





## Article

# Sustainable Entrepreneurship: Key Competencies Determining Entrepreneurial Intention in Peruvian Secondary Students

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**Abstract:** In the current global context, characterized by increasing competitiveness and dynamism, entrepreneurship has emerged as a fundamental driver of economic development and job creation. This study aims to compare the levels of entrepreneurial competence and intention among fifth-year high school students in Chepén and Pacasmayo, Peru, as well as to identify the key entrepreneurial competencies that significantly influence entrepreneurial intention. Additionally, it seeks to examine the moderating roles of self-assessed entrepreneurial capabilities and perceived risk in starting a business on the relationship between competencies and entrepreneurial intention. Additionally, it seeks to examine the moderating role of self-assessment of entrepreneurial capabilities and the perception of risk in starting a business in the relationship between competencies and entrepreneurial intention. The study is based on Ajzen's theory of planned behavior. The sample included 305 students, divided between 205 from Chepén and 100 from Pacasmayo, who participated in a structured survey. The results of the structural equation modeling (SEM) analysis revealed that creativity, risk-taking, and initiative significantly influence students' entrepreneurial intentions. However, competencies such as problem solving, networking, achievement orientation, teamwork, and autonomy did not show significant relationships with entrepreneurial intention. Moreover, neither the self-assessment of entrepreneurial capability nor the perception of the risk of starting a business had significant moderating effects on the relationship between entrepreneurial competence and intention. The discussion highlights that these findings contribute to understanding the psychological mechanisms underlying the formation of entrepreneurial intentions among high school students and offer valuable guidance for designing educational programs that enhance key entrepreneurial competencies. In conclusion, this study represents a significant advancement in comprehending the role of entrepreneurial competencies in shaping entrepreneurial intentions among secondary school students and opens new avenues for future research in this field.



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## 1. Introduction

In the current global context, characterized by increasing competitiveness and dynamism, entrepreneurship has emerged as a fundamental driver of economic development and job creation [1]. Despite efforts by governments and educational institutions to foster an entrepreneurial culture, significant gaps persist in the formation of entrepreneurial competencies and the intention to undertake them, especially among young students [2]. This problem is reflected in various international studies, which indicate that while there is growing interest in entrepreneurship, many young people lack the skills and knowledge necessary to turn their ideas into sustainable businesses [3].

In Peru, according to data from the Global Entrepreneurship Monitor (GEM), the early-stage entrepreneurial activity rate (TEA) reached 22.3% in 2019. However, these figures do not necessarily reflect the quality and sustainability of these ventures or the competencies and motivations that drive them [4]. Moreover, recent studies have identified a series of barriers that limit the entrepreneurial potential of young Peruvians, such as a lack of access to financing, insufficient training in business skills, and the perception of an unfavorable environment for entrepreneurship [5,6].

This reality is exacerbated by regional disparities in the country, where rural areas and remote provinces face greater challenges in developing an entrepreneurial culture [7]. In this sense, it is crucial to analyze the differences in entrepreneurial competencies and intentions among students from different regions to design contextualized and effective educational strategies [8].

Considering this scenario, a question arises about the role of entrepreneurial competencies in the formation of the intention to undertake high school, particularly in the provinces of Chepén and Pacasmayo. It is worth asking whether there are significant differences between the two groups in terms of their levels of entrepreneurial competence and intentions and what factors influence this relationship and how they can be addressed from an educational perspective.

The purpose of this study is to compare the levels of entrepreneurial competence and intention among fifth-year high school students in Chepén and Pacasmayo, Peru, and to identify the key entrepreneurial competencies that significantly influence entrepreneurial intention. Additionally, this study aims to examine the moderating roles of self-assessed entrepreneurial capabilities and perceived risk in starting a business on the relationship between entrepreneurial competencies and intention.

Based on these considerations, the present study has the following objectives: To compare the level of entrepreneurial competence among fifth-year high school students in Chepén and Pacasmayo, to compare the level of entrepreneurial intention among fifth-year high school students in Chepén and Pacasmayo, to identify the entrepreneurial competencies that significantly influence entrepreneurial intention, and to examine the moderating role of self-assessment of entrepreneurial capabilities and the perception of risk in starting a business in the relationship between competencies and entrepreneurial intention.

This study makes several novel contributions to the field of entrepreneurial education. Firstly, it specifically focuses on high school students in Peru, a demographic group and geographical context that has been understudied in the literature on entrepreneurial intention. Most previous research has centered on university students or established entrepreneurs, overlooking the crucial stage of adolescence where key attitudes and skills for future professional development are formed [9,10]. Secondly, this study compares two distinct provinces (Chepén and Pacasmayo), allowing for the identification of possible regional disparities in the formation of entrepreneurial competencies and intentions, an aspect little explored in previous studies. Furthermore, this study examines not only the relationship between competencies and entrepreneurial intention but also the moderating role of self-assessment of entrepreneurial capabilities and risk perception, thus providing a more nuanced understanding of the factors influencing the formation of entrepreneurial intention. Finally, the results of this study have the potential to inform the design of more effective and contextualized educational programs, tailored to the specific needs of high school students in different regions of Peru, thus contributing to the development of a sustainable entrepreneurial culture from an early age.

This research is justified by its social and practical relevance, as it seeks to generate knowledge that contributes to improving entrepreneurial education at the high school level, equipping students with the necessary competencies to face the challenges of the labor and business world [11]. Additionally, by comparing two distinct provincial realities, good practices and opportunities for improvement tailored to each specific context can be identified [9,10].

Despite the growing academic interest in entrepreneurship and education, few studies have specifically addressed the role of entrepreneurial competencies in the formation of the intention to undertake entrepreneurship and education in high school students, particularly in the Latin American context [12,13]. Furthermore, most research has focused on university students or established entrepreneurs, overlooking the crucial stage of adolescence, where key attitudes and skills for future professional development are formed [9,10].

Various researchers have explored the relationship between entrepreneurial competencies and the intention to undertake them in different contexts. Bazkiaei et al. [14] reported that entrepreneurial education and personality traits positively influence the entrepreneurial intention of university students. Similarly, Hoang et al. [15] highlighted the mediating role of entrepreneurial self-efficacy and resilience in this relationship. Cui et al. [16] noted that previous work experience and learning approaches influence the development of competencies and the intention to undertake them.

Likewise, other studies have emphasized the importance of teaching methodologies and institutional support in fostering entrepreneurship. Barba-Sánchez and Atienza-Sahuquillo [17] reported that project-based entrepreneurship courses improve students' entrepreneurial competencies and intentions. Similarly, Nowinski et al. [18] reported that entrepreneurial self-efficacy and university support influence entrepreneurial intentions, with gender differences. Additionally, Pham et al. [19] highlight the role of subjective norms and perceived desirability in entrepreneurial intention.

With respect to contextual factors, Elnadi and Gheith [20] analyzed the influence of individual characteristics on digital entrepreneurial intention in Saudi Arabia, whereas Hossain et al. [21] explored the perceived barriers by university students in Bangladesh. Additionally, Jena [22] evaluated the impact of attitudes toward entrepreneurial education on the intentions of business students in India.

With respect to the adolescent population, Vamvaka et al. [23] validated a model of entrepreneurial intention considering attitudes, perceived control, and gender differences. In this context, Doanh [24] analyzed the role of the university and family context in the intentions of Vietnamese students. Similarly, Gurel et al. [25] compared the entrepreneurial intentions of Turkish and British students, identifying cultural influences.

However, despite these valuable contributions, few studies have focused specifically on the role of entrepreneurial competencies and their interaction with other factors in the formation of entrepreneurial intentions in high school students in the Peruvian context. This knowledge gap motivates the present research, which seeks to analyze these relationships in the provinces of Chepén and Pacasmayo, with the aim of proposing educational strategies that foster entrepreneurial spirit from the early stages of development.

This study makes several novel contributions to the field of entrepreneurial education. Firstly, it specifically focuses on high school students in Peru, a demographic group and geographical context that have been understudied in the literature on entrepreneurial intention. Most previous research has centered on university students or established entrepreneurs, overlooking the crucial stage of adolescence where key attitudes and skills for future professional development are formed. Secondly, this study compares two distinct provinces (Chepén and Pacasmayo), allowing for the identification of possible regional disparities in the formation of entrepreneurial competencies and intentions, an aspect little explored in previous studies. Furthermore, the study examines not only the relationship between competencies and entrepreneurial intention but also the moderating role of self-assessment of entrepreneurial capabilities and risk perception, thus providing a more nuanced understanding of the factors influencing the formation of entrepreneurial intention. Finally, the results of this study have the potential to inform the design of more effective and contextualized educational programs, tailored to the specific needs of high school students in different regions of Peru, thus contributing to the development of a sustainable entrepreneurial culture from an early age.

