

Unveiling the antecedents of sustainability-oriented entrepreneurial intentions in Angolan universities: Theory planned behavior extension proposal

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Abstract

Angola is one of the countries at the bottom of the ranking in achieving the Sustainable Development Goals (SDGs). Creating sustainable businesses can accelerate the achievement of the SDGs. The present study analyses the antecedents of sustainability-oriented entrepreneurial intention (SOEI) among Angolan higher education students. It starts from the relationships established by the Theory of Planned Behavior (TPB) that were adapted to the sustainable strand. New possible behavioural antecedents of SOEI were added. The Partial Least Square method was applied to a sample of 308 Angolan higher education students. The results show that the TPB dimensions can be adapted and used as antecedents of SOEI and that the TPB can be extended, comprising new antecedents of SOEI also related to individuals' behaviours such as risk-taking propensity, internal locus of control, creativity and proactivity. These unknown antecedents can be taught, learned and stimulated, with universities, policymakers and organisations playing a pivotal role.

Keywords

Sustainable entrepreneurship, sustainability-oriented entrepreneurial intentions, perceived creativity, proactive personality, risk-taking propensity, theory of planned behavior

Introduction

Due to the problems such as global warming, a large amount of waste, loss of natural habitats, desertification and deforestation, ozone layer depletion (Adrita and Mohiuddin, 2020, Pankov et al., 2021) combined with quick economic development and the overuse of natural resources, the environment is becoming more and more degraded, attracting international attention (Lopes et al., Taufique and Vaithianathan, 2018). As a result, many companies no longer operate with an exclusive focus on maximising profit or simply complying with the law (Wang et al., 2018) but are increasingly focused on implementing environmental protection and improvement policies and improving the use of natural resources (Dicunzo et al., 2020).

In this framework, they have seen incentives to raise awareness on sustainability-oriented issues. For this, careful monitoring of the entire value chain is crucial. For “born sustainable companies”, it is expected that they will decide, from the moment of their incorporation, to build a business model based on sustainability (Todeschini et al., 2017).

Thus, sustainable entrepreneurship emerges, aiming to transform and endow businesses with sustainable practices.

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It starts with market analysis, where companies identify unmet needs, creating business opportunities (Prestwich et al., 2012). Those who develop sustainable entrepreneurship are called sustainable entrepreneurs, and they are the ones who seek to find a balance between community, environment and financial goals (Shepherd and Patzelt, 2011, Yasir et al., 2021a). Entrepreneurs play a key role in progressing and transitioning towards a circular, or greener, economy (Veleva and Bodkin, 2018) through the integration of dynamic and external entrepreneurial skills. (Singh et al., 2020).

Universities are the main partners in teaching and encouraging environmentally friendly behaviours and introducing sustainable entrepreneurship (Parrish, 2010) to those who will be future entrepreneurs. Environmental education is key to understanding high-level ecological concerns. Individuals with an environmental education are more motivated to improve the environment because education increases awareness about potential environmental damage (Hockerts and Wüstenhagen, 2010), resulting in sustainable and environmentally friendly solutions (Adrita and Mohiuddin, 2020, Singh et al., 2020).

Despite the above indicated, a few studies address entrepreneurial intention focused on sustainability (Munar et al., 2021, Yasir et al., 2021a). The majority of the studies are based on conventional entrepreneurial intention (Araya-Pizarro, 2021, Gómez-Araujo and Bayon, 2017). Furthermore, it is found that the role of universities as motivators of valid sustainability-oriented entrepreneurial attitudes is still scarce, and student behaviour change is unproven (Dierkes and Von Grote, 2005). mainly due to students' preliminary beliefs (Katz, 1960).

Based on this context, the present paper analyses the antecedents of sustainable entrepreneurial intention among higher education students in Angola. It starts from the relationships established by the TPB adapted for the sustainable strand and analyses four additional possible antecedents (risk-taking propensity, perceived creativity, proactive personality and internal locus control) of sustainable entrepreneurial intention. Angola is the African country with the highest rate of business creation measured by the Total Early-Stage Entrepreneurial Activity (TEA), presenting a rate of 49.6% in 2020 (GEM, 2021). However, Angola is at the bottom of the world ranking of compliance with the Sustainable Development Goals (SDGS), occupying the 154th position of 163 countries. (Sachs et al., 2022). Besides, the PwC (2021) report showed that sustainability concerns are still low in corporate reports. In this context, we believe that an entrepreneurial intention oriented towards sustainability will help Angola meet the goals defined in the 2030 Agenda by creating new companies with sustainable practices, job creation and the fight against social inequality and poverty.

