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Enhancing entrepreneurial intentions among vocational high school students

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ABSTRACT

This study investigates the determinants of entrepreneurial intentions among vocational high school students, focusing on the roles of entrepreneurial education, family support, and school support, with entrepreneurial self-efficacy as a mediating variable. Employing a quantitative approach with cross-sectional design. Data were collected from 214 students in the Business and Marketing Department of Vocational High School, Indonesia. The instrument that used in this research is entrepreneurial intention. For data analysis, the study utilized Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that school support significantly influences entrepreneurial intentions, with entrepreneurial self-efficacy acting as a key mediator between external support systems and entrepreneurial aspirations. Interestingly, while school support demonstrates the strongest direct impact on entrepreneurial intentions, its mediated effect through self-efficacy is comparatively smaller. The study underscores the importance of robust educational frameworks, family encouragement, and institutional facilitation in nurturing entrepreneurial mindsets. Practical implications include curriculum enhancement, teacher training in entrepreneurship education, and fostering collaborative support systems between families and schools. This research contributes to the literature by offering a comprehensive model of entrepreneurial intention formation in the context of vocational education, particularly in emerging economies.

Introduction

Entrepreneurship is a key driver of economic growth at both regional and national levels (Butt, Alghababsheh, Arshi, & Shah, 2022). It helps reduce poverty, improve societal well-being (Hassan, Saleem, Anwar, & Hussain, 2020), and lower unemployment rates (Natrajan, 2022). In Indonesia, data from the Badan Pusat Statistik (2023) indicate that 7.86 million people were unemployed between 2019 and August 2023, with vocational high school (SMK) graduates consistently experiencing the highest unemployment rates. This issue arises primarily due to challenges in entering the labor market. Many young graduates prefer stable jobs that provide a regular income

over the uncertainties and risks of entrepreneurship (Ventista & Brown, 2023). However, fostering entrepreneurial intentions among students has been recognized as a crucial strategy for addressing unemployment and promoting economic resilience (Fatoki, 2014; Hoang, Le, Tran, & Du, 2020).

Entrepreneurial intention is widely regarded as a key outcome of entrepreneurship education and a significant predictor of entrepreneurial behavior (Saoula, Shamim, Ahmad, & Abid, 2023; Shi, Yao, & Wu, 2020). A strong entrepreneurial intention not only facilitates individual self-sufficiency but also contributes to job creation and economic development (Al-Tekreeti, Al Khasawneh, & Dandis, 2024). Effective entrepreneurship education equips students with the necessary knowledge, skills, and mindset to navigate the complexities of starting and sustaining a business (Anjum, Farrukh, Heidler, & Díaz Tautiva, 2020). However, the impact of entrepreneurship education on entrepreneurial intentions remains debated, as some studies highlight its positive influence (Panigrahi & Joshi, 2015), while others report minimal or no significant effects (Khalifa & Dhiaf, 2016; Nowiński, Haddoud, Lančarič, Egerová, & Czeglédi, 2019). These inconsistencies underscore the need to examine other contributing factors.

Beyond formal education, family and school environments play a crucial role in shaping students' entrepreneurial aspirations. Family support serves as a critical factor in fostering entrepreneurial motivation by providing financial, emotional, and experiential resources (Hameed & Irfan, 2019). Students with entrepreneurial family backgrounds are more likely to develop a proactive entrepreneurial mindset and perceive business ventures as viable career options (Periera, Mashabi, & Muhariati, 2017). Furthermore, school support, including mentorship, business incubation programs, and extracurricular activities, enhances students' confidence and readiness to pursue entrepreneurship (Al Amimi & Ahmad, 2023). Schools that integrate practical entrepreneurial experiences into their curricula create an enabling ecosystem that nurtures students' risk-taking ability and problem-solving skills (Saoula, et al., 2023).

