

# Enhancing entrepreneurial intentions among vocational high school students in online business and marketing in East Java, Indonesia: The role of passion, education, and entrepreneurial skills in supporting SDGs

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**Abstract.** Answering the need to foster entrepreneurial intention among vocational school students, this study explores the impact of passion, education, and entrepreneurial skills on entrepreneurial intention. Conducted in the context of online business education and marketing in East Java, this study uses a quantitative approach with a sample of 547 students. The findings reveal a significant positive influence of passion, education, and entrepreneurial skills on intention. This study contributes to understanding the interaction of these factors in shaping entrepreneurial aspirations. Practical implications include increasing entrepreneurial activities to boost morale, ultimately encouraging new ventures, and reducing unemployment rates.

## 1 Introduction

Entrepreneurship contributes to the country's economy by creating high job opportunities, innovation, creativity, positive social development, and economic growth. Economic growth with the combination of information digitization and the internet has given rise to the possibility of a new combination called the Digital Economy [1]. Readiness and ability of digital transformation in the digital economy era to improve entrepreneurial performance with better competitiveness [2]. The digital economy affects the dynamics of entrepreneurial activity development systems and pathways and presents new opportunities to improve entrepreneurial competence [3]. Awareness of the importance of entrepreneurship must be instilled from an early age, especially in students, so that they can contribute to job creation and start new businesses. Low entrepreneurial intention leads to low levels of entrepreneurship. Therefore, the role and participation of all groups is needed to increase entrepreneurial intentions.

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Becoming an entrepreneur is a challenging life choice, and for vocational school graduates, it's a way to prove to parents, friends, relatives, and others that they can succeed on their own. Today, young people are already able to determine their life path or prove that they can be more successful than their parents, who have been working for decades but have not seen a significant change in their circumstances. Entrepreneurship has become a job for young people to prove themselves (self-actualization) [4].

Entrepreneurial intention is understood through behavioral theory. Planned Behavior Theory Ajzen and Fishbein argue that the intention to engage in a particular behavior can be estimated based on attitudes towards behavior, subjective norms, and perceptions of behavioral control. Entrepreneurial intentions are shaped by internal and external factors [5]. Internally, an individual's entrepreneurial intentions can be influenced by their ability to tap into their passion or enthusiasm for a career in entrepreneurship. Externally, entrepreneurship education plays an important role in motivating individuals to pursue entrepreneurship [6]. The researchers examined the impact of "Entrepreneurial Passion and Entrepreneurial Education on Entrepreneurial Intention through Entrepreneurial Skills as an Intervening Variable" among students specializing in Online Business and Marketing at vocational schools in East Java.

The study titled "Student Entrepreneurial Skills: A Family Embedding Perspective" shows that entrepreneurial intentions are shaped by individual factors, including entrepreneurial skills and a willingness to participate in entrepreneurial activities through education. Research conducted by Pieter Seuneke et al. [7], titled "Moving Beyond Entrepreneurial Skills: Key Factors Driving Entrepreneurial Learning in Multifunctional Agriculture," highlights that competencies in entrepreneurial skills can have an impact on entrepreneurship education and help the development of students in the agricultural sector. These results underscore the importance of integrating entrepreneurial skills into educational programs to enhance students' entrepreneurial abilities. Alakaleek's [8] study, "The Status of Entrepreneurship Education in Jordan Universities," reveals that entrepreneurship education in Jordan is still in its infancy, with offerings mostly limited to a few basic courses on small business and entrepreneurship. Only one university in Jordan provides a specialized graduate program in entrepreneurship, and 27.5 percent of universities have a center for innovation and entrepreneurship but do not have a dedicated department of entrepreneurship. The evolution of entrepreneurship education in Jordan began with small business management courses, with the first center established in 2004 and an entrepreneurship early education program launched in 2012.