Literature review

Sustainability-oriented entrepreneurship

Sustainable development is development that meets the needs of the current generation without compromising the satisfaction of the needs of future generations (Brundtland, 1985). It is a broad concept and an overarching development goal, encompassing multiple dimensions, approaches and elements (Husgafvel, 2021). When mentioning the organisational capacity in the scope of sustainability, it evokes the capacity that companies have to contribute to the sustainable development of the society where they are inserted. Therefore, establishing strong local relations is fundamental (Niehm et al., 2008). As sustainability is a challenge at an ethical level, it has significant effects on investment and the local economy, as well as being a crucial strategy to develop the company's image with consumers, making them gain value in relation to their competitors (Fletcher, 2013).

Within the business market, we find companies already inserted in the market and others that have just been "born," constituted. Since their constitution, we understand sustainable born companies as those companies that chose to build a business model based on principles of sustainability (Todeschini et al., 2017). In the case of already existing companies that choose to implement sustainable business models, it is extremely important that these companies are aware that it is necessary to closely monitor the entire value chain, claiming stakeholder responsibility and also to ensure an entrepreneurial intention based on product and process innovation (Fauchart and Gruber, 2011). In both cases, the resource-based view (RBV) theory is applied, which emphasises the centrality of organisational skills and resources in implementing a competitive business strategy (Anjum et al., 2021, Olavarrieta and Friedmann, 2008), especially in small and medium enterprises (Leonidou et al., 2017). Thus arise the changes at the organisational level that require a culture centered on environmental awareness (Masurel, 2007). These resources are significant for formulating green strategies (Sharma et al., 2007). In addition, confirming these capabilities, the NRBV (natural resource-based view theory), sustainable development, product management and pollution prevention are tools for improving the efficiency and competitiveness of enterprises (Anjum et al., 2021, Hart, 1995).

Development of hypotheses

Theory of planned behaviour (TPB). One of the highly used theories to explain the factors that lead individuals to adopt certain behaviours in different contexts, from biological, dietary, psychological, and even sustainable, is the TPB (Munar et al., 2021). The TPB assumes that an individual's intention to perform a certain behaviour is related to his

estimation and evaluation of expected outcomes and his willingness to respect the opinions and perspectives of other individuals or groups on the behaviour (Davidson et al., 2007).

TPB argues that business intentions determine entrepreneurial behaviour. Ajzen (1991) It argues that a planned behaviour is highly likely to happen if there is a strong intention to engage in it. According to TPB, intention depends on attitude, subjective norm and control over the behaviour that the individual perceives. Ajzen (1991) establishes that any behaviour requires a certain level of planning, which may be preceded by the intention to adopt said behaviour. Thus, the decision-making process can be considered a motivated or planned behaviour, with a strong relationship between intentions and actions. According to TPB, individuals should be rational and systematically use the information available to them to make decisions (Churchill et al., 2008, Gamal Aboelmaged, 2010).

Attitude toward sustainable entrepreneurship (ATSE). Intention is defined as an individual's specific predisposition to perform a single act or a sequence of acts (Clark and Ramachandran, 2019, Yasir et al., 2021b). As for the motivational approach, entrepreneurial intention can be described as the process that precedes the performance of the action. Attitude towards intention addresses the motivational approach and is associated with beliefs about the likely consequences of a particular behaviour. Despite this, Bosma et al. (2016) estimate that the total number of adults who work in companies and enterprises for purposes other than financial benefit is relatively low. One reason is the personal benefit gained from pursuing success with sustainable intentions. These personal principles will affect individuals' decisions on whether or not to participate in sustainable activities in entrepreneurship (Krueger et al., 2000, Romero-Colmenares and Reyes-Rodríguez, 2022, Vuorio et al., 2018). Unfortunately, the perception of the effect of these issues on an individual's intention to become a sustainable entrepreneur is, at the moment, minimal (Yasir et al., 2021b). Recognising opportunities is the first step toward entrepreneurship and sustainability (Amjad et al., 2020).

H1: A positive attitude of Angolan higher education students towards sustainable entrepreneurship tends to influence sustainability-oriented entrepreneurial intention positively.