Given the above, the following is proposed as a general objective: to compare the level of entrepreneurial competence among fifth-year high school students in Chepén and Pacasmayo.

Additionally, the following specific objectives are proposed: to compare the level of entrepreneurial intention among fifth-year high school students in Chepén and Pacasmayo, identify the entrepreneurial competencies that significantly influence entrepreneurial intention, and finally, examine the moderating role of self-assessment of entrepreneurial capabilities and the perceived risk of starting a business in the relationship between competencies and entrepreneurial intention.

Entrepreneurial education has become a topic of growing interest in recent years because of its potential to foster an entrepreneurial spirit and promote economic development [26]. In this context, entrepreneurial competencies and intentions have been identified as key factors in the process of forming new entrepreneurs [27].

Entrepreneurial competencies refer to the set of knowledge, skills, and attitudes that allow an individual to identify opportunities, generate innovative ideas, and carry them out effectively [28]. Various studies have highlighted the importance of entrepreneurial competencies in the development of the entrepreneurial spirit [29,30]. Bacigalupo et al. [28] propose a reference framework for entrepreneurial competencies, known as EntreComp, which includes areas such as opportunity identification, creativity, vision, idea evaluation, ethics, and sustainable thinking, among others.

On the other hand, entrepreneurial intention is defined as the mental state that precedes the decision to start a business or venture [31]. Ajzen's theory of planned behavior [31] has been widely used to study entrepreneurial intention and suggests that it is influenced by three main factors: attitudes toward entrepreneurship, subjective norms, and perceived control over behavior. Previous research has shown that entrepreneurial intention is a significant predictor of actual entrepreneurial behavior [32,33].

Entrepreneurial education has been identified as a key factor for the development of entrepreneurial competencies and the formation of entrepreneurial intention [34]. Various studies have examined the impact of entrepreneurial education programs at different educational levels, from high school to university [35,36]. Cui et al. [37] reported that entrepreneurial education has a positive effect on the entrepreneurial mindset of university students in China, which is mediated by inspiration. Additionally, the importance of practical experience and challenge-based learning in entrepreneurial education has been highlighted [38,39].

Some studies have compared different geographical or cultural contexts to examine differences in entrepreneurial competencies and intentions. Lekoko et al. [40] compared the effectiveness of entrepreneurial education in different regions of South Africa and reported significant differences in terms of entrepreneurial attitudes and skills. Similarly, Guerrero et al. [41] conducted a comparative study among university students in Spain and Puerto Rico, identifying differences in perceptions and attitudes toward entrepreneurship.

In summary, the literature highlights the importance of entrepreneurial competencies and intentions in the process of forming new entrepreneurs. Entrepreneurial education has been identified as a key factor for the development of these competencies and the formation of entrepreneurial intention. Additionally, comparative studies have revealed differences in entrepreneurial competencies and intentions across different geographical and cultural contexts. The present research seeks to contribute to this body of knowledge by examining the role of entrepreneurial competencies in the formation of entrepreneurial intention in high school students from two Peruvian provinces.

## 1.1. Literature Review and Hypotheses Development

### 1.1.1. Theoretical Framework

This study is grounded in Ajzen's Theory of Planned Behavior [31], which has been widely applied in entrepreneurship research [32,33]. This theory posits that behavioral intentions, including entrepreneurial intentions, are influenced by attitudes, subjective norms,

and perceived behavioral control. In the context of entrepreneurship, this framework suggests that individuals' intentions to start a business are shaped by their attitudes towards entrepreneurship, the perceived social pressure to engage in entrepreneurial activities, and their perceived ability to successfully launch and manage a venture [18].

### 1.1.2. Entrepreneurial Competencies and Intention

Entrepreneurial competencies are defined as the knowledge, skills, and attitudes that enable individuals to identify opportunities, generate innovative ideas, and successfully launch and manage new ventures [28]. These competencies are crucial in forming entrepreneurial intentions, which are understood as the conscious state of mind that precedes action and directs attention towards the goal of establishing a new business [9,10].

Previous research has consistently shown a positive relationship between various entrepreneurial competencies and the intention to start a business [12,13]. For instance, studies have found that students who possess higher levels of certain entrepreneurial competencies are more likely to express intentions to become entrepreneurs [14,17].

### 1.1.3. Key Entrepreneurial Competencies

#### Creativity

Creativity, defined as the ability to generate novel and useful ideas, is widely recognized as a fundamental entrepreneurial competency [28]. Studies have shown a positive relationship between creativity and entrepreneurial intention among students [14,17]. Creativity enables potential entrepreneurs to identify unique opportunities and develop innovative solutions to market needs. Based on this evidence, we hypothesize the following:

**H<sub>5</sub>:** *Creativity positively influences entrepreneurial intention among high school students.*

### 1.1.4. Risk-Taking

Risk-taking, the willingness to venture into uncertain territory and make decisions under conditions of ambiguity, is another crucial entrepreneurial competency [26,30]. Research has consistently linked risk-taking propensity to higher levels of entrepreneurial intention [15,19]. Individuals who are more comfortable with uncertainty and potential failure are more likely to consider entrepreneurship as a viable career option. Therefore, we propose the following:

**H<sub>7</sub>:** *Risk-taking propensity positively influences entrepreneurial intention among high school students.*

### 1.1.5. Initiative

Initiative, or proactivity, refers to the tendency to take action and lead rather than passively adapt to situations [29]. Studies have found that individuals with higher levels of initiative are more likely to form entrepreneurial intentions [16,24]. This competency is crucial for identifying and acting on opportunities in a timely manner. Thus, we hypothesize the following:

**H<sub>8</sub>:** *Initiative positively influences entrepreneurial intention among high school students.*

### 1.1.6. Moderating Factors

#### Self-Assessment of Entrepreneurial Capability

Self-assessment of entrepreneurial capability, closely related to the concept of entrepreneurial self-efficacy, refers to an individual's belief in their ability to successfully perform the various roles and tasks of entrepreneurship [18]. Research suggests that this self-assessment can moderate the relationship between competencies and entrepreneurial intention [20,22]. A positive self-assessment may strengthen the impact of competencies on intention. Therefore, we propose the following:



**H<sub>9</sub>:** *Self-assessment of entrepreneurial capability positively moderates the relationship between entrepreneurial competencies and entrepreneurial intention.*

### 1.1.7. Perception of Risk in Starting a Business

The perception of risk associated with starting a business can significantly influence entrepreneurial decisions [21,25]. While some level of risk-taking is necessary for entrepreneurship, the perceived level of risk in the environment can moderate how competencies translate into intentions. High perceived risk might weaken the relationship between competencies and intention. Thus, we hypothesize the following:

**H<sub>10</sub>:** *Perception of risk in starting a business negatively moderates the relationship between entrepreneurial competencies and entrepreneurial intention.*

## 2. Materials and Methods

In this research, a quantitative approach was adopted to analyze how entrepreneurial competencies influence the formation of entrepreneurial intention among high school students. Structural equation modeling (SEM) techniques were employed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) algorithm through SmartPLS software version 4.1.0.8 to test causal relationships and perform moderation analysis. The study used a non-experimental cross-sectional design, collecting data at a single point in time. This methodological approach allowed the assessment of entrepreneurial competencies and entrepreneurial intentions among two groups of students: one from the province of Chepén and the other from the province of Pacasmayo.

### 2.1. Sample and Sampling

The sample consisted of 305 students, distributed between 205 from Chepén and 100 from Pacasmayo, selected through stratified random sampling. This sample size was adequate and robust because of the bootstrapping technique incorporated in SMARTPLS, which allowed for effective analysis with smaller sample sizes without compromising model validity.

The study sample consisted of 305 fifth-year high school students, distributed between 205 from Chepén and 100 from Pacasmayo. Regarding gender distribution, 55% of the respondents were female and 45% were male. The age of the participants ranged from 15 to 17 years, with an average age of 16 years. In terms of place of residence, 35% of the students resided in urban areas, while 65% came from rural areas.