The research conducted by Beranek [9] entitled "The attitude of the college students to entrepreneurial skills development in the subject e-commerce," is based on the premise that entrepreneurial skills can be taught and not just the result of inherent personal traits. This study supports the idea that general entrepreneurship education effectively improves entrepreneurial skills. Similarly, Jardim [10] in his research, "Entrepreneurial Skills to Be Successful in the Global and Digital World: Proposal for a Framework of Entrepreneurial Education," uses a survey method for data collection through questionnaires distributed through Google Forms. These findings highlight a three-dimensional model of entrepreneurial skills, which includes openness to new ideas, developing solutions to emerging challenges, and effective communication. This model encompasses a diverse set of skills including creativity and innovation, initiative, self-confidence and resilience, strategic planning and assessment, problem-solving and decision-making, transformational leadership, effective and visual communication, teamwork and networking, as well as digital communication.

Shahzad, et al. [11] explore the factors influencing entrepreneurial intention in start-ups, focusing on entrepreneurial skills, risk-taking tendencies, and innovation in open business models. Their study examines how entrepreneurship education serves as a foundation for

developing entrepreneurial intentions. The findings show that self-motivation, support from family, peer influence, and institutional support all significantly and positively influence entrepreneurial intentions. In addition, the presence of entrepreneurial skills, a willingness to take risks, and a drive for innovation further reinforce this intention among recent graduates. Categorical analyses were conducted to distinguish the characteristics of individuals who are likely to start a new business, revealing striking differences based on gender and educational background. The conceptual model provided offers more precise insights for male and graduate students. These results can encourage young graduates to pursue new entrepreneurial ventures using open business models, contributing to a dynamic and progressive economy driven by technological innovation.

Jardim [10] conducted a systematic review to evaluate the effectiveness of entrepreneurship education programs and their role in fostering a global entrepreneurial culture. The study reveals a growing emphasis on entrepreneurial skills in primary and secondary education. The programs reviewed vary in duration from one week to two years. The findings show that most of these programs successfully improve entrepreneurial skills at all stages of education. Nevertheless, there was no confirmed increase in the intention to start a business, since this motivation was also influenced by socio-cultural and family influences. This review underscores the importance of developing and implementing an entrepreneurship education program early in a student's educational journey, as this period is crucial for laying the foundation for entrepreneurial skills and intentions.

In line with the Sustainable Development Goals (SDGs), specifically SDG 4 (Quality Education) and SDG 8 (Decent Work and Economic Growth), this study emphasizes the important role of incorporating entrepreneurship education into the academic curriculum to prepare students with the skills and mindsets needed for sustainable development. By nurturing entrepreneurial skills and intentions, vocational high schools can contribute significantly to sustainable economic growth and lower unemployment rates, thereby advancing the broader goals of the SDGs. This study seeks to answer the following questions: (1) What is the impact of entrepreneurial passion on the entrepreneurial intention of BDP vocational students in East Java? (2) How do entrepreneurship education affect the entrepreneurial intention of BDP vocational students in East Java? (3) What role does entrepreneurial skills play as an intervention variable between entrepreneurial desire and entrepreneurial intent? (4) How do entrepreneurial skills function as an intervention variable between entrepreneurship education and entrepreneurial intent? The novelty of this study lies in the integration of entrepreneurial spirit and the influence of entrepreneurship education on entrepreneurial intentions, with entrepreneurial skills that function as intervention variables. This is a typical approach, as most studies usually examine internal or external factors separately. In addition, the special focus on vocational students in Online Business and Marketing (BDP) in East Java offers a new perspective, addressing the underexplored areas of entrepreneurship education at the vocational level within a rapidly growing sector. The study also underscores the importance of the digital economy in improving entrepreneurial competence, providing valuable insights in the context of ongoing digital transformation. Thus, this study adds depth to the literature on the factors that affect entrepreneurial intention and provides practical guidance for developing more effective entrepreneurship education programs in the digital era.

