, A18), and three items from EI (A9, A17, A19) failed to exceed the cut-off point of 0.50 and, consequently, were eliminated[37]. In this sense, the final measurement model consisted of 12 items, with three items reflecting each one of the constructs. After this scale refinement, all items showed high factor loadings, ranging from .60 to .87, while the Z-values ranged from 11.19 to 20.35 ($p < 0.01$) (see Table 1). These results indicate that each item did load significantly on its respective construct. With the exception of the PBC (0.68) that was within the .60 criterion for acceptable reliability[39], the remaining constructs showed good reliability (CR), ranging from .80 (SN) to .85 (EI). All AVE values were close to, or greater than, the .50 standard for good convergent validity (AVE), ranging from .42 (PBC) to .67 (SN).

Table 1. Factor Loadings, Z-Values, Composite Reliability (CR), and Average Variance Extracted (AVE).

Variables	Loadings	Z-value	CR	AVE
PA			.82	.61
A10. If I had the opportunity and resources, I would love to start a business.	.779	17.028		
A12. Amongst various options, I would rather be anything but an entrepreneur.	.736	15.745		
A15. Being an entrepreneur would give me great satisfaction.	.825	18.446		
SN			.80	.67
A3. My friends would approve my decision to start a business.	.691	13.746		
A8. My immediate family would approve my decision to start a business.	.711	14.199		
A11. My colleagues would approve my decision to start a business.	.846	17.277		
PBC			.68	.42
A1. Starting a firm and keeping it viable would be easy for me.	.592	11.190		
A7. I am able to control the creation process of a new business.	.702	13.646		
A14. If I tried to start a business, I would have a high chance of being successful.	.638	12.215		
EI			.85	.65
A4. I am ready to do anything to be an entrepreneur.	.748	16.403		
A6. I will make every effort to start and run my own business.	.803	18,172		
A13. I am determined to create a business venture in the future.	.867	20.353		

Note: CR = Composite reliability; AVE = Average variance extracted; PA = Perceived attitude; SN = Subjective norms; PBC = Perceived behavioral control; EI = Entrepreneurial intentions.

Descriptive statistics for the constructs and its correlations are presented in Table 2. The SN construct had the highest mean score (5.56 ± 1.05), while EI had the lowest mean score (3.70 ± 1.37). With exception of EI (AVE = .65), PBC (AVE = .42), and PA (AVE = .61), the AVE values for the other constructs were greater than the squared correlations between these constructs and any other. Still, as noted in Table 2, correlation coefficients between EI and PBC (.83) and between EI and PA (.84) were

lower than the suggested criterion of .85 [40]. Further, although the squared multiple correlations between EI and PBC (ϕ = .68) and between EI and PA (ϕ = .71) were slightly higher than the AVE value of these constructs, additional support for discriminant validity was established by comparing the chi-square statistics when the correlation between the two constructs was free versus constrained to one[41]. A statistically significant decrease in the chi-square values was evident when the correlation was free between IE and PBC ($\Delta\chi^2$ = 20.57; Δdf = 1; p < .01) and between IE and PA ($\Delta\chi^2$ = 44.48; Δdf = 1; p < .01). Thus, these tests provide evidence of discriminant validity.

In addition, the results obtained in the final measurement model indicated an acceptable fit to the data [$\chi^2(48)$ = 121.36 (p < .01); χ^2/df = 2.53; CFI = .96; GFI = .95; RMSEA = .06)]. The χ^2 statistic was significant (p < .001); however, its ratio to the degrees of freedom was within the usually accepted range. In addition, it is important to consider other indices given that the χ^2 statistic is overly sensitive to sample size[37,38]. The CFI, GFI, and RMSEA values met the recommended criteria for good fit, while χ^2/df was indicative of acceptable fit. Overall, the final measurement model was clearly within the required criteria for good psychometric properties. Consequently, the structural model was examined.