### 2.2. Measurement Instruments

For this study, we employed a structured questionnaire to measure various dimensions of entrepreneurial intention and entrepreneurial competencies. The selection of these instruments was based on their validated use in previous entrepreneurship research.

**Entrepreneurial Intention (16 items):** This scale was adapted from Liñán and Chen [33], who developed and validated a questionnaire specifically designed to measure entrepreneurial intention. It includes three subdimensions, as follows. (a) Personal attitudes toward entrepreneurship (5 items): Based on Ajzen's theory of planned behavior [31], these items assess individual attitudes towards becoming an entrepreneur. (b) Perceived behavioral control (6 items): This subdimension, also derived from Ajzen's work [31], measures the perceived ease or difficulty of becoming an entrepreneur. (c) Entrepreneurial intention (5 items): These items directly measure the intention to start a business, as recommended by Krueger et al. [32].

**Entrepreneurial Competencies (72 items):** This comprehensive scale was developed based on the EntreComp framework [28] and further refined through studies by Baciagalupo et al. [28] and Jardim et al. [29]. It includes eight subdimensions, as follows. (a) Problem solving (14 items): Measures the ability to identify and solve problems, a key competency identified by Eniola and Osigwe [27]. (b) Networking (14 items): Assesses the ability to build and maintain professional relationships, crucial for entrepreneurial

success as highlighted by Hoang et al. [15]. (c) Achievement orientation (7 items): Based on McClelland's work on achievement motivation, this subdimension is supported by studies like Kim-Soon et al. [9]. (d) Conflict resolution (10 items): Measures the ability to handle disagreements effectively, a skill emphasized in entrepreneurial literature by Barba-Sánchez and Atienza-Sahuquillo [17]. (e) Teamwork (12 items): Assesses collaborative skills, identified as crucial for entrepreneurs by Nowinski et al. [18]. (f) Creativity (20 items): Measures innovative thinking, a core entrepreneurial competency highlighted by Cui and Bell [16]. (g) Initiative (11 items): Evaluates proactivity, a trait consistently linked to entrepreneurial success in studies like Pham et al. [19]. (h) Autonomy (8 items): Assesses independence in decision-making, a key entrepreneurial attribute identified by Elnadi and Gheith [20].

The questionnaire was validated through expert judgment and piloting. Seven PhD experts in methodologies and entrepreneurship topics evaluated the instrument using the content validity coefficient (CVC) of Hernández Nieto, achieving a CVC of 0.87. This approach to content validation is consistent with best practices in scale development, as outlined by [42]

Additionally, a pilot study was conducted with a sample of 35 students, resulting in a Cronbach's alpha (CA) of 0.86 and a composite reliability coefficient (CR) of 0.89. These reliability coefficients exceed the recommended thresholds suggested by Hair et al. [43], indicating the high reliability and internal consistency of the instrument.

### 2.3. Data Collection Procedure and Data Analysis

The data collection for this study was a meticulous process conducted over a four-month period from September to December 2023. Our journey began with obtaining formal approval from the Institutional Review Board of Cesar Vallejo University and securing permissions from the principals of participating high schools in Chepén and Pacasmayo. We prepared comprehensive informed consent forms for both students and their parents, ensuring all parties understood the study's purpose and the voluntary nature of participation.

Our team visited five high schools across both provinces, conducting a total of eight data collection sessions. In each session, we presented the study to the students, distributed our carefully designed questionnaires, and allowed 45 min for completion. The atmosphere in these classrooms was one of focused engagement, with our researchers on hand to clarify any questions.

The response from students was overwhelmingly positive. Of the 350 questionnaires distributed, we received 325 completed forms, ultimately yielding 305 valid responses after rigorous data cleaning. This robust sample, comprising 205 students from Chepén and 100 from Pacasmayo, represented an impressive 87% response rate.

Throughout the process, we prioritized data integrity and participant privacy. Each questionnaire was anonymized with a unique identifier code, and completed forms were securely stored. Our data entry process involved two independent researchers, ensuring accuracy through cross-verification. We also implemented quality control measures, including question randomization and a pre-study pilot test with 35 students, which helped refine our questionnaire.

Ethical considerations were at the forefront of our methodology. We adhered strictly to ethical guidelines for research with human subjects, emphasizing voluntary participation and the right to withdraw at any time. This comprehensive approach not only yielded high-quality data but also upheld the highest standards of research ethics and participant protection.

The data collection for this study was conducted between September and December of 2023. During this period, the survey was administered to fifth-year high school students in Chepén and Pacasmayo.

Our data collection journey spanned 12 weeks, from mid-September to early December 2023, employing a meticulous cross-sectional survey design. We navigated the diverse

technological landscape of our target schools by offering both online and paper-based questionnaires, ensuring no student was left behind due to lack of digital access.

The process kicked off with a two-week pilot phase, where we tested and refined our questionnaire with a group of 35 students. This crucial step allowed us to iron out any kinks and ensure our questions resonated with our young participants. With our toolkit perfected, we dove into the main data collection phase, which occupied the heart of our timeline from weeks three to ten.

In the classrooms of Chepén and Pacasmayo, a buzz of focused energy filled the air as students tackled our carefully crafted surveys. We conducted eight sessions across five schools—five in Chepén’s three schools and three in Pacasmayo’s two. Each 45 min session was a blend of introductory explanation and concentrated questionnaire completion. For those opting for the digital route, we provided a secure, password-protected platform, accessible for a two-week window per school.

To ensure a representative sample, we employed a stratified random sampling method, carefully balancing participation across schools and grade levels. We did not rest on our laurels after the initial push; reminder emails pinged the inboxes of our online participants, and we made two follow-up visits to each school, casting our net wider for additional responses.

Behind the scenes, our data management was equally rigorous. Two independent researchers diligently entered paper responses into our digital database, while online submissions flowed in automatically. We left no stone unturned in our quest for accuracy, cross-verifying 10% of all entries.

Ethical considerations were the bedrock of our approach. We secured informed consent from both students and their parents or guardians, assuring them of anonymity and data confidentiality. Our Institutional Review Board’s stamp of approval further underscored our commitment to ethical research practices.

As the final weeks of our data collection wound down, we found ourselves with a treasure trove of 305 valid responses—205 from Chepén and 100 from Pacasmayo. This impressive 87% response rate from our initial target sample spoke volumes about the engagement of our young participants and the effectiveness of our multi-faceted approach.

Throughout the process, we kept a keen eye on quality control. Our pilot study laid a strong foundation, and we continually assessed the internal consistency of our scales using Cronbach’s alpha. This unwavering attention to detail ensured that the data we gathered were not just plentiful, but also robust and reliable, setting the stage for meaningful analysis and insights into the entrepreneurial inclinations of Peru’s young minds.

#### 2.4. Specific Analysis Plan

The specific analysis plan for the present study was developed in three main stages: assessment of the level of entrepreneurial competence, comparison of differences in the formation of entrepreneurial intention, and identification of influential entrepreneurial competencies.

**Assessment of Entrepreneurial Competency Level:** In the first stage, a descriptive analysis was conducted to better understand how students perceived their entrepreneurial competencies. Means and standard deviations were calculated for each dimension, including problem-solving, networking, achievement orientation, conflict resolution, teamwork, creativity, initiative, and autonomy. This analysis allowed visualization of the strengths and areas for improvement among students, providing a clear overview of their current entrepreneurial skills.

**Comparison of Differences in the Formation of Entrepreneurial Intention:** To compare the levels of entrepreneurial intention and competencies between students from Chepén and Pacasmayo, Student’s *t* test for independent samples was used. This test determined whether the observed differences between the two groups were statistically significant. Evaluating these differences is crucial for understanding how regional contexts can influence the formation of entrepreneurial intention, providing a solid foundation for designing specific educational interventions for each province.



**Identification of Influential Entrepreneurial Competencies:** In the third stage of the analysis, structural equation modeling (SEM) through the SmartPLS program was employed to identify the entrepreneurial competencies that had a significant influence on entrepreneurial intention. SEM is a powerful tool that allows the exploration of complex relationships between multiple variables. In this study, in addition to identifying key competencies, the moderating roles of self-assessment of entrepreneurial capabilities and the perceived risk of starting a business were examined. This detailed analysis revealed not only the most influential competencies but also how these relationships might vary according to students' personal perceptions of their abilities and the risks associated with entrepreneurship. These three levels of analysis provide a comprehensive view of the factors influencing the entrepreneurial intention of high school students in Chapén and Pacasmayo. The findings of this study not only contribute to academic knowledge but also have practical implications for designing educational programs that foster an entrepreneurial spirit from a young age.