## **2 Method**

This study uses a quantitative methodology, integrating descriptive and analytical approaches. The study investigates how entrepreneurial spirit and entrepreneurship education influence entrepreneurial intentions, with entrepreneurial skills acting as an intermediary variable, with a focus on vocational school students specializing in Business and Online

Marketing (BDP) in East Java. The study targeted the entire population of students in this major throughout East Java, which represents a broad and undefined population. From this group, a sample of 547 students was selected. A non-random sampling method was used, specifically combining incidental and quota sampling techniques, with data collected through a Google Forms questionnaire.

The survey uses a 5-point Likert scale, ranging from "Strongly Disapprove" to "Strongly Agree", to evaluate factors such as entrepreneurial passion, education, skills, and intention. This scale provides a nuanced view of participants' attitudes and perceptions. To ensure the validity of the content, the questionnaires are reviewed by experts in entrepreneurship and educational research, confirming that the questions accurately measure the intended construction. The data collection process is carefully designed and implemented to uphold the accuracy and reliability of the information collected.

For data analysis, this study uses partial least squares structural equation modeling (PLS-SEM), starting with path analysis as depicted in Figure 1. The decision to use SMARTPLS version 3.0 is influenced by its flexibility, as it is not limited by assumptions such as requirements for normal distribution. In addition, the validity and reliability of the question items, which support variable indicators, are tested. The collected values are then used as indicators for each variable.

**Table 1.** Characteristics of Respondents

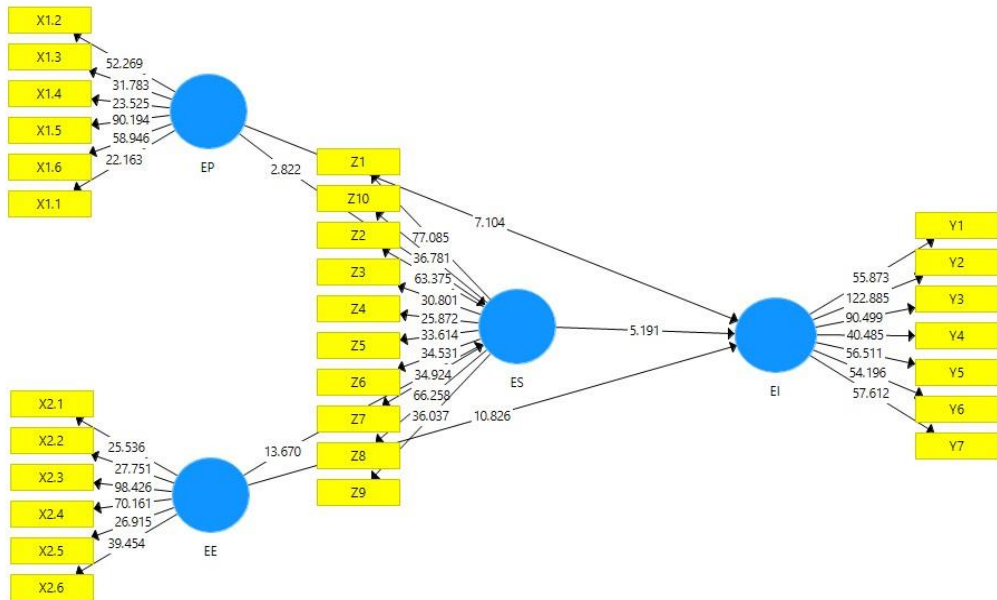
<b>Categorically</b>		<b>Frequency</b>	<b>%</b>
Gender	Man	438	80.2
	Woman	109	19.8
Agency	SMKN	9	64.2
	Private Vocational Schools	5	35.8
Class	X	65	12.1
	XI	264	48.2
	XII	218	39.7

### 3 Results and Discussion

The first step in building an outer model in partial least squares (PLS) analysis is to verify the reliability of the instrument used. A model is considered reliable when the composite reliability (CR) and Alpha Cronbach values exceed 0.70. In this study, the CR value for each construction ranged from 0.923 to 0.965, confirming the achievement of reliability (see Table 2). In addition, convergent validity is indicated when the extracted mean-variance (AVE) is greater than 0.50. In this analysis, all items showed AVE values above 0.6, with the AVE for each construction ranging from 0.668 to 0.798, thus confirming the validity of convergence. In addition to the validity of convergence, this study also assesses the validity of discrimination through cross-loading factors. As shown in Table 3, the cross-loading values for all variables (entrepreneurial passion, entrepreneurial education, entrepreneurial skills, and entrepreneurial intent) exceeded 0.70, indicating that the variable met the criteria for the validity of discrimination.