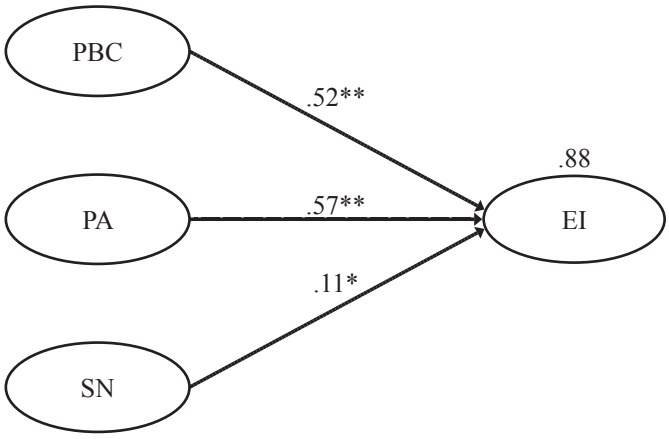
Table 2. Mean (M), Standard Deviation (SD), and Correlation Matrix.

			Correlation matrix			
	M	**SD**	**PBC**	**PA**	**SN**	**IE**
PBC	3.82	.97	1.00			
PA	4.78	1.42	.61**	1.00		
SN	5.56	1.05	.40**	.44**	1.00	
EI	3.70	1.37	.83**	.84**	.35**	1.00

Note: ** p < .01

Structural model

The examination of the structural model included a test of the overall model fit as well as individual tests of the relationships among latent constructs. As for the measurement model, the overall assessment of the structural model indicated an acceptable fit to the data [$\chi^2(48)$ = 121.36 (p < .01); χ^2/df = 2.53; CFI = .96; GFI = .95; RMSEA = .06)]. The path coefficients for the model are presented in Figure 1. The relationship between PBC and EI (β = .52, p < .01) was positive and significant supporting H1. The PA construct showed a significant positive impact on EI (β = .57, p < .01), and thus H2 was supported. In turn, SN was negatively related with EI (β = −.11, p < .05). Thus, H3 was not supported. Nevertheless, it is important to note that coefficients below .20 should not be considered relevant because they explain a very low percentage of variance[42]. The ability of the hypothesized model to explain the variation in the outcome variable was assessed by R^2 values. The dimensions of PBC, PA, and SN accounted for approximately 88% of the variance in EI (R^2 = .88).



Notes: PBC = Perceived behavioral control; SN = Subjective norms; PA = Perceived attitude; EI = Entrepreneurial intentions;
* p < .05; ** p < .01.

Figure 1. Standardized estimates of the structural model.

Discussion

The main purpose of this study was to investigate which variables most influence entrepreneurial intentions of sport sciences students in a specific context by testing the predictions associated with the TPB. Results indicate that TPB psychometric properties are satisfactory, and the application of the model is partly corroborated in this sample; both perceived attitudes and perceived behavior control have significant positive impacts on entrepreneurial intentions, while the impact of subjective norms is negative and of small magnitude. In sum, findings suggest that students who have stronger positive attitudes towards entrepreneurship, as well as those with higher perceived control over their actions, will likely have stronger entrepreneurial intentions. The weak negative impact of subjective norms suggests that a more intense social pressure will lower the willingness of subjects in our sample to follow an entrepreneurial path (although this negative impact is quite low).

These findings are in line with most of TPB initial predictions[1,13] and with the study of Shook and Bratianu[10]. In this study, the entrepreneurial intent in Romanian students was examined using the Theory of Planned Behavior and results showed that perceived attitudes and perceived behavior control were positively related with entrepreneurial intentions, however, subjective norms was negatively related to entrepreneurial intent. According to the authors, this result can be explained by the transitional economy of Romania and the context of a post-communist society, where during the five decades of socialist and communist rule, entrepreneurs were perceived negatively[43]. In Portugal, the context is different but the results are similar.

In the North American context, there are studies were a weak positive relationship between subjective norms and entrepreneurial intent was found[7] or even no relationship[6]. Autio, Keeley, Klofsten, Parker, Hay[7] also analyzed this relationship in the Scandinavian context and no relationship was found. Given these results, it seems important to analyze motivational antecedents and the role and recognition of

entrepreneurship in countries with transitional economies vs. market-based economies.

