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Artículos científicos

**Intencionalidad hacia el emprendimiento sostenible: actitudes,
normas subjetivas y control comportamental percibido**

***Intentionality towards sustainable entrepreneurship: attitudes, subjective
norms and perceived behavioral control***

***Intencionalidade rumo ao empreendedorismo sustentável: atitudes, normas
subjetivas e controle comportamental percebido***

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Resumen

El emprendimiento sostenible ha emergido como un enfoque empresarial que busca equilibrar los impactos económicos, sociales y ambientales. A pesar de su relevancia, son escasas las investigaciones que exploran los factores que influyen en las intenciones de los individuos hacia este tipo de emprendimiento, especialmente en el contexto universitario. Este estudio tiene como objetivo analizar los factores que influyen en la intencionalidad de crear emprendimientos sostenibles en los estudiantes de la licenciatura en Administración de la Universidad de Sonora. Aquí se muestra que el 75.2% de los estudiantes presentó alta intención de emprendimiento sostenible, con una actitud positiva en el 76.5%, mientras que las normas subjetivas y control del comportamiento obtuvieron predominantemente niveles medios. La regresión lineal múltiple reveló que las tres variables explicaron el 64.7% de la intención emprendedora. Estos hallazgos refuerzan la relevancia del emprendimiento sostenible entre universitarios y la importancia de factores actitudinales, normativos y de control en la configuración de intenciones emprendedoras, contrastando con la escasa atención previa a este tema. Los resultados sugieren la necesidad de fortalecer las competencias emprendedoras sostenibles mediante nuevas metodologías educativas en la formación universitaria, como el aprendizaje basado en problemas, proyectos y trabajo colaborativo. Este estudio abre oportunidades para futuras investigaciones que profundicen en los impulsores de la intención emprendedora sostenible desde una perspectiva multidimensional, considerando variables individuales, educativas y contextuales.

Palabras clave: Educación emprendedora, estudiantes universitarios, regresión lineal múltiple, Teoría del Comportamiento Planificado.

Abstract

Sustainable entrepreneurship has emerged as a business approach that seeks to balance economic, social and environmental impacts. Despite its relevance, there is little research that explores the factors that influence individuals' intentions towards this type of entrepreneurship, especially in the university context. This study aims to analyze the factors that influence the intention to create sustainable ventures in students of the Bachelor's Degree in Administration at the University of Sonora. Here we show that 75.2% of the students presented a high intention for sustainable entrepreneurship, with a positive attitude in 76.5%, while subjective norms and behavioral control obtained predominantly medium levels. The

multiple linear regression revealed that the three variables explained 64.7% of the entrepreneurial intention. These findings reinforce the relevance of sustainable entrepreneurship among university students and the importance of attitudinal, regulatory and control factors in the configuration of entrepreneurial intentions, contrasting with the scant previous attention to this topic. The results suggest the need to strengthen sustainable entrepreneurial skills through new educational methodologies in university training, such as problem-based learning, projects and collaborative work. This study opens opportunities for future research that delves into the drivers of sustainable entrepreneurial intention from a multidimensional perspective, considering individual, educational and contextual variables.

Keywords: Entrepreneurial education, university students, multiple linear regression, Theory of Planned Behavior,

Resumo

O empreendedorismo sustentável surgiu como uma abordagem empresarial que procura equilibrar os impactos económicos, sociais e ambientais. Apesar da sua relevância, há poucas pesquisas que explorem os fatores que influenciam as intenções dos indivíduos em relação a este tipo de empreendedorismo, especialmente no contexto universitário. Este estudo tem como objetivo analisar os fatores que influenciam a intenção de criar empreendimentos sustentáveis em alunos do Bacharelado em Administração da Universidade de Sonora. Aqui mostra-se que 75,2% dos alunos apresentaram elevada intenção de empreendedorismo sustentável, com atitude positiva em 76,5%, enquanto as normas subjetivas e o controle comportamental obtiveram níveis predominantemente médios. A regressão linear múltipla revelou que as três variáveis explicaram 64,7% da intenção empreendedora. Estas conclusões reforçam a relevância do empreendedorismo sustentável entre os estudantes universitários e a importância dos fatores atitudinais, normativos e de controlo na configuração das intenções empreendedoras, contrastando com a escassa atenção anterior a este tema. Os resultados sugerem a necessidade de reforçar as competências empreendedoras sustentáveis através de novas metodologias educativas na formação universitária, como a aprendizagem baseada em problemas, projetos e trabalho colaborativo. Este estudo abre oportunidades para pesquisas futuras que investiguem os impulsionadores da intenção empreendedora sustentável a partir de uma perspectiva multidimensional, considerando variáveis individuais, educacionais e contextuais.

Palabras-chave: Educação empreendedora, estudantes universitários, regressão linear múltipla, Teoria do Comportamento Planejado.