The collinearity test was carried out to evaluate the existence of collinearity among variables, by utilizing the Inflation Factor (VIF) Variant as an indicator. A VIF value below 5.00 serves as a benchmark to determine collinearity. Preliminary analysis showed that all variables had a VIF value between 1,617 and 4,595, confirming the absence of collinearity among the constructions and thus validating them. To test the hypothesis in the model,

structural equation modeling is applied. Statistics  $t$  are derived through bootstrapping, with results based on 500 bootstrap samples. As detailed in Table 4, the seven hypotheses proposed in this study met the necessary criteria, with the  $t$ -values for each relationship ranging from 2,822 to 13,670, exceeding the minimum threshold of 1.96.



**Fig. 1.** Structural Model Test Results

The R-square ( $R^2$ ) model reflects the accuracy of the model's predictions (Hair et al., 2020).  $R^2$  values of 0.75 or higher are considered substantial, while values of 0.50 and 0.25 are considered moderate and weak, respectively. The analysis showed that entrepreneurial passion (EP), entrepreneurial education (EE), and entrepreneurial intention (EI) collectively accounted for 49.6% of the entrepreneurial skill (ES) variance, indicating a moderate level of predictive accuracy. Similarly, EP, ES, and EI together accounted for 61.9% variance in entrepreneurial skills, also showing moderate predictability. Likewise, EE, ES, and EI collectively accounted for 53.6% of the variance in entrepreneurial skills, again demonstrating moderate prediction accuracy. Furthermore, the  $f^2$  effect measure was calculated to assess whether exogenous construction had a significant influence on endogenous construction.

**Table 2.** Calculation of Outer Model

Build	Items	$\lambda$	$\alpha$	CR	AVE
EP	EP 1	0.753	0.916	0.932	0.696
	EP 2	0.892			
	EP 3	0.813			
	EP 4	0.742			
	EP 5	0.914			
	EP 6	0.874			
EE	EE1	0.775	0.901	0.923	0.668

Build	Items	$\lambda$	$\alpha$	CR	AVE
	EE 2	0.777			
	EE 3	0.927			
	EE 4	0.907			
	EE 5	0.716			
	EE 6	0.779			
ES	ES1	0.908	0.952	0.958	0.694
	ES2	0.885			
	ES3	0.806			
	ES4	0.771			
	ES5	0.847			
	ES6	0.845			
	ES7	0.830			
	ES8	0.893			
	ES9	0.759			
	ES10	0.773			
EI	EI1	0.881	0.958	0.965	0.798
	EI2	0.941			
	EI3	0.924			
	EI4	0.842			
	EI5	0.883			
	EI6	0.889			
	EI7	0.891			

In the table provided, the outer model indicators are displayed, including factor loading ( $\lambda$ ), Cronbach's Alpha ( $\alpha$ ), Composite Reliability (CR), and Average Variance Extracted (AVE). This metric evaluates the reliability and validity of the measurement model. The Load Factor ( $\lambda$ ) indicates the strength of the relationship between each indicator and its respective construction. All factor loads exceed the recommended minimum of 0.7, signaling a strong relationship. Alpha Cronbach ( $\alpha$ ) rated the internal consistency or reliability of an item in each construction, with all values exceeding 0.7, reflecting strong reliability. Composite Reliability (CR), similar to Alpha Cronbach, measures the internal consistency of an item, with all values significantly exceeding 0.7, indicating high reliability. Average Variance Extracted (AVE) evaluates the proportion of variance captured by the construction relative to the variance caused by measurement errors, with all AVE values exceeding 0.5, confirming good convergence validity.