This study investigates the interplay between entrepreneurial education, family support, and school support in shaping entrepreneurial intentions among vocational high school students, with entrepreneurial self-efficacy acting as a mediating variable. Entrepreneurial self-efficacy, which reflects an individual's confidence in their ability to perform entrepreneurial tasks, has been identified as a crucial determinant of entrepreneurial intention (Saeed, Yousafzai, Yani-De-Soriano, & Muffatto, 2018). By focusing on vocational high school students majoring in online business and marketing, this research offers valuable insights into the factors influencing entrepreneurial aspirations in emerging economies.

This study makes significant contributions to the field of entrepreneurship by identifying key determinants of entrepreneurial intention within the vocational education context. Unlike previous research, which predominantly focuses on university students and non-Indonesian settings (Sahid, Norhisham, & Narmaditya, 2024; Shi, et al., 2020; Sim, Galloway, Ramos, & Mustafa, 2023), this study provides a nuanced understanding of entrepreneurial intention among vocational high school students. Practically, the findings offer policy recommendations for enhancing entrepreneurship education and support systems in vocational schools. Given that 2.2 million vocational school graduates neither pursue higher education nor enter the workforce (Kompas, 2024; Statistik, 2023), this research assesses the relevance of the curriculum for online business and marketing majors and highlights the role of family and school support in fostering entrepreneurial aspirations. By doing so, it aims to bridge the gap between vocational education and entrepreneurial success.

Based on the insights derived from previous research and the systematically formulated hypotheses, a research model has been established, as depicted at Figure 1. The conceptual framework in Figure 1 illustrates the interrelationships between entrepreneurial education, family support, school support, entrepreneurial self-efficacy, and entrepreneurial intentions. Entrepreneurial education plays a crucial role in equipping students with the necessary knowledge, skills, and confidence to pursue entrepreneurial careers (Panigrahi & Joshi, 2015). As depicted in the model, entrepreneurial education is hypothesized to have both a direct influence on entrepreneurial intentions (H5) and an indirect effect through entrepreneurial self-efficacy (H8). Entrepreneurial self-efficacy, defined as an individual's belief in their ability to successfully engage

in entrepreneurial activities, has been widely recognized as a key determinant of entrepreneurial intentions (Saeed, et al., 2018; Thuc, 2024).