Perceived behavior control (PBC)

The perception of behavioural control is related to factors that facilitate the development of the entrepreneurial activity. These factors cause a greater predisposition to perform that behaviour, in the specific case of entrepreneurship

(Ruiz-Rosa et al., 2020). The perceived behavioural control is directly related to the performance and perceived ability to perform a particular task, presented as the individual's self-efficacy (Krueger, 2007). It is considered that the perception of each entrepreneur is their individual ability to perform a certain action, which will lead to their awareness and will significantly influence the intention to perform such action, which can be mirrored by the positive influence of the perceived behavior on the entrepreneurial intention of the entrepreneur. individual (Gomes et al., 2021).

H2: Higher levels of perceived control behaviour among Angolan higher education students tend to influence sustainability-oriented entrepreneurial intention positively.

Subjective norms (SN)

Subjective norms are one of the three components that explain entrepreneur intention and behaviour (Ajzen, 1991). Subjective norms relate to the perceived social pressure to realise or not realise a certain intention. Subjective norms, refer to individuals' perceptions of how individuals influence their lives, whether or not to engage in a particular behaviour, in this case, starting a business (Kautonen et al., 2013, Lopes et al., 2021). TPB, posits that subjective norm or perceived social pressure has two components: motivation and normative beliefs to comply with these beliefs. The first relates to the likelihood of influencers approving or disapproving of individuals' behaviour. The second component is associated with individuals' willingness to comply with these standards, which involves behaving following the expectations of influential others (Ajzen, 1991, Gomes et al., 2021).

H3: Subjective positive norms of Angolan higher education students tend to influence sustainability-oriented entrepreneurial intention positively.

Risk-taking propensity (RTP). The decision of entrepreneurs to set up a business is considered a risk since the insolvency rate of new businesses is substantial (Antoncic, 2011). Entrepreneurs take different risks (psychological, social and financial) when creating new businesses (Antoncic and Hisrich, 2003). An individual's propensity to take risks may not be a very stable characteristic and tends to vary depending on the context (Antoncic, 2011). Less risk-averse individuals tend to grow to be entrepreneurs, and more risk-averse individuals tend to become employees, taking into account the assumption of economic rationality in the individual's behaviour (Kihlstrom and Laffont, 1979). Risk should not be approached as an enduring psychological characteristic (trait) but may be related to entrepreneurial behaviour (Brockhaus, 1980).

H4: Higher risk-taking propensity among Angolan higher education students tend to influence sustainability-oriented entrepreneurial intention positively.

Perceived creativity (PC). Creativity is the capacity to think, discover, transform and create. Seeking and discovering new opportunities depends on the individual's ability to recognize and understand the links between ideas (Batchelor and Burch, 2012). This concept also applies to the entrepreneurial process, where the entrepreneur must have creative skills in order to identify and explore opportunities that lead him to start a new business. Hamidi et al. (2008), by introducing creativity into the entrepreneurial intention model, found a positive link between creativity and entrepreneurial intention. According to Sarooghi et al. (2015), non-entrepreneurs are less creative than entrepreneurs. Similarly, for Hamidi et al. (2008), the greater the perceived creativity of individuals, the greater the entrepreneurial intention. Feldman and Bolino (2000) and Anjum et al. (2021) argue that individuals with a higher level of creative disposition are more disposed to create self-employment.

H5: Higher levels of perceived creativity among Angolan higher education students tend to influence sustainability-oriented entrepreneurial intention positively.

Proactive personality (PP). The proactive personality has been linked to entrepreneurial activity, as entrepreneurs intentionally assess the external environment and identify evolving hypotheses for the implementation of innovative ventures (Rauch and Frese, 2007). Previous research provides empirical evidence that proactivity influences entrepreneurial intention in a positive and significant way (Parker and Bindl, 2016). According to Naz et al. (2020) propose that individuals' proactivity is strongly connected to several types of entrepreneurial behaviors such as number of ventures, legal form of ownership and business introduction.

H6: Higher levels of proactive personality among Angolan higher education students tend to influence sustainability-oriented entrepreneurial intention positively.

Internal locus control (ILC). Comparing entrepreneurship in young people with those in the rest of the population, young people are more probable to be entrepreneurs (Munar et al., 2021, Lopes et al., 2021). Bonnett and Furnham (1991) explain that individuals with a higher internal locus of control tend to develop entrepreneurial attitudes more easily. Similarly, Río-Rama et al. (2016) propose that the ability of young people to learn, change and accept business challenges tends to be much greater than in older

individuals. Furthermore, as individuals age, creating a new business is less desirable because risk aversion increases with age (Kautonen et al., 2014, Lévesque and Minniti, 2006, Patuelli et al., 2020).