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Introduction

Sustainable entrepreneurship has gained increasing attention in recent years, being recognized as an innovative solution to address economic, social and environmental challenges (Filser et al. 2019). However, despite its potential, there is little research exploring the factors that influence individuals' intentions towards this type of entrepreneurship, especially in the university context (Espino, 2019).

University education has been highlighted by UNESCO as a key driver for the promotion of sustainable development. Universities are expected to train students with the necessary skills to become agents of change, capable of creating companies that generate economic, social and environmental value (Romero, 2020). However, according to the Global Entrepreneurship Monitor (GEM) Global Report 2021/2020, Mexico obtained a low rating in university entrepreneurial education, which highlights the need to strengthen this aspect (GEM, 2022). For this reason, the search for an understanding, prediction and even a transformation in the behavior related to the creation of sustainable organizations becomes essential; therefore, today, university courses should include the study of sustainable entrepreneurship in the educational field (Espino, 2019). In addition, there is little research that explores the role of education in stimulating participation in social entrepreneurship by students (Agu et al., 2021). Considering that university education has been highlighted as one of the solutions for the dissemination of sustainability by UNESCO, it is intended that through research, learning about sustainable development, and, in addition, through the adoption of day-to-day practices in higher education, universities will be the seed for the birth of new entrepreneurs with a more social, ecological and not merely economic vision as is customary, and that in turn they will collaborate in the sustainable development of the planet.

Despite the benefits of sustainable entrepreneurship, there are perceived challenges that hinder its widespread adoption. To fully realize its potential, significant changes in business practices, government policies, and institutional priorities are required (Chirinos and Perez, 2016).

It is argued that university education plays a crucial role in the formation of sustainable entrepreneurs. Universities must provide students with the competencies and

skills necessary to identify and develop business opportunities that contribute to sustainable development (Agu et al., 2021).

In Latin America, there is a considerable number of young people with the desire to start entrepreneurial projects and possess attractive ideas. However, many of them lack the necessary preparation to successfully face challenges, especially those related to education that provides them with the essential tools to successfully follow the path of purposeful entrepreneurship (Malvacias et al., 2022).

In this context, the State has an excellent opportunity to incorporate sustainable entrepreneurship in higher education, which could boost economic development and growth. It is argued that state support for entrepreneurial activity must be planned, coordinated and systematic in terms of training and acquiring the necessary skills. This would allow for the establishment of successful business models that contribute to the economic development of the country (Malvacias et al., 2022).

Currently, universities are expected to train students with skills and competencies that allow them to perform both in salaried jobs and in the entrepreneurial field. Educational institutions must transcend conventional teaching methods and focus on preparing individuals according to the changing demands of society (Colther et al., 2020). An academic entrepreneurship program is defined as a set of courses or educational processes designed to foster entrepreneurial attitudes, skills and competencies, with the main objective of cultivating the necessary skills for the creation of new businesses (Fayolle *et al.*, 2006).

Despite the importance of sustainable entrepreneurship and the fundamental role of universities in fostering it, the literature review reveals important gaps in research. First, there are few studies that specifically examine the factors that influence university students' sustainable entrepreneurial intention (Vuorio et al., 2018). Most research has focused on entrepreneurial intention in general, without considering the particularities of sustainability-oriented entrepreneurship (Valencia et al., 2016).

Second, while some studies have explored the influence of variables such as education and exposure to sustainability issues on sustainable entrepreneurial intention (Kuckertz and Wagner, 2010), a deeper understanding of how attitudinal, normative, and perceived behavioral control factors shape these intentions in the university context is still required (Schlaegel and Koenig, 2014). These gaps in the literature are important because they limit the understanding of the mechanisms that drive sustainable entrepreneurial intention in young university students. Without a clear understanding of these factors,

universities face challenges in designing effective educational programs that foster the development of skills and favorable attitudes toward sustainable entrepreneurship (Duarte and Cagica, 2016).

In this context, this research seeks to answer the following questions: What is the level of intentionality to create sustainable entrepreneurships in students of the Bachelor's Degree in Administration at the University of Sonora? How do attitudes toward sustainable entrepreneurship, subjective norms, and perceived behavioral control influence the sustainable entrepreneurial intention of these students?

Therefore, this research aims to analyze the factors that influence the intentionality to create sustainable entrepreneurships in students of the Bachelor's Degree in Administration at the University of Sonora. It is hypothesized that attitude towards sustainable entrepreneurship, subjective norms, and perceived behavioral control have a positive and significant influence on students' intention to create sustainability-oriented companies. To this end, Ajzen's (1991) Theory of Planned Behavior (TPB) is adopted as a theoretical framework, which has proven to be a robust model for predicting entrepreneurial intentions. (Valencia *et al.*, 2016).