**Table 3.** Validity of Discrimination

Build	EE	EI	EP	ES
EE	0.817			
EI	0.755	0.894		
EP	0.828	0.458	0.834	
ES	0.807	0.743	0.590	0.833

Validity discrimination evaluates how well a construction is distinguished from other constructions in the model. The table presented shows the square root of the Average Variance Extracted (AVE) values along the diagonal, with the correlation between the constructions shown below the diagonal. The diagonal value, which is bolded, represents the square root of the AVE for each construction and is higher than the correlation between constructions. This shows the strong validity of the discrimination. The off-diagonal values show the correlation between different constructions, which is generally lower than the square root of the AVE for each construction, which further supports the validity of the model's discrimination. Overall, the table shows that each construction is different from the other, confirming that the validity of discrimination is effectively established in the measurement model.

**Table 4.** Hypothesis Testing

Hypothesis	Relationship	T Value	P value	Decision
H1	EE -> EI	10.826	0.000	Confirmed
H2	EE -> ES	13.670	0.000	Confirmed
H3	EP -> EI	7.104	0.000	Confirmed
H4	EP-> ES	2.822	0.005	Confirmed
H5	ES-> EI	5.191	0.000	Confirmed
H6	EE -> ES -> EI	5.735	0.000	Confirmed
H7	EP -> ES -> EI	3.129	0.002	Confirmed

Source: processed by researchers, 2023

The table displays the results of hypothesis testing, including the relationship between construction, T-value, P-value, and decisions made based on significance level (e.g., 0.05). The T-value measures the strength of each relationship, with higher values indicating stronger connections. The P-value indicates the probability that the observed relationship occurs randomly. A P value lower than the significance level (e.g., 0.05) indicates that the relationship is statistically significant. The decision column verifies whether each hypothesis is supported based on a P-value. The hypothesis is supported if the P-value is less than the significance threshold. In conclusion, all hypotheses (H1 to H7) are supported, as their P-values are below the significance level, showing a statistically significant relationship among the constructions in the model.

Vocational students need to study entrepreneurship to foster entrepreneurial intentions, with the hope that after graduation, they will be able to create new businesses and contribute positively to society. This study examines the relationship between students' perceptions of entrepreneurship education and entrepreneurial passion in preparing them for entrepreneurship. The sample includes 547 vocational students majoring in online business and marketing. Research findings and data interpretation highlight the importance of implementing entrepreneurship education at different grade levels in vocational schools. In addition to entrepreneurship education, other important factors include the encouragement that comes from the entrepreneurial spirit of each student, which will certainly facilitate the development of entrepreneurial intentions.

Schools also play a crucial role in improving students' skills, providing them with the necessary tools to create businesses with innovation or differentiation from others, and managing employees effectively. Therefore, schools must realign themselves as key drivers of student skill development and expand opportunities for the most vulnerable graduates to contribute to global skills needs. The application of vocational training in each vocational



school is one way to develop entrepreneurial skills, with the hope that students will gain special knowledge and focus on a specific field for entrepreneurship. Although students' skills may vary, this skill improvement is expected to enable vocational school students to become entrepreneurs in various fields according to their abilities. Additional support, such as pedagogical activities related to extracurricular programs, internships offered by the school, group work experiences, workshops, and seminars, positively impacts students' ability to create new businesses [12, 13].

Concerns about youth employment and barriers to fostering young entrepreneurs with independent ventures highlight the need for a strategic approach to entrepreneurship education. Embracing entrepreneurship as an important and sustainable solution motivates the integration of entrepreneurial competencies into the school curriculum. This study aims to examine the extent of entrepreneurial intentions among vocational school students, especially those specializing in online business and marketing. Utilizing Partial Least Squares Structural Equation Modeling (PLS-SEM), this study uses surveys to establish a positive relationship between entrepreneurship education, enthusiasm, skills, and intentions, while exploring the effects of moderation and determination [14, 15]. This research enhances existing knowledge by describing how these factors are interconnected and offers insights into the perspectives of vocational students in online business and marketing programs in East Java. Entrepreneurial skills include competencies that go beyond business creation, increasing students' confidence in their ability to achieve entrepreneurial and career goals.