H7: Higher levels of internal locus control among Angolan higher education students tend to influence sustainability-oriented entrepreneurial intention positively.

In this context, Figure 1 shows the research model of this research.

Methods

Participants and measures

Considering the objective of this study and the proposed research model, a quantitative methodology was used. According to Oliveira (2011), this methodology consists of validating hypotheses using structured, statistical data, allowing for an analysis of several representative cases. It is a methodology that stands out for its reliability, objectivity, ease of coding and quantifying the results (Bonache, 1999).

The questionnaire applied was adapted from Fatoki (2020). This questionnaire aimed to collect responses from higher education students in Angola and was disseminated between 26 October 2021 and 31 May 2022. The questionnaire was anonymous, and students' participation was voluntary. Informed consent was obtained from all participants in the first question of the questionnaire ("Informed consent: I agree to participate in this study"). The authors' Facebook and Twitter accounts contacted the Angolan higher education students, and 308 valid responses were collected.

The questionnaire is composed of seven groups of questions, in addition to the questions related to the socio-demographic characterisation of students: (G1) Attitude toward sustainable entrepreneurship with seven questions; (G2) Perceived Control Behavior with three questions; (G3) Subjective norms with five questions; (G4) Risk-Taking Propensity with seven questions; (G5) Perceived creativity with three questions; (G6) Proactive Personality with six questions and (G7) Internal Local Control with two questions. All responses were measured on a 5-point Likert scale.

In terms of characterisation of the sample participants, 51% are women. The average age of students is 25.4 years old, with 54.5% being between 18 and 23 years old, 20.8% between 24 and 27 years old and 24.7% at least 28 years old. According to Jacob (2018), the average age of Angolan students attending higher education is high due to the existence of high-grade failures and/or dropouts throughout the school career and, on the other hand, the late access of students to higher education that over the years have been left out of the system as a result of the reduced number of

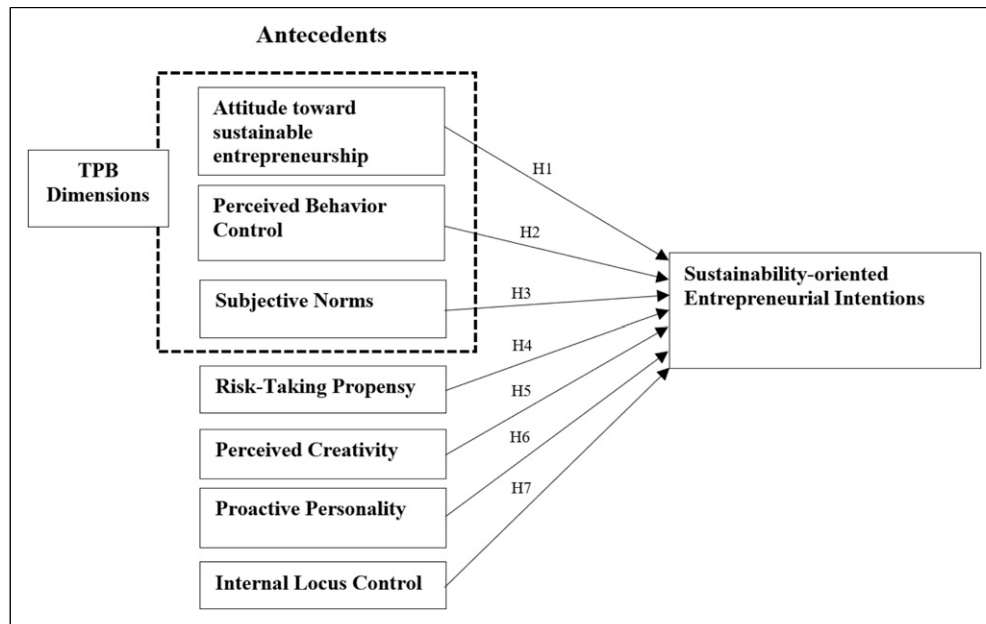


Figure 1. Research model.

vacancies by the most varied institutions of teaching, and who eventually managed to enter the system later. They began their studies in higher education between the years 2012 and 2021 and are mostly undergraduate students (87%) in the areas of business sciences (25.3%), health (24.7%) and law (10.4%). Regarding residence in Angola, 57.8% reside in Luanda, 33.8% in Huambo and 8.4% in other cities.