The results of this study will contribute to a better understanding of the drivers of sustainable entrepreneurial intention in young university students, providing guidance for the design of educational programs that foster the development of entrepreneurial skills aligned with the Sustainable Development Goals (SDGs). Furthermore, the findings are expected to serve as a basis for future research that delves deeper into this topic from a multidimensional perspective.

Theoretical framework

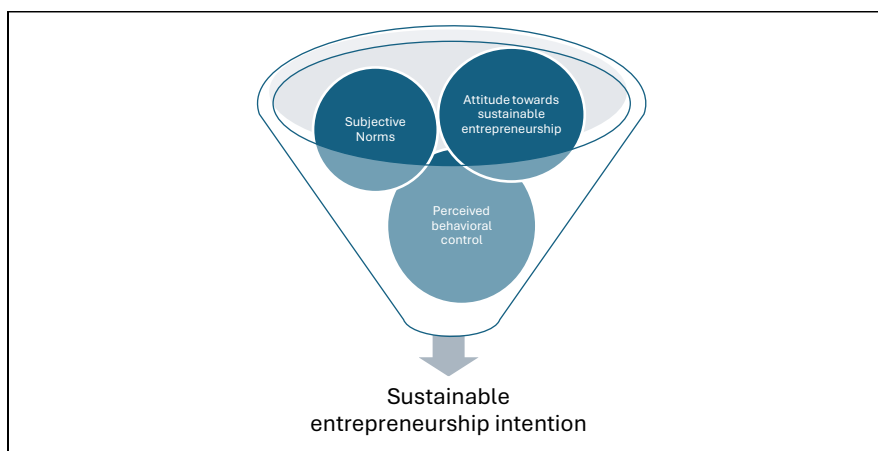
Sustainable entrepreneurship is defined as a business approach in which organizations adopt sustainable business practices to achieve efficiency and competitiveness, balancing their environmental, economic and social impacts (Schaltegger and Wagner, 2011). This type of entrepreneurship seeks to identify and take advantage of opportunities that generate benefits for communities and the environment, promoting sustainability (Muñoz and Cohen, 2018).

Sustainable entrepreneurs are characterized by their ability to replace traditional practices, systems and processes with superior products and services in social and

environmental terms (Vallaster et al., 2019). These business models encourage the co-creation of value by involving all stakeholders in the production process (Evans et al., 2017).

To understand the factors that influence sustainable entrepreneurial intention, Ajzen's (1991) Theory of Planned Behavior (TPB) has proven to be a solid theoretical framework. The TPB postulates that the intention to perform a behavior is determined by three factors: attitude towards sustainable entrepreneurship, subjective norms and perceived behavioral control (Figure 1).

Figure 1 Model of Entrepreneurial Intentionality



Source: Adapted from Ajzen (1991)

Attitude toward behavior refers to the positive or negative evaluation that an individual has about performing a specific behavior. Subjective norms represent the perceived social pressure to perform or not perform a behavior. Perceived behavioral control refers to the perceived ease or difficulty of performing a behavior, considering the presence of factors that can facilitate or hinder it. (Ajzen, 1991).

Perceived Behavioral Control

This variable refers to the perception that people have about their ability to execute a specific behavior; in the context of this research, it is related to the aptitude to establish and manage a new sustainable company (Torres and Vidal, 2019). Perceived behavioral control is formed from beliefs about control, which can be described as the level of subjective probability of having the favorable elements (skills or resources) to optimally carry out a specific behavior (Ajzen, 2020).

Perceived behavioral control is defined as the perception of the ease or difficulty of becoming an entrepreneur (Liñán and Chen, 2009). This concept is closely related to self-efficacy (SE) and perceived viability, since all three refer to the feeling of capacity in relation to the execution of behaviors linked to business creation. However, recent research has highlighted the distinction between perceived behavioural control and self-efficacy, pointing out that the former encompasses not only the feeling of being competent, but also the perception of the controllability of the behaviour (Liñán & Chen, 2009).

Perceived behavioural control is assumed to be rooted in accessible control beliefs, just as attitudes are derived from accessible behavioural beliefs and subjective norms from accessible normative beliefs. These beliefs are linked to the presence of factors that may favour or hinder the performance of the behaviour, such as necessary skills and abilities, availability or lack of time, money and other resources, and the cooperation of other people. (Ajzen, 2020).

Subjective norms

Subjective norms are a central construct in Ajzen's (1991) Theory of Planned Behavior (TPB). This author defines them as the perception that an individual has about the social pressure to perform or not perform a certain behavior. In other words, they represent a person's beliefs about what other individuals or groups important to him think he should do.

Fishbein and Ajzen (1975) argue that subjective norms are determined by normative beliefs, that is, by an individual's perception about whether people or reference groups important to him approve or disapprove of performing a specific behavior. These beliefs are weighted by the individual's motivation to comply with the expectations of these referents.