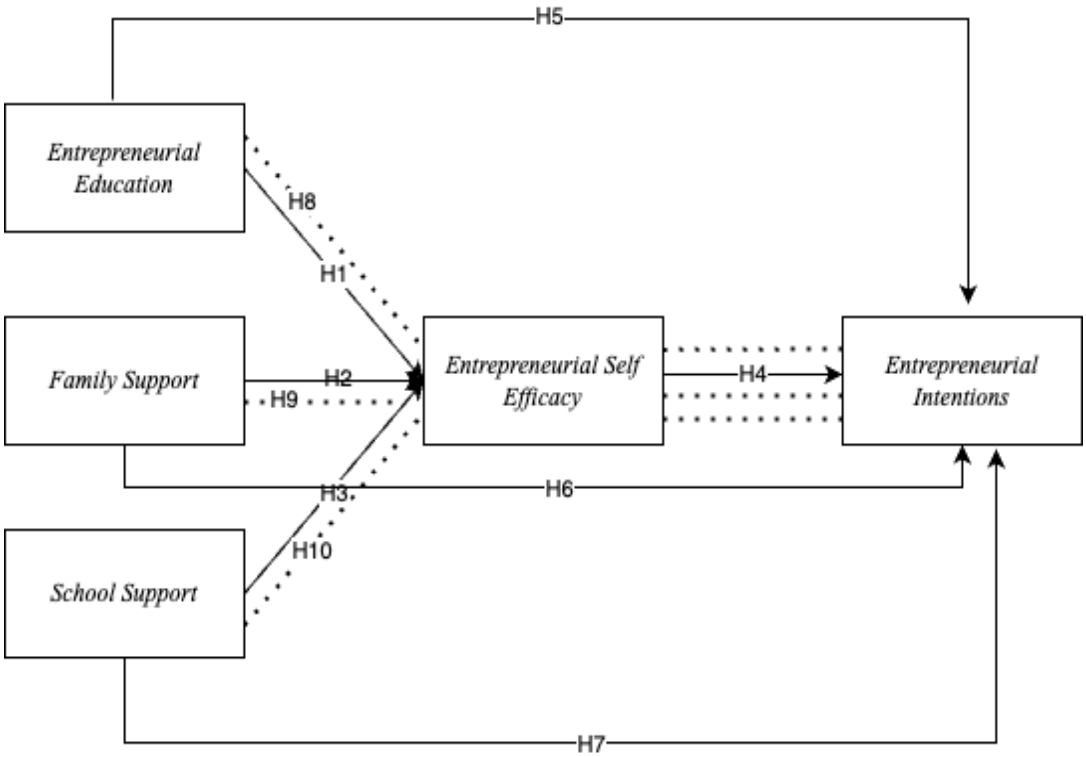

Figure 1. Conceptual Frameworth. Source: Saoula et al., (2023) and Hareb et al., (2023)

Beyond education, external factors such as family and school support significantly contribute to the development of entrepreneurial self-efficacy and intentions. Family support, including financial, emotional, and motivational assistance, fosters students' confidence in starting a business (Hameed & Irfan, 2019). The model suggests that family support directly enhances entrepreneurial self-efficacy (H2) and entrepreneurial intentions (H9), indicating that students from entrepreneurial families may have stronger entrepreneurial aspirations (Periera, et al., 2017). Similarly, school support–through mentorship, business incubation programs, and extracurricular entrepreneurship activities–provides students with the practical experience and encouragement needed to develop entrepreneurial competencies (Al Amimi & Ahmad, 2023). This support mechanism is expected to positively influence both entrepreneurial self-efficacy (H3) and entrepreneurial intentions (H7).

Furthermore, entrepreneurial self-efficacy is positioned as a mediating variable that translates the benefits of entrepreneurial education, family support, and school support into stronger entrepreneurial intentions (H4, H6, H10). Previous studies have demonstrated that students with higher self-efficacy are more likely to perceive entrepreneurial opportunities and overcome barriers to business creation (Dissanayake, 2014; Miao, 2015). By integrating multiple sources of influence, this model builds upon the frameworks of Saoula et al. (2023) and Al Amimi and Ahmad (2023), providing a comprehensive understanding of the factors shaping entrepreneurial intentions among vocational high school students. This study contributes to the literature by examining these relationships within the context of emerging economies, where entrepreneurship is increasingly promoted as a strategy for addressing youth unemployment and fostering economic growth (Anjum, et al., 2020).

The purpose of this study is to examine the influence of entrepreneurial education, family support, and school support on entrepreneurial intentions, with entrepreneurial self-efficacy acting as a mediating variable, particularly among vocational high school students in the online business and marketing field.

Method

Research Design

This study employs a quantitative research approach that focuses on numerical data, statistical analysis, and hypothesis testing to examine the relationships among variables (Leavy, 2022). The research design follows a cross-sectional survey method, which involves collecting data at a single point in time to analyze the relationships among the constructs of interest.

Population and Sampling Method

The population for this study consists of 11th and 12th grade students enrolled in the Online Business and Marketing Department at Vocational High Schools in Indonesia. The target sample was drawn using a non-probability purposive sampling technique, selecting students who had previously participated in entrepreneurial education programs.

The G-Power sample size calculation method was used to determine a minimum required sample size of 138 respondents. However, to enhance the statistical power and account for potential nonresponses, 214 students were included in the final sample.

Instrument

The study utilized a structured survey questionnaire as the primary data collection instrument. The questionnaire comprised multiple sections that measured the following constructs: Entrepreneurial Education, Entrepreneurial Intentions, School Support, Family Support and Entrepreneurial Self-Efficacy.