Methodology

The quantitative methodology applied in this study was carried out in two stages. In the first stage, a descriptive analysis of the antecedents of SOEI was carried out using SPSSv25.0. In the second stage, the Partial Least Square (PLS) method was applied in SmartPLS 3.0 to test the hypotheses formulated in the structural model. Based on Ringle et al. (2020), The application of the PLS method is justified by the fact that this method does not require data normality (a normality test was performed on the data collected in SPSS and confirmed that they do not have a normal distribution) and that it allows establishing multiple relationships between the constructs and the items collected, as well as between constructs. This method combines factor analysis with linear regression estimated using the Ordinary Least Squares (OLS) method.

Results

Descriptive analysis

Table 1 shows the statistical analysis of the variables used in the structural model. Given the scale of the answers (1 to 5),

we may conclude, in average terms, that the participants agree ($M > 3$) with all the items assessed. The dependent variable SOEI presents a mean value of 3.94. Concerning the antecedents of sustainable entrepreneurial intention, on average, the most valued was attitude toward sustainable entrepreneurship (ATSE) ($M = 4.36$), followed by Perceived Creativity (PC) ($M = 4.28$), and Proactive Personality (PP) ($M = 4.27$). The least valued antecedent was Subjective Norms (SN) ($M = 3.46$).

Evaluation of PLS model

In the second stage, the PLS method was applied to the research model and processed in two stages: (1) application of logarithmic PLS and (2) bootstrapping analysis.

The PLS logarithm's result to the structural model is given in Appendix. The PLS model obtained was validated as Hair et al. (2019) proposed in terms of reliability. For this purpose, Cronbach's Alpha ($C\alpha > 0.70$), Composite Reliability ($CR > 0.70$) and Average Variance Extracted ($AVE > 0.50$) were used. The Fornell-Larcker criterion was also applied to assess the discriminant validity of the variables. The results of these measures are shown in Table 2. The measures of $C\alpha$, CR and AVE , are higher than the reference values, and as such, the model is reliable, and the model is convergent. By the Fornell-Larcker criterion, we can also conclude that there is discriminant validity. The model also presents good fit (Chi-Square= 0.087; Goodness-of-Fit: 0.912; Comparative Fit Index: 0.888; Standard Root Mean Square Residual: 0.092).

Table 1. Statistical description of the variables.

	Mean	Std. Deviation
Sustainability-oriented entrepreneurial intentions (SOEI)	3.94	1.270
Attitude toward sustainable entrepreneurship (ATSE)	4.36	0.987
Perceived control behavior (PCB)	3.66	1.278
Subjective norms (SN)	3.46	1.494
Risk-taking Propensity (RTP)	4.06	1.079
Perceived creativity (PC)	4.28	0.985
Proactive personality (PP)	4.27	0.970
Internal locus control (ILC)	4.20	0.975

Note: $n = 308$.

The bootstrapping analysis applies to estimating the relations established between the dependent and independent variables by the OLS method. The results are shown in [Figure 2](#), and all variables are significant for a 95% confidence level.

The results show a significant positive influence of all the proposed antecedents on Sustainability-oriented entrepreneurial intentions (SOEI), confirming Hypotheses one to 7. This means that adapting the antecedents of sustainability-oriented entrepreneurial intention (ATSE, PCB and SN) continues to demonstrate the relationship predicted by TPB with SOEI. However, the antecedents have different impacts on SOEI. Perceived Control Behavior is the antecedent with a greater influence on SOEI ($\beta = 0.381$), followed by Proactive Personality ($\beta = 0.214$) and then the two other antecedents predicted by TPB (ATSE and SN). The antecedents RTP, PC and ILC have a lower influence on sustainability-oriented entrepreneurial intention ($\beta = 0.031$, $\beta = 0.07$ and $\beta = 0.074$, respectively).

Discussion and implications

Discussion of results

Entrepreneurs play an essential role in the progress and the transition to a sustainable, or greener, economy ([Veleva and Bodkin, 2018](#), [Singh et al., 2020](#)). To achieve an increasingly sustainable economy, companies play a key role. Companies have sustainable objectives specified in the 2030 Agenda. Entrepreneurship through job creation and its contribution to economic growth, promote SDG 8 - "Promote inclusive and sustainable economic growth, full and productive employment and decent work for all". Angola still has a long way to go in terms of sustainability. However, the rate of entrepreneurial activity is high. Combining Angola's fragility with the existing entrepreneurial opportunity in this country, it becomes pertinent that entrepreneurship is oriented towards sustainability, with the need to know the drivers that may precede SOEI.