For Schifter and Ajzen (1985), subjective norms reflect the influence of perceived social pressure to perform or not perform an action. These authors point out that this construct captures the assessment that an individual makes about whether people whose opinion is relevant to him think that he should perform a given behavior.

From the perspective of Miniard and Cohen (1981), subjective norms represent an individual's perception of whether significant others expect him or her to perform a particular behavior. These authors emphasize that this construct reflects the normative influence of others on a person's intentions and actions.

Terry and Hogg (1996) emphasize that subjective norms refer to the perception of social pressure to behave in a certain way. According to these authors, this construct is influenced by the perceived expectations of significant others and the individual's motivation to meet these expectations.

Rivis and Sheeran (2003) emphasize that subjective norms capture the influence of perceived social expectations on an individual's intention and behavior. For these authors, this construct reflects the perception of what relevant others think one should do in a given situation.

This factor refers to "the normative expectations of third parties. That is, the perceptions about the performance of the behavior that the person believes important people in their environment have" (Romero, 2020, p.14). For the author, subjective norms, understood as the perception that the individual has about the opinion of their close environment regarding the behavior of undertaking sustainably, constitute a relevant factor that positively influences the intention to create companies with a focus on economic, social and environmental sustainability.

Subjective norms are an essential component of the TPB that refer to an individual's perception of social pressure to carry out or not a specific behavior. This construct is determined by normative beliefs; that is, by the assessment that a person makes about whether significant others approve or disapprove of the performance of a particular behavior, weighted by the motivation to meet the expectations of said referents. Subjective norms capture the influence of perceived social expectations on individual intentions and actions.

Attitude towards sustainable entrepreneurship

The attitude towards sustainable entrepreneurship is a construct that has gained relevance in recent years, given the growing interest in the development of business initiatives that integrate economic, social and environmental aspects. Kuckertz and Wagner (2010) define the attitude towards sustainable entrepreneurship as the positive or negative evaluation that an individual makes about the creation of companies that seek to balance economic, social and ecological objectives. These authors emphasize that this attitude is influenced by the orientation towards sustainability, understood as the importance attributed to environmental and social aspects in the business context.

For Schaltegger and Wagner (2011), the attitude towards sustainable entrepreneurship refers to the favorable or unfavorable disposition of an individual towards the creation and

management of companies that integrate sustainability in their business model. These authors point out that this attitude is determined by factors such as personal values, environmental and social awareness, and the perception of opportunities for the development of sustainable business initiatives.

According to Muñoz and Dimov (2015), the attitude towards sustainable entrepreneurship represents an individual's evaluation of the attractiveness and desirability of creating companies that address social and environmental challenges, while generating economic value. These authors highlight that this attitude is influenced by exposure to sustainability problems, the identification of opportunities to solve them, and the motivation to generate a positive impact on society and the environment.

For Vuorio et al. (2018), the attitude towards sustainable entrepreneurship refers to an individual's predisposition to favorably evaluate the creation of companies that integrate economic, social, and environmental objectives. These authors point out that this attitude is determined by factors such as altruistic values, orientation towards sustainability, and the perception of viability and desirability of sustainable business initiatives.

The attitude towards sustainable entrepreneurship represents an individual's positive or negative evaluation of the creation and management of companies that seek to solve social and environmental problems, while generating economic profitability. These authors emphasize that this attitude is influenced by awareness of the need for sustainable development, the perception of opportunities for sustainable entrepreneurship and the appreciation of the benefits associated with this type of initiatives (Hanohov y Baldacchino, 2018).

In the context of sustainable entrepreneurship, the attitude towards this type of entrepreneurship would refer to the degree to which an individual values positively or negatively the creation and management of companies that integrate economic, social and environmental objectives. According to Ajzen's TPB (1991), this attitude would be determined by the beliefs that the person has about the results associated with sustainable entrepreneurship (for example, generation of economic value, positive social impact, preservation of the environment) and the evaluation that he or she makes of each of these results; for the author, the attitude towards sustainable entrepreneurship refers to the favorable or unfavorable evaluation that an individual makes about the creation and management of companies that integrate economic, social and environmental objectives.

It is understood then, that this attitude is determined by factors such as personal values, orientation towards sustainability, awareness of social and environmental problems, perception of opportunities for the development of sustainable business initiatives and motivation to generate a positive impact on society and the environment. The attitude towards sustainable entrepreneurship is a relevant construct to understand entrepreneurial intention and behavior oriented towards sustainability. This conceptual theoretical design leads to the following research question: How do attitudes towards sustainable entrepreneurship, subjective norms and perceived behavioral control affect the intention to undertake sustainable entrepreneurship? To answer this question, the following methodological design was carried out.