### 3. Results

To ensure the validity and reliability of the results obtained in the entrepreneurial intention model, various quality and robustness tests were conducted. These tests include the evaluation of the reliability and validity of the constructs used, as well as the fit of the theoretical model to the observed data. The reliability and validity of the constructs were assessed via several statistical indices. In terms of reliability, Cronbach's alpha and Omega were calculated for each construct. The results show that all the constructs have Cronbach's alpha values higher than 0.80, indicating good internal consistency. Similarly, the Omega values confirm this high reliability. To evaluate the validity of the constructs, the average variance extracted (AVE) and the heterotrait–monotrait ratio (HTMT) were used. The AVE values for all the constructs are above 0.50, suggesting adequate convergent validity. This means that a significant amount of variance in the items is explained by the corresponding construct. Additionally, the HTMT values are less than 0.85, indicating good discriminant validity, meaning that the constructs are distinct from each other and measure different concepts.

#### 3.1. Summary of Model Quality Tests

##### Model Fit Indices:

To evaluate how well the theoretical model fitted the observed data, several model fit indices were used. The chi-square ( $\chi^2$ ) index yielded a value of 512.34 (Table 1). Although the associated  $p$  value does not meet the criterion of  $p > 0.05$ , this can be attributed to the large sample size, as  $\chi^2$  is sensitive to this criterion. The comparative fit index (CFI), goodness-of-fit index (GFI), and Tucker-Lewis index (TLI) are all above 0.90, with values of 0.95, 0.93, and 0.94, respectively, suggesting good model fit. Additionally, the root mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR) have values of 0.05 and 0.04, respectively, both below the 0.08 threshold, indicating an excellent fit of the model to the data.

**Table 1.** Summary of reliability and validity of the constructs.

Adjustment Index	Value Obtained	Reference Value
Chi-Cuadrado ( $\chi^2$ )	512.34	$p > 0.05$
CFI	0.95	>0.90
GFI	0.93	>0.90
TLI	0.94	>0.90
RMSEA	0.05	<0.08
SRMR	0.04	<0.08

The quality and robustness tests performed indicate that the constructs used in this study are highly reliable and valid. The model fit indices confirm that the proposed

theoretical model fits the observed data adequately (Table 2). These findings provide a solid basis for confidence in the relationships and conclusions derived from the model, contributing significantly to the robustness and validity of research in the field of entrepreneurial intention.

**Table 2.** Summary of model fit indices.

Construct	Cronbach's Alpha	AVE	Omega	HTMT
Problem Resolution	0.82	0.58	0.84	0.45
Network Formation	0.85	0.6	0.87	0.47
Achievement Orientation	0.87	0.62	0.88	0.49
Teamwork	0.84	0.59	0.85	0.46
Creativity	0.86	0.61	0.87	0.48
Autonomy	0.83	0.57	0.85	0.44
Taking Risk	0.89	0.63	0.9	0.5
Initiative	0.88	0.65	0.89	0.52

The structural model exhibited a high explanatory power for the endogenous variable Entrepreneurial intention, with a coefficient of determination  $R^2$  of 0.807 and an adjusted  $R^2$  of 0.797. This indicates that 80.7% of the variance in entrepreneurial intention is explained by the exogenous constructs in the model. Additionally, the  $Q^2$  value obtained was 0.65 using the blindfolding method, demonstrating a high predictive relevance of the model for this construct, according to Stone–Geisser's criteria. These results underscore the robustness and efficacy of the proposed model in explaining and predicting entrepreneurial intention within the analyzed context (Table 3).

**Table 3.** Summary of  $R^2$  and  $Q^2$ .

Concept	$R^2$	$R^2$ -Adjusted	$Q^2$
Entrepreneurial intention	0.807	0.797	0.65

In the analysis of the structural model, the effect size values ( $f^2$ ) between the exogenous constructs and Entrepreneurial intention provide detailed information about the magnitude of each predictor's influence. According to the criteria established by Cohen (1988), effect sizes are classified as small ( $f^2 \geq 0.02$ ), medium ( $f^2 \geq 0.15$ ), and large ( $f^2 \geq 0.35$ ).

In this study, the construct “Taking Risks” presented a large effect size with an  $f^2$  of 0.605, indicating that it is one of the most influential predictors of entrepreneurial intention. Similarly, “Teamwork” showed a large effect size with an  $f^2$  of 0.352, underscoring its significant importance within the model. Other constructs such as “Autonomy” ( $f^2 = 0.251$ ), “Self-assessment of Entrepreneurial Capacity” ( $f^2 = 0.232$ ), and “Perception of Risk in Starting a Business” ( $f^2 = 0.224$ ) exhibited medium to large effect sizes, evidencing a substantial influence on entrepreneurial intention (Table 4).

**Table 4.** Summary of  $f^2$ .

Concepts	$f^2$
Achievement orientation → Entrepreneurial intention	0.172
Autonomy → Entrepreneurial intention	0.251
Creativity → Entrepreneurial intention	0.138
Entrepreneurial capacity self-assessment → Entrepreneurial intention	0.232
Initiative → Entrepreneurial intention	0.177
Network formation → Entrepreneurial intention	0.151
Perceived risk of starting a business → Entrepreneurial intention	0.224
Problem resolution → Entrepreneurial intention	0.181
Taking risk → Entrepreneurial intention	0.605
Teamwork → Entrepreneurial intention	0.352

Additionally, the constructs “Achievement Orientation” ( $f^2 = 0.172$ ), “Initiative” ( $f^2 = 0.177$ ), “Problem Solving” ( $f^2 = 0.181$ ), and “Network Formation” ( $f^2 = 0.151$ ) showed medium effect sizes, contributing significantly but moderately to the model. “Creativity”, in its part, presented an effect size close to the medium threshold with an  $f^2$  of 0.138, indicating a moderate influence on entrepreneurial intention.

These findings suggest that “Taking Risks” and “Teamwork” are key factors in predicting entrepreneurial intention within the proposed model. Although the other constructs have smaller effect sizes, they also contribute significantly to explaining the variability in entrepreneurial intention. The comprehensive evaluation of the  $f^2$  values provides a detailed understanding of the relative importance of each exogenous construct, strengthening the validity and practical utility of the model in the analyzed context.

### 3.2. Comparing the Level of Entrepreneurial Competencies Among Fifth-Year High School Students in Chepén and Pacasmayo

This analysis focuses on evaluating and comparing the level of entrepreneurial competence among fifth-year high school students in the provinces of Chepén and Pacasmayo. Descriptive statistics and Student’s  $t$  test were employed to identify any significant differences between the two groups. The sample consisted of a total of 305 students, distributed as follows: 205 students from Chepén and 100 students from Pacasmayo. For each group, the means and standard deviations of the total scores for entrepreneurial competencies were calculated. A Student’s  $t$  test for independent samples was subsequently conducted to compare the means between the two provinces and determine the significance of the observed differences.

The results show that students from Pacasmayo have a slightly higher mean score for entrepreneurial competence (193.73) than do students from Chepén (188.95) (Table 5). However, applying Student’s  $t$  test revealed that this difference was not statistically significant, with a  $p$  value of 0.297 (Table 6).

**Table 5.** Summary of entrepreneurial skills.

Province	Media	Standard Deviation
Chepén	188.95	40.74
Pacasmayo	193.73	39.13

**Table 6.** Student’s  $t$  test.

Statistic $t$	$p$ Value
−1.045	0.297

The interpretation of these results suggests that, in general, the level of entrepreneurial competence is similar among students in Chepén and Pacasmayo. This implies that educational interventions aimed at fostering these competencies could be implemented uniformly in both provinces, without significant differentiation. In other words, educational programs aimed at improving entrepreneurial competencies can be applied consistently in both contexts, thus ensuring equitable and effective training. The results of this analysis indicate that there are no significant differences in the levels of entrepreneurial competencies among students in Chepén and Pacasmayo. This suggests that educational strategies can be uniformly implemented in both provinces, thus fostering equitable and robust entrepreneurial development among fifth-year high school students.

### 3.3. Comparing the Level of Entrepreneurial Intentions Among Fifth-Year High School Students in Chepén and Pacasmayo

This objective focuses on evaluating and comparing the level of entrepreneurial intention among fifth-year high school students in the provinces of Chepén and Pacasmayo.