This study found that there is a significant positive relationship between the attitude toward sustainable entrepreneurship of Angolan higher education students and their sustainability-oriented entrepreneurial intention. This means that when arousing the desire to undertake entrepreneurship, Angolan students pay attention to beliefs about the likely consequences of certain behaviour. According to [Vuorio et al. \(2018\)](#) and [Krueger et al. \(2000\)](#), these personal beliefs will affect an individual's decision on whether or not to participate in sustainable activities in entrepreneurship. Thus, it is crucial to building a business environment that is conducive to sustainable entrepreneurship. This environment can be created through incentives for entrepreneurship, tax benefits, and state participation in business, thus creating new business opportunities. According to [Amjad et al. \(2020\)](#), attitudes are the first step for entrepreneurship to become more and more sustainable.

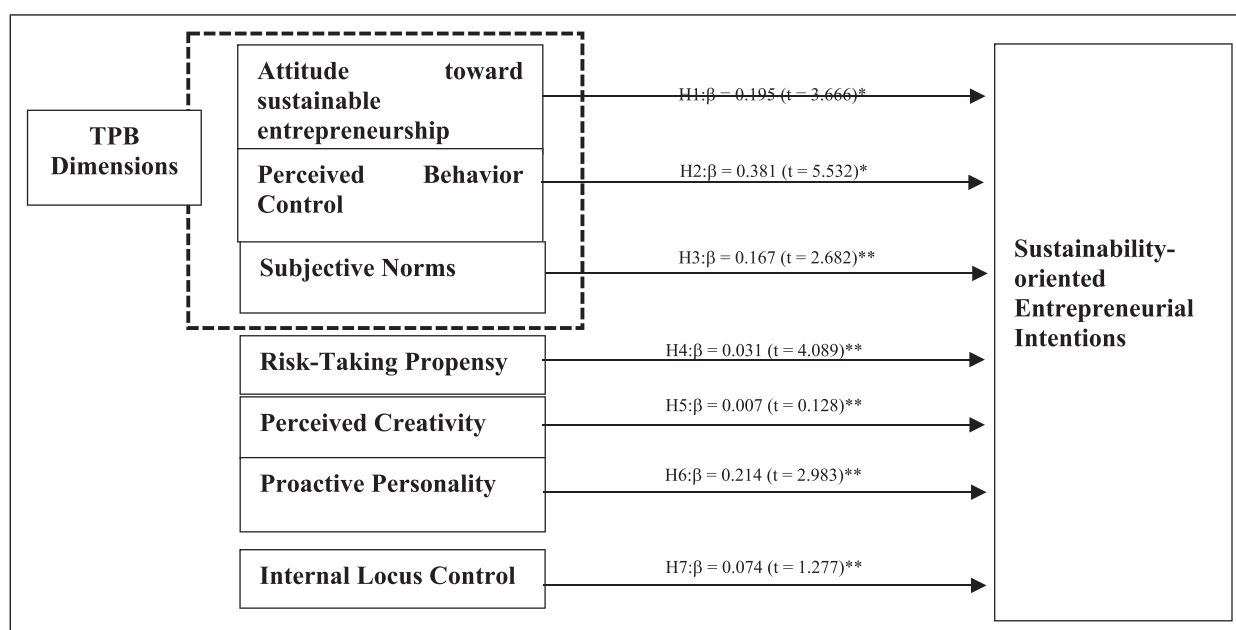
It was also found that there is a significant positive relationship between the perceived control behaviour of Angolan higher education students and their sustainability-oriented entrepreneurial intention. This finding means that the higher the university students' perceived control of their entrepreneurial activity, the higher their willingness to engage in sustainable businesses. Thus, it is economic and political stability that reinforces young students' sense of security, as well as training at different levels, so that they can effectively develop their ventures and the perception of control is greater ([Gomes et al., 2022](#), [Ruiz-Rosa et al., 2020](#)).

The study points to a positive relationship between the subjective norms of Angolan higher education students and their sustainability-oriented entrepreneurial intention. Thus, the ideals and principles held by the individuals influential in the lives of university students directly affect their intention to engage in sustainable businesses. It is crucial to educate or raise awareness among young students; however, it is also important to raise awareness in society. Society can exert a direct influence (positive or negative), on the intention to set up a sustainable enterprise ([Yasir et al., 2022](#), [Ramlal and Chiweshe, 2022](#)).

Table 2. Evaluation of the PLS model.