Materials and methods

The research carried out is explanatory in nature, since it is aimed at examining the nature and manifestation of the phenomenon along with its components. This type of research enables the detailed elaboration of the phenomenon studied, mainly through the measurement of one or more attributes. The design adopted is non-experimental, since it is carried out without the intentional manipulation of variables; instead, it focuses on the observation of phenomena in their natural environment. In addition, it is a cross-sectional study, since the phenomena were observed as they occur in their natural context, without manipulation of variables and at the current time (Hernández et al., 2014).

The hypothesis that this work seeks to answer was:

H0: The attitude towards sustainable entrepreneurship, subjective norms and perceived behavioral control do not affect the intention to carry out sustainable entrepreneurships.

Ha: The attitude towards sustainable entrepreneurship, subjective norms and perceived behavioral control affect the intention to carry out sustainable entrepreneurships.

To collect the data, Romero's instrument (2020) was applied, in order to determine the sustainable entrepreneurial intention in the students of the Bachelor's Degree in Administration at the University of Sonora.

Universe, sample and sampling technique

The study population is made up of students enrolled in the Bachelor's Degree in Administration at the University of Sonora, Central Regional Unit, in the 2022-2 school year. Of the total number of students enrolled in that semester, 378 are in the first semester, 69 in the second, 237 in the third, 79 in the fourth, 182 in the fifth, 78 in the sixth, 124 in the seventh, 129 in the eighth, and 162 in the ninth semester. In sum, the Bachelor's Degree currently has a total enrollment of 1,438 students. The distribution of students per semester shows that the largest number is concentrated at the beginning of the degree, with 378 in the first semester, while the smallest number is observed in the second semester, with only 69 registered students. The intermediate semesters have enrollments between approximately 70 and 240 students. A stratified sample of the population of 1,438 students of the Bachelor of Administration was determined from 303 students, calculated with a confidence level of 95% and a margin of error of 5%. However, during data collection, a sample of 412 students was obtained, exceeding the minimum required size. This increase in the sample size has allowed to reduce the margin of error, increase statistical power and improve the representativeness of the strata (semesters). Therefore, the results obtained from this sample of 412 students are more precise and representative of the study population, which strengthens the validity and reliability of the conclusions derived from this analysis.

Results

Regarding the intention of sustainable entrepreneurship, according to the results obtained shown in Table 1, it is observed that there are 412 valid cases, of which only 4.6% of the students (19 cases) present a low level of entrepreneurial intention. 20.1% of the students (83 cases) have a medium level in this variable. Finally, the absolute majority equivalent to 75.2% of the students (310 cases) show a high level of sustainable entrepreneurial intention. This variable shows a strong tendency towards high values in the sample, confirming a majority interest in these forms of entrepreneurship by the university students analyzed.

Table 1. Sustainable Entrepreneurship Intention

		Frequency	Percentage	Valid percentage	Cumulative Percentage
VALID	LOW	19	4.6	4.6	4.6
	MEDIUM	83	20.1	20.1	24.8
	HIGH	310	75.2	75.2	100.0
	Total	412	100.0	100.0	

Source: Own elaboration

Regarding the results obtained on the attitude towards sustainable entrepreneurship, as shown in Table 2, 6.3% of students (26 cases) have a low attitude towards sustainable entrepreneurship. 17.2% of students (71 cases) have a medium level in this variable. The great majority, corresponding to 76.5% of students (315 cases) show a high attitude towards sustainable entrepreneurship. In conclusion, three out of four students (76.5%) have a positive and favorable attitude towards sustainable entrepreneurship. This reflects an important predisposition among the university students analyzed regarding this form of entrepreneurship. It confirms that the generalized attitude is one of approval and enthusiasm towards the development of environmentally and socially sustainable business initiatives. In summary, this attitudinal variable, essential for the research, leans strongly towards positive levels among the sample of students.

Table 2. Attitude towards sustainable entrepreneurship.

		Frequency	Percentage	Valid percentage	Cumulative Percentage
VALID	LOW	26	6.3	6.3	6.3
	MEDIUM	71	17.2	17.2	23.5
	HIGH	315	76.5	76.5	100.0
	Total	412	100.0	100.0	

Source: Own elaboration

In relation to the results obtained on Subjective norms, as shown in Table 3, of the total of 412 valid observations, 13.1% of the students (54 cases) show a low level in the variable subjective norms related to sustainable entrepreneurship.

Tabla 3. Subjective norms.

		Frequency	Percentage	Valid percentage	Cumulative Percentage
VALID	LOW	54	13.1	13.1	13.1
	MEDIUM	198	48.1	48.1	61.2
	HIGH	160	38.8	38.8	100.0
	Total	412	100.0	100.0	

Source: Own elaboration.