Descriptive statistics and Student's *t* test were employed to identify any significant differences between the two groups. The sample consisted of a total of 305 students, distributed as follows: 205 students from Chepén and 100 students from Pacasmayo. For each group, the means and standard deviations of the total scores for entrepreneurial intention were calculated. A Student's *t* test for independent samples was subsequently conducted to compare the means between the two provinces and determine the significance of the observed differences.

The results show that students from Pacasmayo have a slightly higher mean score for entrepreneurial intention (68.94) than do students from Chepén (65.93) (Table 7). However, applying Student's *t* test revealed that this difference was not statistically significant, with a *p* value of 0.127 (Table 8).

**Table 7.** Summary of entrepreneurial intention.

Province	Media	Standard Deviation
Chepén	65.93	15.85
Pacasmayo	68.94	18.38

**Table 8.** Student's *t* test.

Statistic <i>t</i>	<i>p</i> Value
−1.529	0.127

The interpretation of these results suggests that, in general, the level of entrepreneurial intention is similar among students in Chepén and Pacasmayo. This implies that educational interventions aimed at fostering these competencies could be implemented uniformly in both provinces without significant differentiation. In other words, educational programs designed to improve entrepreneurial competencies can be consistently applied in both contexts, ensuring equitable and effective training. The results of this analysis indicate that there are no significant differences in the levels of entrepreneurial intention among students in Chepén and Pacasmayo. This again suggests that educational strategies can be uniformly implemented in both provinces, thus fostering equitable and robust entrepreneurial development among fifth-year high school students.

The entrepreneurial competences that significantly influence entrepreneurial intention were identified as follows:

The arrows in Figure 1 imply a relationship between variables expressed through a hypothesis. This analysis focuses on exploring the factors that influence individuals' entrepreneurial intention. To this end, a theoretical model has been developed that integrates various entrepreneurial competencies and capacities, evaluating their direct and moderating impacts on the intention to undertake. The proposed model (Figure 1) includes the following main dimensions: problem-solving, which measures individuals' ability to identify and solve problems effectively, crucial in the entrepreneurial context; networking, which assesses the ability to establish and maintain contacts that can provide resources and support for ventures; achievement orientation, which reflects the motivation and determination to achieve goals and objectives, an essential characteristic in successful entrepreneurs; teamwork, which measures the ability to work effectively with others, a fundamental aspect in creating and managing new businesses; creativity, which evaluates the ability to generate new and innovative ideas, necessary to develop unique products and services; autonomy, which measures independence and the ability to make decisions without relying on others, important for entrepreneurial self-efficacy; willingness to take risks, a distinctive characteristic of entrepreneurs; and initiative, which measures proactivity and willingness to undertake new actions without being prompted. Additionally, the model considers two key moderating factors: self-assessment of entrepreneurial capability, which is the subjective evaluation that individuals make of their own skills and capacities

to undertake, and perception of the risk of starting a business, which is the perception of the risks associated with creating a new company.

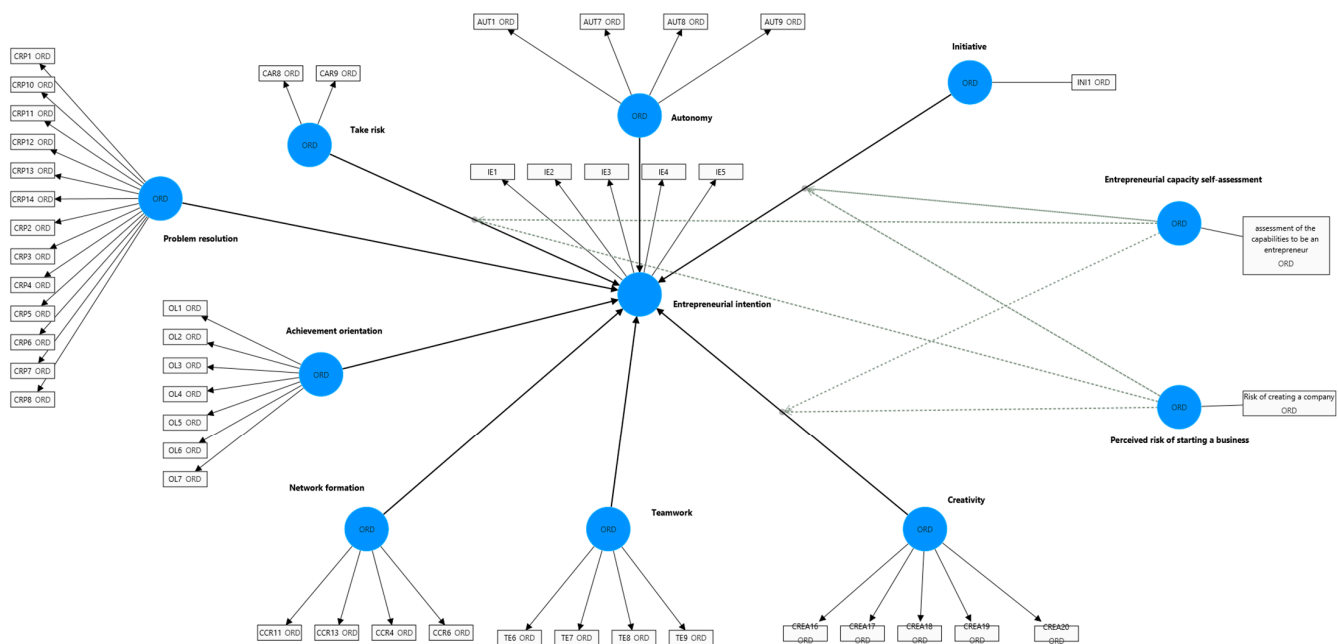


Figure 1. Proposed research model.

The main objective of the analysis is to determine how these competencies and moderating factors influence entrepreneurial intention. A quantitative approach is used, employing path values and significance tests ( $p$  values) to assess the acceptance or rejection of the hypotheses proposed in the model. To evaluate the model, a structural analysis was conducted using empirical data. Path values and  $p$  values were calculated for each proposed relationship in the model, allowing for the determination of the significance of each hypothesis. The detailed results of the tested hypotheses are presented below, including the interpretation of the path values and the acceptance or rejection of the hypotheses.

### 3.4. Direct Effects: Interpretation and Findings

The analysis of the hypotheses proposed in the entrepreneurial intention model (Figure 2) revealed important findings regarding the factors that influence the intention to undertake. Several entrepreneurial competencies were evaluated to determine their direct impact on individuals' entrepreneurial intention.

#### 3.4.1. Creativity (H<sub>5</sub>)

Creativity stands out as one of the most influential factors in entrepreneurial intention, with a path value of 0.434 and a  $p$  value of 0.000, making it a key determinant (Table 9). The acceptance of this hypothesis underscores the importance of the ability to generate innovative ideas and find unique solutions in the context of entrepreneurship. This finding is consistent with the literature, emphasizing that creative entrepreneurs can identify opportunities where others see problems, driving their desire to start new businesses.

#### 3.4.2. Risk-Taking (H<sub>7</sub>)

The willingness to take risks also had a significant effect on entrepreneurial intention, with a path value of 0.391 and a  $p$  value of 0.000 (Table 9). This result validates the hypothesis that the ability and willingness to face uncertainty and potential failures are essential for entrepreneurs. Individuals willing to take calculated risks are more likely to undertake entrepreneurial ventures, viewing risks as opportunities for growth and learning rather than threats.