	Ca	CR	AVE	SOEI	ATSE	PCB	SN	RTP	PC	PP	ILC
Sustainability-oriented entrepreneurial intentions (SOEI)	0.940	0.962	0.894	0.945							
Attitude toward sustainable entrepreneurship (ATSE)	0.731	0.812	0.524	0.481	0.724						
Perceived behavioural control (PCB)	0.776	0.868	0.690	0.622	0.366	0.831					
Subjective norms (SN)	0.858	0.899	0.644	0.544	0.520	0.587	0.802				
Risk-taking propensity (RTP)	0.720	0.796	0.566	0.398	0.288	0.377	0.300	0.752			
Perceived creativity (PC)	0.770	0.867	0.685	0.395	0.288	0.404	0.317	0.611	0.828		
Proactive personality (PP)	0.789	0.849	0.588	0.472	0.325	0.424	0.285	0.692	0.652	0.767	
Internal locus of control (ILC)	0.754	0.824	0.541	0.334	0.277	0.455	0.274	0.466	0.457	0.547	0.736

Note: AVE Square Root in bold: $n = 308$.

**Figure 2.** Bootstrapping analysis. Note: * $p = 0.000$; ** $p < 0.005$.

There is also a positive relationship between the risk-taking propensity of Angolan higher education students and their sustainability-oriented entrepreneurial intention. This means that the more willing students are to take risks, the higher their intention to engage in sustainable businesses. It is important to highlight that only the action of creating a business is considered a risk since the insolvency rate of new enterprises is substantial (Antoncic, 2011). Thus, it is essential to raise awareness among young people about the need to take risks when starting a business oriented towards sustainability. The propensity or aversion to taking risks is a personality trait that can be altered according to different factors and contexts (Fatoki, 2020, Hoogendoorn et al., 2019).

This study also gauged that there is a positive relationship between the perceived creativity of Angolan higher

education students and their sustainability-oriented entrepreneurial intention. Thus, the more creative students are, the more oriented towards sustainable entrepreneurship they will be. Creativity is a fundamental characteristic during the entrepreneurial process since it will be applied in identifying and exploiting opportunities, thus satisfying existing needs and filling existing gaps in the market. According to Sarooghi et al. (2015), entrepreneurs tend to be more creative than non-entrepreneurs. However, this personality trait may come to be built through training. Hamidi et al. (2008) and Anjum et al. (2021) indicate that the more creativity individuals have, the more likely they are to become entrepreneurs.

It was found that there is a positive relationship between the proactive personality of Angolan higher education students and their entrepreneurial intention towards

sustainability. This means that the proactive personality trait of Angolan university students influences their intention to undertake a sustainability-oriented business. The more proactive the student is, the greater their intention to become an entrepreneur will be. Proactivity is directly related to the ability to identify an unmet need, i.e. a market gap, and turn this into a business opportunity. These results are in line with the study developed by [Naz et al. \(2020\)](#) and [Parker and Bindl \(2016\)](#) in which they propose that the extent of a given individual's proactivity is linked to several types of entrepreneurial behaviour (e.g. business introduction, number of ventures, legal form of ownership, among others).

Finally, this study identified a positive relationship between Angolan higher education student's internal locus of control and their sustainability-oriented entrepreneurial intention. The internal locus of control represents to the individual's perspective on the extent to which their outcomes are under internal control (e.g. personal effort, competence). According to [Munar et al. \(2021\)](#) When comparing youth entrepreneurship with the rest of the population, the authors state that young people are more inclined to be entrepreneurs due to several factors such as easier start-ups, less fear of failure and social stigma, the lower opportunity cost of setting up a business, and lower perceived risk. However, [Borges et al. \(2021\)](#) state that the older higher education students are, the more likely they are to choose entrepreneurship as their first option to enter the labour market.

Implications for theory and practical implications

One of the widely used theories to explain the factors that lead individuals to adopt certain behaviours, including sustainability-oriented behaviours, is the TPB. Thus, the present study contributes to sustainable entrepreneurial intention (SOEI) literature. It first presents evidence on how the various components of TPB (e.g. subjective norm, behavioural control and attitude) influence university students' intention to undertake sustainably. Another contribution to the literature is identifying and validating other factors associated with the student's personality that influence entrepreneurial intention, such as perceived risk, locus of internal control, creativity and proactivity. A third contribution is that this study was conducted in Angola, representing an advance not only in the literature in this country but also in developing countries since there has been an urgent call for research on sustainable entrepreneurship beyond that already existing in developed countries.