Procedures

The data collection was conducted over four weeks using an online survey (Google Forms). Before completing the questionnaire, students were provided with an informed consent form explaining the purpose of the study, confidentiality assurances, and voluntary participation rights. Ethical clearance was obtained from the relevant institutional review board (IRB), ensuring compliance with research ethics guidelines.

Data Analysis

Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4 software. PLS-SEM was selected due to its suitability for modeling complex relationships among latent variables and its robustness in handling non-normal data distributions (Solling Hamid & M Anwar, 2019). The analysis was performed in two stages: (1) Measurement Model Assessment: Evaluated the validity and reliability of constructs through factor loadings, Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE); (2) Structural Model Assessment: Tested hypothesized relationships using path coefficients (β), t-values, and p-values, with a statistical significance level set at $p < 0.05$ (Rasoolimanesh, 2022).

Results and Discussions

Based on Table 1, the demographic analysis reveals that out of the 214 respondents, 87.6% were female (N = 184), and 12.4% were male (N = 26). Equal distribution was observed across the 11th and 12th grades, with each group comprising 50% of the sample (N = 105). These proportions align with the composition of students in the Online Business and Marketing Department at Vocational High School, providing a balanced representation of the target population.

Table 1. Respondent Profile

Demografis	Category	Frequency	Percent (%)
Gender	Female	184	87.6
	Male	26	12.4
Group Class	Class 11	105	50
	Class 12	105	50

The Validity and Reliability Measurement Model

According to Mohd Dzin and Lay (2021) the outer model, also referred to as the measurement model, is employed to evaluate the validity and reliability of the constructs used in a study. As per the guidelines proposed by (Mohd Dzin & Lay, 2021) and (Solling Hamid & M Anwar, 2019), the rule of thumb for assessing convergent validity requires that loading factor values exceed 0.7 for confirmatory research and fall between 0.6 and 0.7 for exploratory research. Furthermore, the Average Variance Extracted (AVE) value must be greater than 0.5 to indicate adequate convergent validity.

The results of the analysis presented in Table 2 demonstrate that all variable indicators exhibit excellent loading factor values: EE (Entrepreneurial Education) ranges from 0.884 to 0.916, ESE (Entrepreneurial Self-Efficacy) ranges from 0.888 to 0.944, FS (Family Support) ranges from 0.848 to 0.914, SS (School Support) ranges from 0.898 to 0.927, and EI (Entrepreneurial Intentions) ranges from 0.920 to 0.954. These values exceed the threshold recommended for confirmatory research (≥0.7), as outlined by Ghozali and Latan (2015). Additionally, the AVE values for all constructs surpass the minimum recommended criterion (≥0.5), with EE at 0.792, ESE at 0.833, FS at 0.785, SS at 0.837, and EI at 0.880. These results indicate that each construct successfully explains more than 50% of the variance in its respective indicators.

Table 2. Reliability and Validity of the Constructs

Variabel	Factor Loadings	α	CR	AVE	EE	ESE	FS	SS	EI
EE	0.884 - 0.916	0.934	0.95	0.792	1				
ESE	0.888 - 0.944	0.967	0.972	0.833	0.955	1			
FS	0.848 - 0.914	0.954	0.962	0.785	0.861	0.895	1		
SS	0.898 - 0.927	0.972	0.975	0.837	0.974	0.929	0.871	1	
EI	0.920 - 0.954	0.977	0.981	0.88	0.93	0.829	0.756	0.929	1

Note(s) : α = Cronbach's alpha ; CR = Composite reliability ; AVE = Average variance extracted
Source (s) : Developed by authors

Reliability analysis was conducted using Cronbach's alpha (α) and composite reliability (CR). According to (Hair, Risher, Sarstedt, & Ringle, 2019), a Cronbach's alpha value greater than 0.7 is considered to indicate satisfactory reliability. Similarly (Haji-Othman & Yusuff, 2022) assert that CR values should exceed 0.7 to ensure acceptable internal consistency. The results in Table 2 indicate that all constructs exhibit high levels of reliability, with Cronbach's alpha values of EE at 0.934, ESE at 0.967, FS at 0.954, SS at 0.972, and EI at 0.977. Furthermore, the CR values consistently confirm the constructs' reliability, with EE at 0.950, ESE at 0.972, FS at 0.962, SS at 0.975, and EI at 0.981. These findings, based on the standards established by Hair et al., (2019), confirm that the constructs possess excellent internal reliability and consistency.