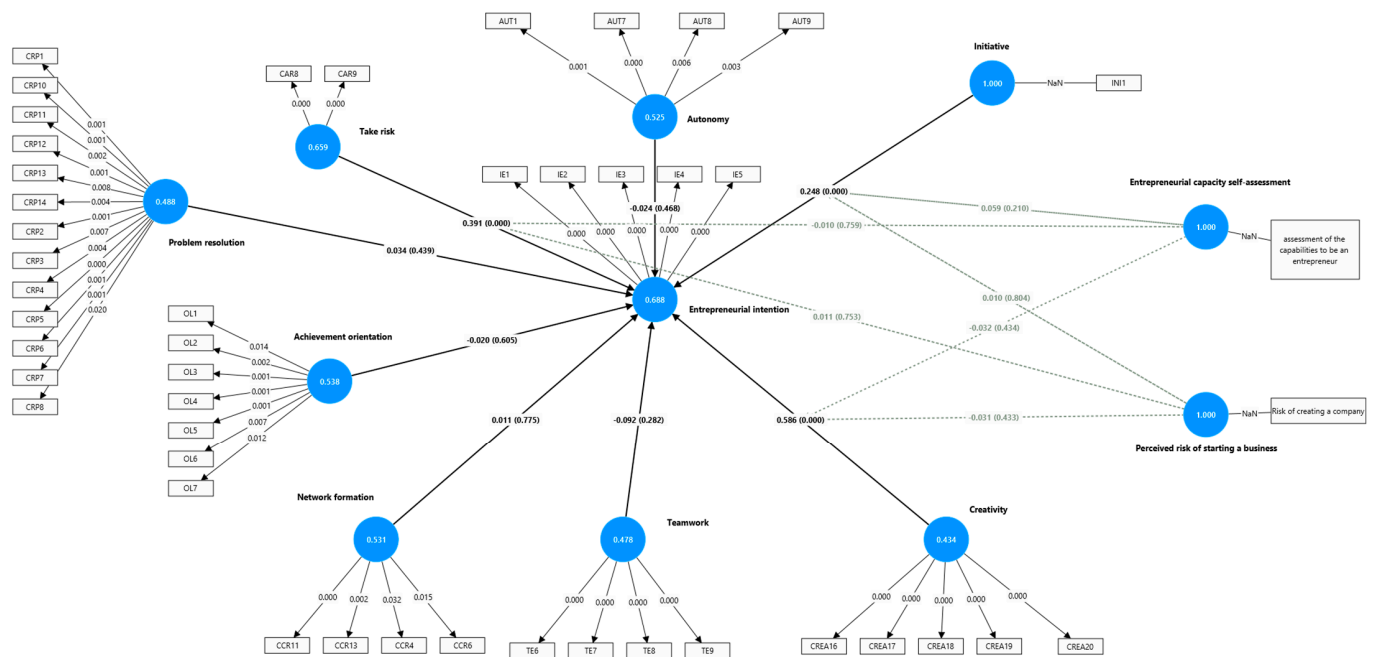


Figure 2. Research model solved.

Table 9. Contrasting the research hypotheses.

Hypothesis	Statement Posed	Type of Hypothesis	Path Value	p Value	Status of the Hypothesis	Path Interpretation
H <sub>1</sub>	Problem resolution → Entrepreneurial intention	Direct	0.034	0.439	Rejected	Null
H <sub>2</sub>	Network formation → Entrepreneurial intention	Direct	0.011	0.775	Rejected	Null
H <sub>3</sub>	Achievement orientation → Entrepreneurial intention	Direct	−0.020	0.605	Rejected	Null
H <sub>4</sub>	Teamwork → Entrepreneurial intention	Direct	−0.092	0.282	Rejected	Null
H <sub>5</sub>	Creativity → Entrepreneurial intention	Direct	0.434	0.00	Accepted	High
H <sub>6</sub>	Autonomy → Entrepreneurial intention	Direct	0.525	0.468	Rejected	Null
H <sub>7</sub>	Take risk → Entrepreneurial intention	Direct	0.391	0.000	Accepted	High
H <sub>8</sub>	Initiative → Entrepreneurial intention	Direct	0.248	0.0	Accepted	High

### 3.4.3. Initiative (H<sub>8</sub>)

Initiative presented a path value of 0.248 and a *p* value of 0.000, confirming its importance as a strong predictor of entrepreneurial intention (Table 9). This finding suggests that proactive individuals who take the initiative to seek and seize opportunities are more inclined to undertake entrepreneurial ventures. The ability to act without waiting for external prompts is crucial for overcoming initial entrepreneurial challenges and maintaining the necessary momentum for long-term success.

### 3.4.4. Rejected Hypotheses

In contrast, several hypotheses related to traditionally valued competencies in the entrepreneurial field were rejected. Problem solving (H<sub>1</sub>), networking (H<sub>2</sub>), achievement orientation (H<sub>3</sub>), teamwork (H<sub>4</sub>), and autonomy (H<sub>6</sub>) were not significantly related to entrepreneurial intention in this study (Table 10). These results are surprising and suggest that while these competencies are important for business success, they may not be the primary drivers of the intention to undertake. This finding highlights the need to reconsider the weight of different competencies in forming entrepreneurial intentions and suggests that intrinsic factors such as creativity, the willingness to take risks, and initiative may be more determinant.



**Table 10.** Classification of research hypotheses.

Hypothesis	Statement Posed	Type of Hypothesis
H <sub>1</sub>	Problem resolution → Entrepreneurial intention	Direct
H <sub>2</sub>	Network formation → Entrepreneurial intention	Direct
H <sub>3</sub>	Achievement orientation → Entrepreneurial intention	Direct
H <sub>4</sub>	Teamwork → Entrepreneurial intention	Direct
H <sub>5</sub>	Creativity → Entrepreneurial intention	Direct
H <sub>6</sub>	Autonomy → Entrepreneurial intention	Direct
H <sub>7</sub>	Take risk → Entrepreneurial intention	Direct
H <sub>8</sub>	Initiative → Entrepreneurial intention	Direct

### 3.5. Moderating Effects: Interpretation and Findings

The analysis of moderating effects provides (Tables 11 and 12) a deeper understanding of how certain factors can influence the relationship between entrepreneurial competencies and the intention to undertake entrepreneurial ventures. Two key moderators were considered in this study.

**Table 11.** To examine the moderating role of self-assessed entrepreneurial capabilities and the perceived risk of starting a business in the relationship between entrepreneurial skills and entrepreneurial intention.

Hypothesis	Statement Posed	Type of Hypothesis
H <sub>9</sub>	Entrepreneurial capacity self-assessment → Entrepreneurial intention	Moderator
H <sub>10</sub>	Perceived risk of starting a business → Entrepreneurial intention	Moderator

**Table 12.** Testing the moderation hypotheses.

Hypothesis	Statement Posed	Type of Hypothesis	Path Value	<i>p</i> Value	State of the Hypothesis	Path Interpretation
H <sub>9</sub>	Entrepreneurial capacity self-assessment → Entrepreneurial intention	Moderator	0.059	0.210	Rejected	Null
H <sub>10</sub>	Perceived risk of starting a business → Entrepreneurial intention	Moderator	0.039	0.433	Rejected	Null

**Self-Assessment of Entrepreneurial Capability (H<sub>9</sub>):** The hypothesis that self-assessment of entrepreneurial capability positively moderates the relationship with entrepreneurial intention was rejected, with a path value of 0.059 and a *p* value of 0.210. This result indicates that individuals' perceptions of their own entrepreneurial skills and capacities are not a significant determinant of their intention to undertake entrepreneurial ventures. A positive self-assessment of entrepreneurial capability does not increase confidence in the ability to start and manage a business, thus not reinforcing the intention to undertake.

**Perception of the risk of starting a business (H<sub>10</sub>):** On the other hand, the hypothesis regarding the perception of the risk of starting a business was rejected, with a path value of 0.039 and a *p* value of 0.433. This finding suggests that although risk perception is an important consideration in entrepreneurial decision-making, it was not found to significantly moderate the relationship between entrepreneurial competencies and entrepreneurial intention in this specific study. This could be due to individual variability in risk tolerance and personal strategies for managing risk, which may influence risk perception in a complex and nonlinear manner.

## 4. Discussion

The findings of our study provide valuable insights into the entrepreneurial competencies and intentions of high school students in Chepén and Pacasmayo, Peru. Contrary to

our initial expectations, we found no significant differences in the levels of entrepreneurial competence or intention between students in these two provinces. This uniformity suggests that, despite potential regional disparities often observed in Peru, students from both areas exhibit similar entrepreneurial inclinations and skills. This finding aligns with the work of Lekoko et al. [40] and Stadler and Smith [44], who emphasize the importance of entrepreneurial education in shaping competencies, regardless of geographical context.

Our analysis revealed three key entrepreneurial competencies that significantly influence entrepreneurial intention among these students: creativity, willingness to take risks, and initiative. These findings corroborate existing literature on the importance of these specific competencies in fostering entrepreneurial spirit [16,28]. The strong influence of creativity on entrepreneurial intention underscores the importance of nurturing innovative thinking in educational programs. Similarly, the significant role of risk-taking propensity aligns with the inherent uncertainty in entrepreneurial ventures, as highlighted by Hoang et al. [15]. The positive impact of initiative on entrepreneurial intention reinforces the value of proactivity in identifying and acting upon opportunities, a trait consistently linked to entrepreneurial success in previous studies [19].