In the study of Liñán and Chen[14], the main influence of subjective norms was on perceived attitudes and perceived behavior control. However, in the present study, these effects were not tested. The negative relationship between subjective norms and entrepreneurial intentions it is not common, although has been verified in some studies, as mentioned previously. This result is not in line with observations that family tradition role models tend to influence entrepreneurial behavior in a positive manner[44]. Ajzen[1] states that subjective norms are less predictive of intentions for subjects with a higher internal locus of control. This construct refers to the extent to which individuals believe that they can control events and outcomes in their own lives[45]. It is possible that the subjects in our sample possessed a high internal locus of control and confidence in their ability to pursue an entrepreneurial path and therefore, were less influenced by perceived social norms related to entrepreneurship.

We can also explain this relationship using Theory of Psychological Reactance proposed by Brehm[46] where people react to a threat or elimination of a behavioral freedom, trying to restore the freedom that was threatened or taken away. Freedom can be reestablished by behaving in a way opposite to what is desired[47]. This concept is related to the idea of "reverse psychology," which is based on the notion that telling someone not to do something makes it more appealing[48]. Therefore, in this case, if society were to encourage an entrepreneurial path, certain people could feel that their freedom to choose was threatened and subsequently reject an entrepreneurial life in response.

According to the TPB approach, the influence of cultural values in subjective norms is strong[12]. However, according to GEM Portugal 2010[49], cultural and social norms in Portugal (mainly the lack of incentive to individual success), were reported as the less favorable structural condition and national experts argue that Portuguese culture is poorly targeted to entrepreneurship. Thus, it would be important to understand what kind of social pressure influences entrepreneurship.

As stated earlier, empirical studies often find the subjective norm construct to be a weak predictor of intentions. By using a multi-item scale, the present study has attempted to overcome some limitations, but subjective norms continued to be a weak predictor of intentions. It is likely that additional items and improvements in the construct are necessary to increase its predictive value. The percentage of variance in intentions explained by the components in the present study is high ($R^2 = .88$) when compared with previous research. In their meta-analytic review, Armitage and Conner[8] found that TPB accounted for between 27% and 39% of the variance in behavior and intentions. However, we still found studies from different fields (e.g., Doll, Ajzen[50]), which presented a high percentage of variance explained ($R^2 = .88$). In the present study, behavior was not analyzed, which could probably explain the high variance found, as well as the low variance in the demographic characteristics of the sample (e.g., age, gender, and background).

Table 3. Suggestions to improve curriculum design and teaching.

How to increase entrepreneurial intentions through PA and PBC?	
Formal curriculum	**Informal curriculum**
• Experiential learning • Learner's active participation • Team work • Participation of entrepreneurs • Internships in professional contexts • Visits to companies • Development of projects • Introduce entrepreneurship skills to subjects • Experience of failure, risk, responsibility, and opportunity identification training • A portfolio to practice entrepreneurship	• The use of the internet/online social media • Diversity of educational experiences • Insisting in the importance of the • entrepreneur to the society • Development of projects • Visits to companies • Entrepreneurship workshops/seminars and • competitions • Entrepreneurship awards for former students • R&D centers in entrepreneurial studies
How to reduce the gap between entrepreneurial intentions and behaviors? (Examples)	
Implementation intentions Material: paper and pencil exercise: *You are more likely to achieve your goal of being an entrepreneur if you decide in advance when, where and how this is to be achieved and then stick to your plan. Please fill the spaces below:* *WHEN are you going to create your own business? Which year, month, day?* *WHERE are you going to develop your own business?* *HOW will you do it? What kind of organization it will be? How many partners?*	
Commitment Material: paper and pencil exercise (commitment form): The commitment form can be applied after the exercise of implementation intentions or just by itself. *I hereby make a commitment to carry out intentions I have made to develop my own business, in the year, month and day previously mentioned, creating a business plan…*	
Combination of motivational techniques + volitional techniques* 1. Motivational techniques: to promote awareness seminars and entrepreneurship workshops; to invite recognized entrepreneurs to share their experience. 2. Volitional techniques: implementation intentions (see 1st exercise).	