Structural Model

Bootstrapping analysis was performed using SmartPLS 3.2.9 with a sample size of 210 to evaluate the significance of the path coefficients in the structural model and hypothesis testing. The analysis assessed both direct and indirect effects using regression coefficients, t-values, and p-values (Hair, et al., 2019). This method ensures accurate estimations, thereby supporting the reliability and validity of the structural model (Hair, et al., 2019). The results of the bootstrapping analysis are illustrated in Figure 2.

Figure 2 Shows that the image illustrates the structural model of the study, analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). It presents the relationships between latent variables, namely Entrepreneurial Education (EE), Family Support (FS), School Support (SS), Entrepreneurial Self-Efficacy (ESE), and Entrepreneurial Intention (EI). The latent variables are represented as blue circles, while the yellow rectangles represent their respective indicator variables. Path coefficients, denoted by numerical values along the connecting arrows, indicate the strength of relationships between constructs. The model demonstrates that EE, FS, and

SS have direct effects on ESE, which in turn influences EI. Additionally, FS and SS also show a direct relationship with EI, signifying their independent contributions to entrepreneurial intentions.

Furthermore, the numerical values associated with each indicator represent factor loadings, which measure the extent to which each observed variable contributes to its respective latent construct. Higher values suggest stronger contributions to the construct's validity. The model also displays the mediating role of ESE in the relationship between EE, FS, and SS with EI, reinforcing its significance in shaping students' entrepreneurial intentions. The structural model evaluation helps to confirm the reliability and validity of the constructs while also testing the hypothesized relationships, ultimately providing insights into the key determinants of entrepreneurial intentions among vocational high school students.