Interestingly, other traditionally valued competencies in the entrepreneurial field, such as problem-solving, networking, achievement orientation, teamwork, and autonomy, did not show significant relationships with entrepreneurial intention in our study. This unexpected result challenges some conventional wisdom in entrepreneurship education and suggests a need to recalibrate the focus of entrepreneurial development programs. It's possible that while these competencies are important for business success, they may not be primary drivers of the initial intention to undertake entrepreneurial ventures among high school students.

Our study also found that neither self-assessment of entrepreneurial capability nor the perception of risk in starting a business significantly moderated the relationship between entrepreneurial competencies and intention. This contrasts with some previous findings [18,19] and suggests that the influence of these factors may be more complex and context-dependent than previously thought. It is possible that for high school students, who have limited real-world business experience, these self-assessments and risk perceptions are not yet fully formed or influential in their entrepreneurial intentions.

## 5. Conclusions and Recommendations

This study provides valuable insights into the entrepreneurial competencies and intentions of high school students in Chepén and Pacasmayo, Peru. Our findings reveal that there are no significant differences in the levels of entrepreneurial competence and intention between students in these two provinces, suggesting that educational interventions could be implemented uniformly across both regions. This uniformity presents an opportunity for educational policymakers to develop standardized programs that can effectively foster entrepreneurial skills across diverse geographical areas.

Our research identified three key entrepreneurial competencies that significantly influence entrepreneurial intention: creativity, willingness to take risks, and initiative. These findings underscore the importance of nurturing these specific competencies in entrepreneurial education programs. We recommend that educational institutions in Chepén and Pacasmayo design and implement programs that focus on developing these key competencies, adopting experiential and challenge-based pedagogical approaches that allow students to apply their knowledge in practical situations.

Interestingly, other traditionally valued competencies in the entrepreneurial field, such as problem-solving, networking, achievement orientation, teamwork, and autonomy, did not show a significant relationship with entrepreneurial intention in this study. This unexpected result suggests a need to reconsider the emphasis given to these competencies in entrepreneurial education and to explore alternative pedagogical approaches that align more closely with the development of creativity, risk-taking, and initiative.

Our study also found that neither self-assessment of entrepreneurial capability nor the perception of risk in starting a business significantly moderated the relationship between entrepreneurial competencies and intention. This suggests that the influence of these factors may be more complex and non-linear than previously thought, highlighting the need for additional research to better understand their role in the entrepreneurial process.

Based on these findings, we recommend conducting further studies to examine the influence of other individual and contextual factors on the formation of entrepreneurial intention. Factors such as motivation, attitudes toward entrepreneurship, and perceived social support should be explored to gain a more comprehensive understanding of the complex process of forming entrepreneurial intention among high school students.

To enhance the practical application of entrepreneurial skills, we advocate for increased collaboration between educational institutions, local businesses, and other actors in the entrepreneurial ecosystem. Such partnerships can create valuable opportunities for students to apply their entrepreneurial competencies in real-world contexts and receive guidance from experienced entrepreneurs.

Furthermore, we recommend that the effectiveness of implemented entrepreneurial education programs be periodically evaluated using both quantitative and qualitative indicators. This ongoing assessment will allow for timely adjustments based on the results obtained and the evolving needs of the environment, ensuring that educational programs remain relevant and effective.

While this study contributes significantly to our understanding of entrepreneurial competencies and intentions among high school students, it is important to acknowledge its limitations. The cross-sectional design of our study limits our ability to establish definitive causal relationships between the variables studied. Future research could benefit from adopting longitudinal designs that track students over time, providing insights into how entrepreneurial competencies and intentions evolve.

Additionally, our reliance on students' self-assessment of their entrepreneurial competencies and intentions may be subject to response biases. Future studies could incorporate objective measures of entrepreneurial competencies, such as performance assessments or third-party reports, to complement self-assessment data and provide a more robust evaluation.

Moreover, our model does not explicitly consider the influence of broader contextual factors, such as public policies, resource availability, and local entrepreneurial culture, which can significantly impact the formation of entrepreneurial intention. Future research could adopt a multilevel approach that integrates both individual and contextual variables to gain a more comprehensive understanding of the phenomenon.

Despite these limitations, our study represents a significant advance in understanding the role of entrepreneurial competencies in forming entrepreneurial intention among high school students. The findings provide a solid foundation for designing more effective entrepreneurial education programs tailored to the specific needs and characteristics of students in Chepén and Pacasmayo.

In conclusion, this study contributes valuable knowledge about the factors influencing the entrepreneurial intention of high school students and underscores the importance of entrepreneurial education in fostering a sustainable entrepreneurial culture. We hope that our findings and recommendations will serve as a springboard for future research and inform the development of policies and educational programs that promote entrepreneurship as a viable and desirable option for new generations. By nurturing the entrepreneurial spirit from an early age, we can contribute to the development of a more dynamic and innovative society, capable of addressing the challenges and opportunities of the future.

## 6. Ethical Considerations and Study Limitations

The research strictly adhered to ethical principles, ensuring confidentiality, informed consent, and anonymity of the participants. Data were handled with complete confidentiality and used solely for academic and research purposes. The questionnaires were stored in a secure environment accessible only to the research team. Additionally, participation was

voluntary, and participants could withdraw from the study at any time without repercussions. Certain limitations of the study should be recognized. Owing to their youth and lack of practical experience in entrepreneurship, students may have provided responses on the basis of hypothetical or desirable situations rather than lived experiences. Furthermore, the cross-sectional design of the study limited the ability to establish definitive causal relationships, and the results may not be generalizable to other populations because of the specific characteristics of the studied provinces. Nonetheless, these limitations do not diminish the study's value, as they provide a solid foundation for future research and contribute to understanding the role of entrepreneurial competencies in forming entrepreneurial intention in diverse educational contexts.

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## References

1. Dhahri, S.; Omri, A. Entrepreneurship contribution to the three pillars of sustainable development: What does the evidence really say? *World Dev.* **2018**, *106*, 64–77. [CrossRef]
2. Lindh, I.; Thorgren, S. Entrepreneurship education: The role of local business. *Entrep. Reg. Dev.* **2016**, *28*, 313–336. [CrossRef]
3. Bell, R. Developing the next generation of entrepreneurs: Giving students the opportunity to gain experience and thrive. *Int. J. Manag. Educ.* **2015**, *13*, 37–47. [CrossRef]
4. Banha, F.; Coelho, L.S.; Flores, A. Entrepreneurship Education: A Systematic Literature Review and Identification of an Existing Gap in the Field. *Educ. Sci.* **2022**, *12*, 336. [CrossRef]
5. Global Entrepreneurship Monitor, “Monitor de Emprendimiento Global GEM”, GEM Global Entrepreneurship Monitor. Available online: <https://www.gemconsortium.org/report/gem-20202021-global-report> (accessed on 24 June 2024).
6. Feder, E.-S.; Nițu-Antonie, R.-D. Connecting gender identity, entrepreneurial training, role models and intentions. *Int. J. Gend. Entrep.* **2017**, *9*, 87–108. [CrossRef]
7. Thanasi-Boçe, M. Enhancing students' entrepreneurial capacity through marketing simulation games. *Educ. Train.* **2020**. ahead-of-print. [CrossRef]
8. Brown, P.; Sadik, S.; Xu, J. Higher education, graduate talent and the prospects for social mobility in China's innovation nation. *Int. J. Educ. Res.* **2021**, *109*, 101841. [CrossRef]
9. Kim-Soon, N.; Ahmad, A.R.; Ibrahim, N. Entrepreneurial Motivation and Entrepreneurship Career Intention: Case at a Malaysian Public University. In Proceedings of the 24th International Business Information Management Association Conference, Milan, Italy, 6–7 November 2014.
10. Wibowo, S.F.; Purwana, D.; Wibowo, A.; Saptono, A. Determinants of Entrepreneurial Intention among Millennial Generation in Emerging Countries. *Int. J. Entrep.* **2019**, *23*, 1–10.
11. Henry, C.; Hill, F.; Leitch, C. Entrepreneurship Education and Training: Can Entrepreneurship Be Taught? Part II. *Educ. Train.* **2005**, *47*, 158–169. [CrossRef]
12. Bae, T.J.; Qian, S.; Miao, C.; Fiet, J.O. The Relationship between Entrepreneurship Education and Entrepreneurial Intentions: A Meta-Analytic Review. *Entrep. Theory Pract.* **2014**, *38*, 217–254. [CrossRef]
13. Teixeira, S.; Casteleiro, C.; Rodrigues, R.; Guerra, M. Entrepreneurial intentions and entrepreneurship in European countries. *Int. J. Innov. Sci.* **2018**, *10*, 22–42. [CrossRef]
14. Bazkiaei, H.; Heng, L.; Khan, N.; Saufi, R.; Kasim, R. Do entrepreneurial education and big-five personality traits predict entrepreneurial intention among universities students? *Cogent Bus. Manag.* **2020**, *7*, 1801217. [CrossRef]