Nearly half of the sample, 48.1% of the students (198 cases) have an average score in subjective norms. Finally, the remaining 38.8%, equivalent to 160 students, present a high level of subjective norms of sustainable entrepreneurship. In summary, this variable is distributed at all levels without a marked tendency, with a slight inclination towards average values among the university students analyzed. Unlike intention and attitude, subjective norms are not so concentrated in the high categories. This was expected due to the very nature of this variable. In conclusion, a significant dispersion is observed among the sample in their subjective norms, divided between low, medium and high levels without an absolute predominance of any of them.

In Table 4, in the variable of Perceived Behavioral Control on sustainable entrepreneurship, with a total of 412 valid cases; 15.3% of the students (63 cases) show a low level of perceived behavioral control. The relative majority corresponds to 56.3% of the students (232 cases) who have a medium level of behavioural control. While only 28.4% of the students (117 cases) reach high values in this variable. In conclusion, more than half of the sample (56.3%) perceives a moderate behavioural control to undertake in a sustainable way. And less than a third achieves a high sense of behavioural control and self-efficacy to execute this type of initiatives and projects. These results show that the perception of behavioural control towards sustainable entrepreneurship tends mostly towards medium levels among the university students in the sample.

Table 4. Perceived behavioral control.

		Frequency	Percentage	Valid percentage	Cumulative Percentage
VALID	LOW	63	15.3	15.3	15.3
	MEDIUM	232	56.3	56.3	71.6
	HIGH	117	28.4	28.4	100.0
	Total	412	100.0	100.0	

Source: Own elaboration.

The results of the reliability analysis using Cronbach's alpha (Table 5) indicate excellent internal consistency for the 52-item scale used ($\alpha = 0.979$). Considering that alpha values higher than 0.9 are indicative of excellent measurement reliability (Cortina, 1993), it is evident that the items that make up the scale are highly correlated and reliably measure the construct of interest. The fact that the standardized Cronbach's alpha has the same value (0.979) reinforces the previous conclusion, supporting that the reagents measure the theoretical construct in the same way and have comparable psychometric functions (Oviedo and Campo, 2005). The findings of the analysis support that the instrument used has optimal levels of reliability, which guarantee the precision of the measurement and the generalization of the results to the study context (Sijtsma, 2009). This supports the methodological rigor of the research and the validity of the inferences that can be formulated from the data collected with this instrument.

Tabla 5. Reliability Statistics.

Cronbach's Alpha	Cronbach's Alpha based on standardized items	Numbers of items
.979	.979	52

Source: Own elaboration.

Multiple linear regression model

For the general hypothesis, the following result is obtained from the linear regression model.

The R squared value (R^2) of the model is 0.647. This means that 64.7% of the variability/variation in the dependent variable (sustainable entrepreneurial intention) can be explained by the independent variables (attitude towards sustainable entrepreneurship, subjective norms and perceived behavioral control). That is, this group of 3 predictors explains almost 65% of the phenomenon being modeled, which indicates a very good level of fit of the model to the data (Table 6).

Table 6. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.804 ^a	.647	.644	2.91753
a. Predictors: (Constant), SUM PERCEIVEDCONTROLBEHAVIOR= PBC1+PBC2+PBC3+PBC4+PBC5+PBC6, SUM ATTITUDE TOWARDSTEMP=ATSE1+ATSE2, SUM SUBJECTIVE_NORMS=SN1+SN2+SN3				

Source: Own elaboration.

The adjusted R square, which penalizes the effect of adding explanatory variables, is almost the same (0.644). This reflects that each variable adds unique explanatory power, without redundancies. Finally, the R value of the correlation coefficient is 0.804. This shows that, in effect, there is a strong positive association between the independent variables and the dependent variable according to the data analyzed. In conclusion, the figures in the model summary indicate an excellent fit and a high degree of association between the study variables and entrepreneurial intention, confirming the hypotheses raised about their relationships.

The F statistic contrasts whether the total regression model is significant. A value of $F = 248.916$ and a significance of $p < 0.001$ were obtained. This indicates that the regression model with the 3 predictor variables is statistically significant for predicting the dependent variable. The results of the ANOVA indicate that the proposed multiple regression model has

a significant predictive capacity on the entrepreneurial intention of students, fulfilling statistical assumptions (table 7).

Table 7. Model ANOVA

Model		Sum of squares	df	Mean Squares	F	Sig.
1	Regression	6356.291	3	2118.764	248.916	.000 ^b
	Residual	3472.882	408	8.512		
	Total	9829.172	411			
a.		Dependent Variable:		SUM		
INTENTIONSOSTEMP=ISE1+ISE2+ISE3+ISE4+ISE5+ISE6						
b.		Predictors:		(Constant), SUM		
PERCEIVEDCONTROLBEHAVIOR=PBC1+PBC2+PBC3+PBC4+PBC5+PBC6						
, SUM ATTITUDE TOWARDSTEMP=ATSE1+ATSE2, SUM						
SUBJECTIVE_NORMS=SN1+SN2+SN3						

Source: Own elaboration.