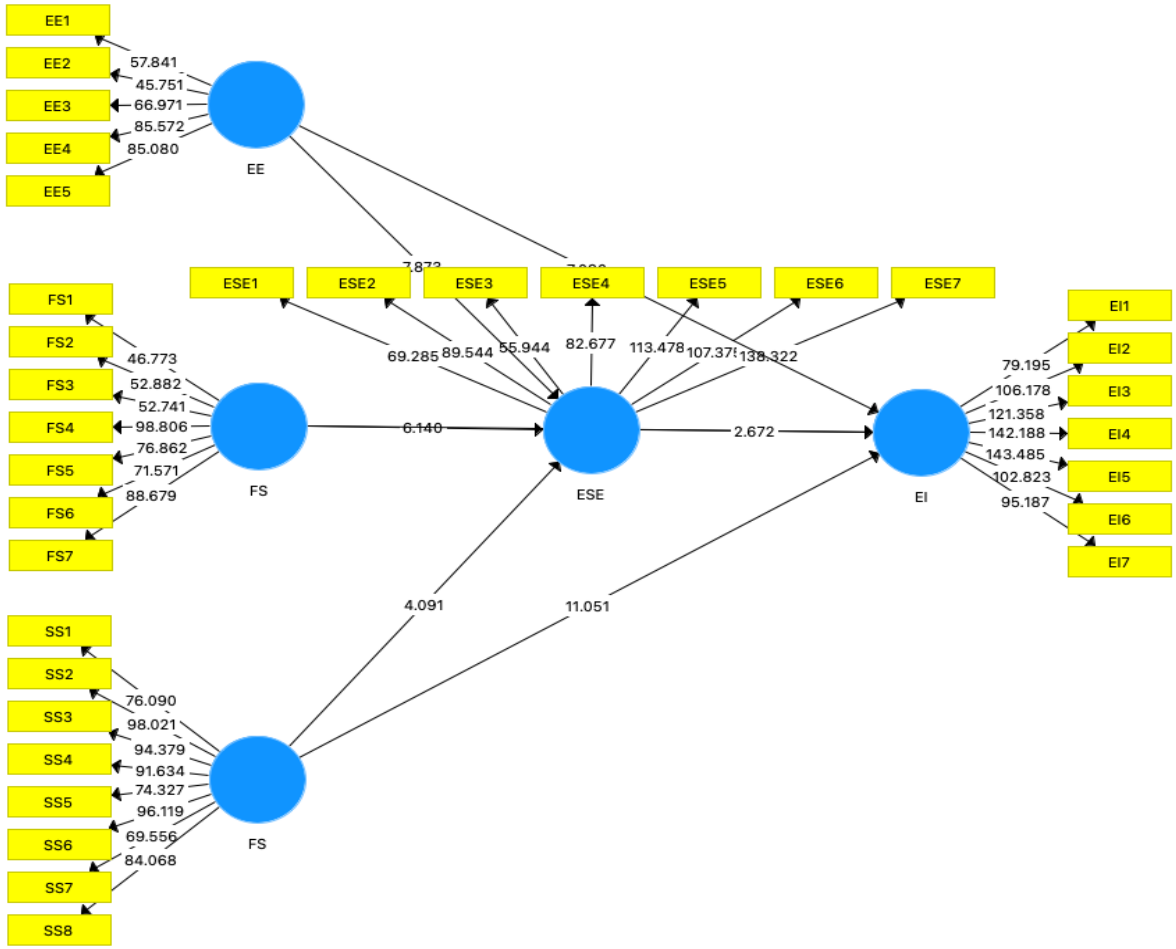

Figure 2. Bootstrapping Result Output from SmartPLS

Hypothesis Testing

Direct Effect

This study investigates the direct and indirect effects of Entrepreneurial Education (EE), Family Support (FS), and School Support (SS) on Entrepreneurial Intention (EI), with Entrepreneurial Self-Efficacy (ESE) serving as a mediating variable. Furthermore, detailed findings are presented in Table 3.

Based on the Table 3, the results reveal several significant relationships that highlight the critical role of external support systems and self-efficacy in shaping entrepreneurial intentions. The direct effect of EE on EI was found to be highly significant (T-statistics = 7.107, P-value = 0.000), emphasizing the importance of entrepreneurship education in cultivating the intention to pursue entrepreneurial ventures. Similarly, EE demonstrated a significant impact on ESE (T-statistics = 8.021, P-value = 0.000), indicating that entrepreneurship education enhances self-efficacy, a key psychological enabler of entrepreneurial behavior.

Table 3. Direct Relationships Results

Hypotheses	Path	Standard Deviation	T Statistics	P Values	Decision
H1	EE -> EI	0,066	7,107	0,000	Accepted
H2	EE -> ESE	0,055	8,021	0,000	Accepted
H3	ESE_ -> EI	0,068	2,679	0,008	Accepted
H4	FS -> EI	0,043	2,148	0,032	Accepted
H5	FS -> ESE	0,051	5,700	0,000	Accepted
H6	SS -> EI	0,066	10,846	0,000	Accepted
H7	SS -> ESE	0,065	3,751	0,000	Accepted

Notes: EE: entrepreneurial education, EI: entrepreneurial intention, SS: school support, FS: family support, ESE: entrepreneurial self-efficacy

Furthermore, ESE was shown to significantly influence EI (T-statistics = 2.679, P-value = 0.008), reinforcing its role as a mediator that translates self-belief into entrepreneurial aspirations. In terms of family dynamics, FS exhibited a significant direct effect on EI (T-statistics = 2.148, P-value = 0.032) and a notable influence on ESE (T-statistics = 5.700, P-value = 0.000). These findings underscore the positive impact of familial support in both fostering entrepreneurial intentions and enhancing self-efficacy. Similarly, SS played a critical role, with a direct effect on EI (T-statistics = 10.846, P-value = 0.000) and a significant contribution to ESE (T-statistics = 3.751, P-value = 0.000). These results highlight the pivotal role of schools in promoting entrepreneurial intentions and building students' self-efficacy.