15. Hoang, G.; Luu, T.T.; Le, T.T.T.; Tran, N.; Tran, A.K.T. Examining the effects of entrepreneurship education on entrepreneurial intentions of Vietnamese business students: The roles of entrepreneurial alertness and resilience. *J. Educ. Bus.* **2023**, *98*, 462–470. [CrossRef]
16. Cui, J.; Bell, R. Behavioural entrepreneurial mindset: How entrepreneurial education activity impacts entrepreneurial intention and behaviour. *Int. J. Manag. Educ.* **2022**, *20*, 100639. [CrossRef]
17. Barba-Sánchez, V.; Atienza-Sahuquillo, C. Entrepreneurial intention among engineering students: The role of entrepreneurship education. *Eur. Res. Manag. Bus. Econ.* **2018**, *24*, 53–61. [CrossRef]
18. Nowiński, W.; Haddoud, M.Y.; Lančarič, D.; Egerová, D.; Czeglédi, C. The impact of entrepreneurship education, entrepreneurial self-efficacy and gender on entrepreneurial intentions of university students in the Visegrad countries. *Stud. High. Educ.* **2019**, *44*, 361–379. [CrossRef]
19. Pham, V.H.; Nguyen, T.K.C.; Nguyen, T.B.L.; Tran, T.T.T.; Nguyen, T.V.N. Subjective norms and entrepreneurial intention: A moderated-serial mediation model. *J. Entrep. Manag. Innov.* **2023**, *19*, 113–140. [CrossRef]
20. Elnadi, M.; Gheith, M.H. The role of individual characteristics in shaping digital entrepreneurial intention among university students: Evidence from Saudi Arabia. *Think. Ski. Creat.* **2023**, *47*, 101236. [CrossRef]
21. Hossain, M.I.; Tabash, M.I.; Siow, M.L.; Ong, T.S.; Anagreh, S. Entrepreneurial intentions of Gen Z university students and entrepreneurial constraints in Bangladesh. *J. Innov. Entrep.* **2023**, *12*, 12. [CrossRef]
22. Jena, R. Measuring the Impact of Business Management Student's Attitude towards Entrepreneurship Education on Entrepreneurial Intention: A Case Study. *Comput. Hum. Behav.* **2020**, *107*, 106275. [CrossRef]
23. Vamvaka, V.; Stoforos, C.; Palaskas, T.; Botsaris, C. Attitude toward entrepreneurship, perceived behavioral control, and entrepreneurial intention: Dimensionality, structural relationships, and gender differences. *J. Innov. Entrep.* **2020**, *9*, 5. [CrossRef]
24. Duong, D. The role of contextual factors on predicting entrepreneurial intention among Vietnamese students Dương Công Doanh. *Entrep. Bus. Econ. Rev.* **2021**, *9*, 169–188. [CrossRef]
25. Gurel, E.; Altinay, L.; Daniele, R. Tourism students' entrepreneurial intentions. *Ann. Tour. Res.* **2010**, *37*, 646–669. [CrossRef]
26. Colombelli, A.; Panelli, A.; Serraino, F. A Learning-by-Doing Approach to Entrepreneurship Education: Evidence from a Short Intensive Online International Program. *Adm. Sci.* **2022**, *12*, 16. [CrossRef]
27. Eniola, A.A.; Osigwe, K.C. *Entrepreneurship Education and Venture Intention*; Jones, P., Apostolopoulos, N., Kakouris, A., Moon, C., Ratten, V., Walmsley, A., Eds.; Emerald Publishing Limited: Leeds, UK, 2021; pp. 97–116. [CrossRef]
28. Bacigalupo, M.; Kampylis, P.; Punie, Y.; Van, D.B.L. EntreComp: The Entrepreneurship Competence Framework. Available online: <https://publications.jrc.ec.europa.eu/repository/handle/JRC101581> (accessed on 21 September 2024).
29. Jardim, J.; Bártolo, A.; Pinho, A. Towards a Global Entrepreneurial Culture: A Systematic Review of the Effectiveness of Entrepreneurship Education Programs. *Educ. Sci.* **2021**, *11*, 398. [CrossRef]
30. Feranita, F.; Mouawad, R.; Amin, M.; Woon Leong, L.; Rathakrishnan, T. Unveiling the Role of Entrepreneurial Education in Preparing the Next Generation of Entrepreneurs in Malaysia. In *Strategic Entrepreneurial Ecosystems and Business Model Innovation*; Emerald Publishing Limited: Leeds, UK, 2022; pp. 17–30, ISBN 978-1-80382-138-2. [CrossRef]
31. Ajzen, I. The theory of planned behavior. *Organ. Behav. Hum. Decis. Process.* **1991**, *50*, 179–211. [CrossRef]
32. Krueger, N.F.; Reilly, M.D.; Carsrud, A.L. Competing models of entrepreneurial intentions. *J. Bus. Ventur.* **2000**, *15*, 411–432. [CrossRef]
33. Liñán, F.; Rodríguez-Cohard, J.; Rueda-Cantuche, J. Factors Affecting Entrepreneurial Intention Levels: A Role for Education. *Int. Entrep. Manag. J.* **2011**, *7*, 195–218. [CrossRef]
34. Ayandibu, A.O. Entrepreneurship Education and Its Mode of Delivery. In *Delivering Entrepreneurship Education in Africa*; Iwu, C.G., Shambare, R., Eds.; Emerald Publishing Limited: Leeds, UK, 2023; pp. 245–268. ISBN 978-1-83753-326-8.
35. Kuratko, D.F. The Emergence of Entrepreneurship Education: Development, Trends, and Challenges. *Entrep. Theory Pract.* **2005**, *29*, 577–597. [CrossRef]
36. Solomon, G. An examination of entrepreneurship education in the United States. *J. Small Bus. Enterpr. Dev.* **2007**, *14*, 168–182. [CrossRef]
37. Cui, J.; Sun, J.; Bell, R. The impact of entrepreneurship education on the entrepreneurial mindset of college students in China: The mediating role of inspiration and the role of educational attributes. *Int. J. Manag. Educ.* **2021**, *19*, 100296. [CrossRef]
38. Colombelli, A.; Loccisano, S.; Panelli, A.; Pennisi, O.A.M.; Serraino, F. Entrepreneurship Education: The Effects of Challenge-Based Learning on the Entrepreneurial Mindset of University Students. *Adm. Sci.* **2022**, *12*, 10. [CrossRef]
39. Motta, V.F.; Galina, S.V.R. Experiential learning in entrepreneurship education: A systematic literature review. *Teach. Teach. Educ.* **2023**, *121*, 103919. [CrossRef]
40. Lekoko, M.; Rankhumise, E.; Ras, P. The effectiveness of entrepreneurship education: What matters most? *Afr. J. Bus. Manag.* **2012**, *6*, 12023–12032. [CrossRef]
41. Guerrero, M.; Urbano, D.; Cunningham, J.; Organ, D. Entrepreneurial universities in two European regions: A case study comparison. *J. Technol. Transf.* **2014**, *39*, 415–434. [CrossRef]
42. Lawshe, C.H. A quantitative approach to content validity. *Pers. Psychol.* **1975**, *28*, 563–575. [CrossRef]

43. Hair, J.F., Jr.; Black, W.C.; Babin, B.J.; Anderson, R.E. *Multivariate Data Analysis*; Prentice Hall: Upper Saddle River, NJ, USA, 2009; ISBN 978-0-13-813263-7.
44. Stadler, A.; Smith, A. Entrepreneurship in vocational education: A case study of the Brazilian context. *Ind. High. Educ.* **2017**, *31*, 81–89. [[CrossRef](#)]

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