The results found are relatively good, the three variables explain complementary issues about this entrepreneurial intention; that is, there is no overlap or redundancy in the information they provide (table 8). The exception is with the variable of behavioral control, which shows a certain similarity with the other two: attitude and subjective norms. This could be explored further in future studies. The variables investigated mostly add unique explanations about the phenomenon, without marked redundancies between them, fulfilling the requirements expected in these statistical models. In conclusion, the assumption of non-collinearity between the predictor variables according to the indicators is largely fulfilled, except between the CCP and the others. Additional analyses focused on this variable would have to be done. But in general the diagnoses are not unfavorable.

Table 8. Collinearity Diagnostics.

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	ATTITUDE TO WARDSTEMP	SUBJECTIVE _NORMS	PERCEIVED BEHAVIOURAL CONTROL
1	1	3.920	1.000	.00	.00	.00	.00
	2	.040	9.914	.03	.10	.04	.97
	3	.025	12.590	.91	.28	.04	.02
	4	.015	15.969	.05	.61	.91	.01

a. Dependent Variable: SUM INTENTIONSOSTEMP=ISE1+ISE2+ISE3+ISE4+ISE5+ISE6

Source: Own elaboration.

Hypothesis testing

As shown in the multiple linear regression, the three independent variables of attitude towards sustainable entrepreneurship, subjective norms and perceived behavioural control exert a direct and significant influence on the dependent variable of intentionality towards sustainable entrepreneurship in the student sample. In particular, it was found that attitude has the greatest effect with a Beta coefficient of 0.551 ($p < .001$), followed by subjective norms with a Beta of 0.271 ($p < .001$) and finally behavioural control with 0.103 ($p = .002$).

These results confirm the positive impact of each factor on the entrepreneurial intentionality initially formulated in the research. In this sense, once the general model has been verified, performing additional simple regression tests for the individual verification of the hypotheses becomes unnecessary since their influence has already been confirmed in the joint evaluation of predictors (Table 9).

Table 9. Model Coefficients.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Desv. Error	Beta			Tolerance	VIF
1	(Constant)	3.758	.791		4.748	.000		
	ATTITUDE TOWARDS SUST	1.486	.105	.551	14.189	.000	.574	1.742
	ATTITUDE TOWARDS SUST	.499	.073	.271	6.815	.000	.549	1.822
	PERCEIVED BEHAVIORAL CONTROL	.097	.031	.103	3.130	.002	.796	1.257

a. Dependent Variable: SUM INTENTIONSOSTEMP=ISE1+ISE2+ISE3+ISE4+ISE5+ISE6

Source: Own elaboration.

Discussion

The results obtained in this study show that 75.2% of the students analyzed have a high intentionality towards sustainable entrepreneurship, reflecting their willingness and interest in getting involved in these initiatives. These findings are consistent with the vision put forward by Benavides-Sánchez et al. (2022), who point out that in the last decade sustainable entrepreneurship has positioned itself as an innovative paradigm with the potential to significantly impact the achievement of the Sustainable Development Goals (SDGs).

The high intentionality of students towards sustainable entrepreneurship suggests that new generations are increasingly aware of the importance of developing projects, products, processes and services that integrate sustainability in its economic, social and environmental dimensions. This result supports the notion that sustainable entrepreneurship can be a key factor to help achieve the SDGs, as considered by the UN (2015) and as proposed by various authors (Filser et al., 2019).

In this sense, the findings of this study contribute to reinforce the idea that promoting sustainable entrepreneurship from university education can be an effective strategy to promote the development of business initiatives that contribute to the achievement of the 2030 Agenda. Likewise, these results open opportunities to deepen research on the factors that influence the sustainable entrepreneurial intention of students and how to enhance it from academia.

Likewise, the high positive attitude towards sustainable entrepreneurship in 76.5% of students supports the notion of Pitre et al. (2017) on the transformative capacity that entrepreneurship has in different communities in Colombia, where the need to strengthen this intention from schools is highlighted. In contrast, the moderate behavioral control perceived by more than half of the students (56.3%) seems to align with what was proposed by Chirinos et al. (2018) in relation to the contextual difficulties that entrepreneurs face in carrying out sustainable initiatives. Finally, the dispersion of results in the subjective norms oriented towards sustainable entrepreneurship shows the need mentioned by Chirinos and Pérez (2016) for strategies from universities to develop competencies and skills that promote this type of entrepreneurship.

Despite the contributions of this study, it is important to acknowledge some limitations. First, the research focused on a sample of students from a single university and major, which could limit the generalizability of the results to other contexts. Future studies could broaden the scope to different educational institutions and disciplines to obtain a more complete view of the phenomenon.

Second, the cross-sectional design of the study does not allow establishing causal relationships between variables. It would be valuable to conduct longitudinal research examining the evolution of sustainable entrepreneurial intention over time and exploring the factors that influence its materialization into actual entrepreneurial behaviors.