With regard to practical implications, creating sustainable companies is a great benefit for the environment and for organizations, contributing to achieving the SDGs. Companies created to solve current sustainability problems will not need to reinvent themselves and incur high financial expenses to adapt their business model to the impositions

imposed by the 2030 Agenda. It should be noted that sustainability is an action that requires a partnership between consumers and companies. Thus, for their success, educating the consumer about existing environmental problems and how they can contribute to mitigating them is essential. By making the purchase more conscious, the consumer is willing to pay more for green products, which can increase companies' profit margin. The responsibility to educate the consumer lies with policymakers, educational institutions and companies.

At the societal level, and following on from what was previously indicated, this study points to the need to raise the population's awareness, not only from an environmental standpoint but also on the importance and way of dealing with business failure, which is directly linked to the locus of internal control, which affects the intention to undertake sustainable businesses. The way the entrepreneur is perceived by society when closing a business can be a conditioning factor in the decision to undertake. It is also fundamental that individuals influence groups and society generally believes in entrepreneurship to influence future entrepreneurs positively. Therefore, it is considered necessary to implement curricular education units that raise environmental awareness from an early age. This measure will only have an effect in the long term.

In addition, this study shows that certain antecedents of sustainable entrepreneurship intention can be learned and developed, such as proactivity, creativity and sensitivity to risk-taking. For that, it is necessary that universities promote this type of skills in their students by using classroom guides on the process of business creation, business idea competitions, and encouraging the exploration of sustainable entrepreneurship topics, among others. On the other hand, the role of policy makers is to promote sustainable entrepreneurship as a competitive and innovative strategy for business and not just as a result of a set of imposed norms and sustainable measures. By demonstrating that the creation of sustainable businesses can be an added value for entrepreneurs and by encouraging and supporting them in this type of entrepreneurship, they are promoting economic growth, employment and decent work, in accordance with the recommendations of the SDG 8.

Limitations and future lines of research

As a limitation of the study, data were collected through the completion of an electronic questionnaire. However, it was found that many students in Angola have difficulty accessing the internet and understanding the questionnaire, despite the pre-test carried out to understand the content of the questionnaire. This resulted in a smaller sample size, and it is suggested that a larger number of answers be collected in a future study. Future researchers may try to use other methods of response collection (e.g. going in person to a

higher education institution and collecting responses on paper). It would be interesting to further assess sustainable entrepreneurial intention in different regions of Angola, identifying potential differences. The moderating effect of gender on sustainable entrepreneurial intention was not considered in this study but could be included in future studies. In this study, the relationship between intention and actual action was not analysed, which is a limitation of entrepreneurial intention studies, that is, the fact that certain factors are identified as influencing entrepreneurial intention does not mean that this predisposition (intention) will materialise. However, it is an important starting point for future and real intention in behavioural studies within sustainable entrepreneurship. We also leave a research question that was impossible to assess with this study: Are there differences in sustainable entrepreneurial intention when compared to non-sustainable entrepreneurial intention? Finally, in future studies, it would be interesting to assess how sustainable entrepreneurial businesses are taking into account the requirements imposed by the 2030 Agenda and taking the SDGs into account in their business model.

Conclusion

The present study analyses the antecedents of sustainable entrepreneurial intention in Angolan higher education students. We started from the TPB's relationships that were adapted for the sustainable strand and added four possible antecedents (risk-taking propensity, perceptual creativity, proactive personality and internal locus control) of sustainable entrepreneurial intention.

The results show a positive influence of the antecedents proposed by the TPB modified for sustainability in SOEI. We also conclude that TPB can be extended to new antecedents (risk-taking propensity, locus of internal control, creativity and proactivity) as they relate to individuals' behaviours (acquired or being acquired), these antecedents also having a positive influence on SOEI. These antecedents can and should be encouraged and boosted by education, public policies that promote entrepreneurial sustainability, and companies adopting these practices in their business models.

This study contributes to developing the TPB literature within SOEI and is particularly interesting to universities, students, policymakers, businesses and society for the practical implications inferred. In addition, the results demonstrate that the culture where the entrepreneur is inserted plays an important role in creating sustainable businesses due to the beliefs that the entrepreneur's influence groups have. It was possible to identify several personality traits that directly influence entrepreneurial intention that can be taught, learned and stimulated, such as creativity, proactivity, locus of internal control and the propensity to take risks. Universities, companies and public policy makers have a key strategic role in raising awareness

of the need to create sustainable businesses that contribute to job creation, economic growth and achieving the SDGs.

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Appendix

PLs model