Research analysis reveals that entrepreneurial passion among students can indeed prepare them to establish a new business, supported by their entrepreneurial skills. These findings emphasize the relationship between internal motivation and external influences that support entrepreneurial intent [16]. This study identifies the positive and significant impact of competency development related to entrepreneurial passion and skills, which in turn supports entrepreneurial education competencies and increases the entrepreneurial intention of vocational students. This underscores the importance of strengthening curricula and course programs that focus on developing processes, techniques, and tools aimed at increasing entrepreneurial intent. This research also highlights the importance of soft skill development, which further supports the application of entrepreneurial skills and increases entrepreneurial intentions.

In addition, this research contributes to the literature by proposing a framework for assessing competencies related to entrepreneurial intentions that can be adopted by vocational schools specializing in online business and marketing [17]. Research and analysis show that several variables, including entrepreneurship education, entrepreneurial passion, and entrepreneurial skills, affect the development of entrepreneurial intentions. Among them, entrepreneurial passion was identified as the most dominant variable in encouraging an increase in entrepreneurial intentions. While external support such as entrepreneurship education and skill development are essential, the importance of entrepreneurial spirit cannot be overstated, as it provides significant motivation to increase entrepreneurial intentions.

Research conducted among vocational students majoring in Online Business and Marketing in East Java has provided significant insights into the interaction between entrepreneurial spirit, education, skills, and intention. By utilizing Partial Least Squares Structural Equation Modeling (PLS-SEM), this study identifies a strong positive correlation between these factors, offering valuable implications for academic research and practical applications. The key finding is the substantial influence of entrepreneurial spirit in shaping students' entrepreneurial intentions. This internal motivation, driven by an individual's enthusiasm and commitment to entrepreneurship, emerges as an important factor in determining the willingness to pursue new business ventures. The study also emphasizes the important role of entrepreneurship education. Integrating entrepreneurship into the school curriculum, in addition to extracurricular activities, workshops, and internships, has proven



to be a significant external factor positively related to increased entrepreneurial intentions among students. In addition, the development of entrepreneurial skills was identified as an important contributor to increasing entrepreneurial intentions [18]. The study highlights the importance of technical skills and soft skills in fostering a proactive and innovative mindset among vocational students.

In line with the Sustainable Development Goals (SDGs), in particular SDG 4 (Quality Education) and SDG 8 (Decent Work and Economic Growth), these findings underscore the importance of entrepreneurship education and skills development in promoting sustainable economic growth and reducing unemployment. By fostering entrepreneurial intentions and skills, vocational high schools can make a significant contribution to achieving these global goals. In light of these findings, several recommendations emerged to improve the entrepreneurial ecosystem within educational institutions. First, institutions are encouraged to strategically improve entrepreneurship education in their curriculum. Structured programs and activities should be designed to foster an entrepreneurial mindset and provide practical insights. Prioritizing the recognition and nurturing of entrepreneurial passion is also important, creating an environment that motivates students to explore their interests and align them with entrepreneurial opportunities.

## 4 Conclusion

The implementation of targeted skills development programs, which include technical skills and soft skills, is essential. These programs should equip students with the competencies necessary to succeed in entrepreneurial endeavors. Building partnerships with industry stakeholders can bridge the gap between academia and real-world entrepreneurship. Internships, collaborative projects, and mentorship programs can offer students valuable insights and experience. Finally, ongoing research and evaluation of entrepreneurship programs is essential. Educational institutions must regularly assess the effectiveness of their initiatives and make necessary adjustments to align with evolving market needs.

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