Indirect Effect

This study examined the relationships between Entrepreneurial Education (EE), Family Support (FS), and School Support (SS) on Entrepreneurial Intentions (EI) through the mediating role of Entrepreneurial Self-Efficacy (ESE). A detailed summary of these findings is presented in Table 4.

Table 4. Indirect Relationships Results

Hypotheses	Path	Standard Deviation	T Statistics	P Values	Decision
H8	EE -> ESE -> EI	0,027	2,939	0,003	Accepted
H9	FS -> ESE -> EI	0,025	2,127	0,034	Accepted
H10	SS -> ESE -> EI	0,022	2,016	0,044	Accepted

Notes: EE: entrepreneurial education, EI: entrepreneurial intention, SS: school support, FS: family support, ESE: entrepreneurial self-efficacy

Table 4 describerd that the results indicate that EE significantly influences EI through ESE, with a T-statistics value of 2.939 and a P-value of 0.003, thus supporting hypothesis H8. Furthermore, FS was also found to significantly affect EI through ESE, as evidenced by a T-statistics value of 2.127 and a P-value of 0.034, confirming hypothesis H9. Similarly, SS demonstrated a significant influence on EI through ESE, with a T-statistics value of 2.016 and a P-value of 0.044, supporting hypothesis H10. The results confirm that hypotheses H8, H9, and H10 are statistically significant and supported. These findings confirm that ESE plays a crucial mediating role in the relationships between EE, FS, and SS on EI. They underscore the combined importance of educational, familial, and school-based support systems in enhancing entrepreneurial self-efficacy, which subsequently drives individuals' entrepreneurial intentions.

Entrepreneurship is a critical factor in driving economic growth, increasing income, and improving societal well-being (Butt, et al., 2022; Hassan, et al., 2020; Yousaf, Ali, Ahmed, Usman, & Sameer, 2021). It is also recognized for its role in creating goods and services through innovation and creativity (Nasip, Amirul, Sondoh Jr, & Tanakinjal, 2017; Wiklund, Wright, & Zahra, 2019). Additionally, entrepreneurship helps generate job opportunities and reduce unemployment (Triatmanto & Bawono, 2023). This study examines the factors influencing entrepreneurial intentions (EI) among vocational high school students, focusing on the internal factor of entrepreneurial self-efficacy (ESE) and external factors such as entrepreneurial education (EE),

school support (SS), and family support (FS). These factors are essential for preparing students to embark on entrepreneurial careers after graduation.

Previous studies have highlighted the significant role of EE in shaping EI. Wahjusaputri et al., (2020) and Wulandari (Hatammimi & Wulandari, 2014) noted that EE influences EI across different educational levels. An optimal curriculum and a strong understanding of entrepreneurial concepts (Fayolle & Gailly, 2015; Kotler, Keller, & Chernev, 2022) serve as a foundation for graduates to succeed in entrepreneurship (Ventista & Brown, 2023). Grounded in the Theory of Planned Behavior (TPB), EE has been identified as a critical predictor of EI (Ahmed, Chandran, Klobas, Liñán, & Kokkalis, 2020; Kirkley, 2017; Pedrini, Langella, & Molteni, 2017; Vu et al., 2025). This study confirms the positive influence of EE, FS, SS, and ESE on EI, which prepares vocational school graduates to start their own businesses. ESE was found to mediate the relationships between EE, FS, and SS with EI. Consistent with prior research achieving strong EI requires EE that aligns with industry demands (Riyanda & Dula, 2020) and fosters confidence and entrepreneurial skills (Adu, Boakye, Suleman, & Bingab, 2020; Hatammimi & Rosniawati, 2023; Hatammimi & Wulandari, 2014; Tan & Wijaya). Without ESE, the knowledge and skills gained through EE may not effectively translate into entrepreneurial actions. These findings align with previous studies (Nowiński, et al., 2019; Puni, Anlesinya, & Korsorku, 2018; Saoula, et al., 2023; Shahab, Chengang, Arbizu, & Haider, 2019; Xu, Zhou, Zhang, Zhang, & Ouyang, 2023), emphasizing the importance of self-efficacy in building EI.