Furthermore, this study relied on self-report measures, which could be subject to social desirability biases. Future work could complement these findings with objective measures and third-party assessments to obtain a more complete perspective of sustainable entrepreneurial intention and its associated factors.

Despite these limitations, the results presented reflect evident progress in understanding the drivers of sustainable entrepreneurial intention in the university setting. However, there is still a long way to go to establish a cultural change that positions sustainable entrepreneurship as a central element in university curricula.

In summary, the findings reinforce some approaches to the opportunities and obstacles of sustainable entrepreneurship and the importance of strengthening entrepreneurial skills in young people, as highlighted by several authors. This supports the importance of further research in this field with a multidimensional approach, considering individual, educational and contextual variables that allow a deeper and more holistic understanding of this phenomenon.

Conclusions

The objective of this study was to analyze the factors that influence the intention to create sustainable ventures in students of the Bachelor's Degree in Administration at the University of Sonora. The results obtained allow us to answer the research questions posed and confirm the proposed hypothesis.

Regarding the level of intention to create sustainable entrepreneurship, it was found that 75.2% of the students had a high intention to get involved in this type of initiatives. This finding suggests that there is a favorable disposition among future administrators towards the creation of companies that integrate economic, social and environmental objectives.

Regarding the influence of attitudinal, normative and control factors, it was shown that the attitude towards sustainable entrepreneurship, subjective norms and perceived behavioral control have a positive and significant impact on the sustainable entrepreneurial intention of students. The multiple linear regression showed that these three variables together explain 64.7% of the variance in sustainable entrepreneurial intention, with attitude being the factor with the greatest relative weight.

These results confirm the hypothesis raised and support the relevance of considering psychological and social variables in understanding the drivers of sustainable entrepreneurial intention in the university context. Furthermore, the findings obtained contribute to filling the gaps identified in the literature by providing empirical evidence on the applicability of the Theory of Planned Behavior in the study of sustainable entrepreneurial intention.

The conclusions of this study have important practical implications for universities interested in fostering sustainable entrepreneurship among their students. The results suggest the need to design educational strategies that strengthen positive attitudes towards sustainable entrepreneurship, promote favorable social norms, and provide tools to increase the perception of entrepreneurial control and self-efficacy.

Concrete actions that universities could implement include incorporating content on sustainability and entrepreneurship in the curricula, developing extracurricular entrepreneurial training programs, creating networking and mentoring spaces, and promoting practical learning experiences based on projects and real challenges.

This study provides valuable evidence on the factors that influence university students' sustainable entrepreneurial intentions, and paves the way for future research that delves deeper into this topic from a multidimensional perspective. The findings presented are expected to serve as a basis for the design of educational policies and practices that effectively promote the development of entrepreneurial skills and attitudes aligned with the Sustainable Development Goals.

Future lines of research

This study opens up several opportunities for future research that will deepen our understanding of the factors that influence the sustainable entrepreneurial intention of university students. First, it is suggested that longitudinal studies be conducted to analyze the evolution of sustainable entrepreneurial intention throughout the educational trajectory of students, from their entry to the completion of their studies. This would provide a more complete view of how educational experiences and the development of entrepreneurial skills shape intentions toward sustainable entrepreneurship.

Second, it would be valuable to examine the role of demographic variables such as gender, age, socioeconomic level, and cultural context in sustainable entrepreneurial intention. This would allow us to identify possible differences and specific patterns based on these factors, providing relevant information for the design of more inclusive educational programs adapted to the needs of different student profiles.

It is also recommended to explore the impact of different educational methodologies and learning experiences in promoting sustainable entrepreneurial intention. This could include examining the effectiveness of approaches such as problem-based learning, experiential learning, mentoring, and entrepreneurial practices in developing competencies and attitudes favorable to sustainable entrepreneurship.

Another promising line of research focuses on studying the contextual and ecosystem factors that may influence students' sustainable entrepreneurial intentions. This would involve examining the role of elements such as public policies, availability of resources and

institutional support, networks of contacts, and local entrepreneurial culture in shaping sustainability-oriented entrepreneurial intentions and behavior.

Finally, it would be enriching to carry out comparative studies between different academic disciplines and areas of knowledge, in order to identify possible differences in sustainable entrepreneurial intention and the factors that influence it. This would allow for the design of more specific educational strategies adapted to the particularities of each field of study.

In summary, future research on this topic should adopt a multidimensional approach, considering individual, educational and contextual variables, as well as diverse methodological designs that allow a deeper and more holistic understanding of the drivers of sustainable entrepreneurial intention in the university environment. The findings of these studies will be fundamental to guide the development of educational policies and practices that effectively promote sustainable entrepreneurship as a driver of social, economic and environmental transformation.

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