Even in an unaddressed group, findings show that TPB can be used as a validated framework to explain entrepreneurial intentions[6]. According to Ajzen[15], the relative importance of each of these predictors varies across the analyzed behaviors and situations. In this sample, perceived attitudes played a key role in determining intentional behavior, rather than perceived behavioral control, as predicted by Ajzen[15]. Nevertheless, the difference between standardized estimates of each construct is very small.

This study is not exempt from limitations. The cross-sectional and self-reported data, as well as the use of a convenience sample, could limit the development of causal relationships, as well as increase the bias and data subjectivity. In this study, the link between intentions and behavior has not been analyzed, as well as the indirect influence of situational factors, cultural values, human capital, and other demographic factors (e.g., age, gender, and course of study) on intentions, which could also influence the results.

Concerning implications and guidelines, the findings of this study lend further support for the TPB–in particular, for the role of attitudes and behavioral control–and introduce novel perspectives on the antecedents of entrepreneurial intentions in the sport sciences field. From a practical point of view and based on the results (Figure 1), several guidelines are proposed to promote entrepreneurial intentions and behaviors through curriculum (Table 3). According to Kelly[51], the formal curriculum is related with formal activities organized by school during teaching periods. Informal curriculum activities relate to the organizational culture inside the academic institution and happen voluntarily and after school hours. As PBC and PA showed a significant positive impact on EI, a variety of suggestions are made to increase entrepreneurial intentions through these constructs, in the student's formal and informal curriculum. As SN was negatively related with EI, we did not provide suggestions based on this construct. In this proposal, we follow different authors' strategies to help close the "intention-behavior gap" often raised in the TPB, including implementation intentions and commitment[12], and a combination of motivational and volitional techniques[52].

In addition, specific entrepreneurship education programs should be developed based on the suggestions offered above to promote entrepreneurial intentions and behaviors through curriculum. In general, studies tend to find that entrepreneurial intentions or the motivational antecedents are enhanced by program participation (e.g., Liñán, Rodríguez-Cohard, Rueda-Cantuche[53]); however, results differ depending on whether elective or compulsory programs are being observed. Lena and Wong[54] found that entrepreneurship education programs per se were not enough to promote entrepreneurial intentions and influence business start-up decisions. A positive attitude towards engagement in these programs seems to be important since in programs where participation is compulsory, participants tend to dislike the program more, which negatively affects entrepreneurial intentions[55]. Therefore, participation in activities related to the promotion of entrepreneurial intentions and behaviors should be elective.

Conclusion

The present study makes three main contributions: (a) it finds partial support for the TPB in explaining entrepreneurial intentions of a hitherto unaddressed group (sport sciences students); (b) it further questions the role of subjective norms in explaining intentions under specific settings; and (c) it offers several suggestions to improve curriculum design in order to promote entrepreneurial intentions. The guidelines proposed based upon the results are important to the practice of entrepreneurship education. The enhancement of entrepreneurial intentions and behaviors of non-business students requires fostering their attitudes toward an entrepreneurial path and increasing their perceived behavior control. This is in line with the suggestions of Ajzen[1] related with the use of TPB to implement interventions to change behaviors based upon different predictors.

The main conclusion and key theoretical message that emerged from this study relates to a better understanding of the variables that most influence entrepreneurial intentions of sport sciences students, which can be maximized through education and converted into entrepreneurial actions. The uniqueness of the sport sciences field justifies greater investment in educational policies to promote entrepreneurial behaviors.

Moreover, undergraduate programs should be revised frequently as the curriculum is constantly changing in response to societal demands[56].

Future research (e.g., longitudinal studies, triangulation of data, analyzing the link between intentions and behavior in sports science students, analyzing the influence of situational factors, cultural values, human capital, and other demographic factors in intentions) could address some of the limitations of the present study and increase confidence in the generalization of findings. Following Liñán[57], the questionnaire may be revised so that different variables are introduced to differentiate elements of the sample. In addition, the strong correlations between some variables suggest the need of scale refinement in future research as a way to verify the importance of this model.

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