The role of FS in enhancing EI was also explored. Consistent with findings from Saoula, et al (2023) family support–including financial assistance, access to business networks, and emotional encouragement–significantly boosts EI. Conversely, insufficient family support diminishes students' entrepreneurial motivation. SS also plays a crucial role by providing facilities such as computer laboratories, business bazaars, and internship programs, which help students develop practical skills and entrepreneurial readiness. The findings indicate that while SS has a significant direct influence on EI, its effect diminishes when mediated by ESE. This suggests that factors such as EE and FS may have a stronger influence on building ESE. These results align with Al Amimi & Ahmad (2023) who emphasized the role of school support in fostering EI. The study highlights the need for vocational schools in Indonesia to offer professional entrepreneurship educators and updated curricula aligned with industry needs to effectively prepare students for entrepreneurship. The mediating role of ESE further underscores the importance of well-delivered EE in enhancing EI (Nowiński, et al., 2019; Puni, et al., 2018; Saoula, et al., 2023; Xu, et al., 2023). Family support, including financial resources, emotional encouragement, and access to business networks, directly contributes to students' self-confidence and entrepreneurial aspirations. This support equips students with the foundations needed to strengthen their EI.

This study makes significant theoretical contributions to the entrepreneurship literature. First, it successfully develops a model of entrepreneurial intentions (EI) specifically for vocational high school students. Second, the findings enrich the understanding of entrepreneurship by highlighting the critical role of entrepreneurial self-efficacy (ESE) as a mediator between entrepreneurial education (EE), family support (FS), and school support (SS) in fostering EI among students. The study extends the discussion by demonstrating that individuals with high levels of EE, FS, SS, and ESE are more likely to develop strong entrepreneurial intentions, ultimately enhancing their potential to enter the business world. However, the findings also reveal that despite having adequate family and school support, optimal learning environments, and high levels of ESE, vocational school students may still face challenges. These challenges often arise from a lack of market understanding and an inability to effectively utilize limited resources to meet market demands.

Conclusion

This study highlights the pivotal role of entrepreneurial self-efficacy (ESE) as a mediator between entrepreneurial education (EE), family support (FS), and school support (SS) in shaping students' entrepreneurial intentions (EI). Among these factors, school support emerged as the most

influential, emphasizing the need for well-equipped entrepreneurial ecosystems, including hands-on training, mentorship, and industry collaboration. The findings contribute to entrepreneurship education theory by extending the understanding of how external support fosters entrepreneurial aspirations among vocational high school students. Practically, vocational schools, families, and policymakers must collaborate to create an enabling environment that nurtures students' confidence, skills, and readiness for entrepreneurship. On a global scale, strengthening entrepreneurship education in vocational schools can serve as a strategic approach to fostering youth entrepreneurship and reducing unemployment. Future research should explore longitudinal impacts and cross-cultural comparisons to deepen insights into entrepreneurial intention development among students.

This study has several limitations that should be acknowledged. The findings are based on a specific sample of vocational high school students in Indonesia, particularly those in the online business and marketing field, which may limit generalizability to other contexts. Additionally, the reliance on self-reported survey data poses the risk of response bias, potentially affecting the accuracy of the results. Furthermore, the cross-sectional design prevents an analysis of how entrepreneurial intentions evolve over time. To enhance future research, broader samples from diverse educational backgrounds, mixed-method approaches combining qualitative and quantitative data, and longitudinal studies should be considered to provide a more comprehensive understanding of the factors influencing entrepreneurial intentions.

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