




THE INFLUENCE OF GENDER, FAMILY BACKGROUND, AND ENTREPRENEURSHIP EDUCATION ON STUDENTS' ENTREPRENEURIAL INTEREST IN VOCATIONAL HIGH SCHOOLS

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Abstract

This study investigates the influence of gender, family economic background, and entrepreneurship education on the entrepreneurial interest of vocational high school students in Depok. Using a quantitative explanatory design, data were collected from 123 students via structured questionnaires and analyzed through t-tests, F-tests, and multiple linear regression. The results show that all three variables positively affect entrepreneurial interest, with entrepreneurship education emerging as the strongest predictor ($\beta = 0.641$, $p < 0.001$), followed by family background ($\beta = 0.239$, $p = 0.006$) and gender ($\beta = 0.228$, $p = 0.012$). These findings indicate that students' entrepreneurial intention is primarily shaped by formal entrepreneurship education, supported by family influence and gender-related differences in confidence and risk orientation. The study emphasizes the importance of practical entrepreneurship education and a supportive family environment in fostering entrepreneurial interest among vocational students, contributing to a sustainable youth entrepreneurship ecosystem.

Keywords: Gender, Family Background, Entrepreneurship Education, Entrepreneurial Interest, Vocational High School Students

1. INTRODUCTION

Indonesia is currently experiencing a demographic bonus, with approximately 70% of the population in the productive age group (15–64 years), representing a major potential for economic growth if supported by adequate human capital (BKKBN, 2024). However, the education and vocational training system has not fully aligned with the dynamic demands of the labor market. Over the past five years, the national open unemployment rate (TPT) decreased from 7.07% in 2020 to 4.91% in 2024, yet vocational school (SMK) graduates remain the largest contributors to unemployment, at around 8.00% in 2025, highlighting a gap between graduates' competencies and industry needs, particularly in entrepreneurial skills and readiness for technology-driven economic transformation (BPS, 2025).

In response, the government, through the Ministry of Cooperatives and SMEs and the Ministry of Manpower, has implemented youth entrepreneurship programs, including training, entrepreneurial ecosystem development, and cross-sectoral collaboration, aiming to create new business opportunities and reduce youth unemployment (Kemenkop UKM, 2021). The national



entrepreneurship ratio remains low at 3.6%, below the 4% minimum recommended by the World Bank to sustain economic growth (Kemenkop UKM, 2023).

Entrepreneurship education aims not only to teach business knowledge but also to cultivate innovative, creative, and solution-oriented mindsets. Law No. 20/2003 and Government Regulation No. 19/2005 provide schools with flexibility to integrate entrepreneurship values contextually. However, implementation remains largely theoretical and has not effectively fostered entrepreneurial intention among SMK students (Suhaedin & Yulastri, 2023). Evaluations show that current curricula are insufficient in developing practical entrepreneurial behavior. Specifically, Prianto et al. (2021) highlight that SMK entrepreneurship programs often fail to shift students from job seekers to job creators due to limited experiential learning, while Mukarromah et al. (2024) find that the curriculum does not yet optimally build observable entrepreneurial behavior. Therefore, entrepreneurship education should emphasize experiential learning, industry collaboration, and project-based approaches to foster innovation, independence, and global competitiveness.

This study seeks to examine the factors influencing the entrepreneurial interest of vocational high school students in Depok. The research questions are: Does gender influence the entrepreneurial interest of SMK students in Depok? Does family background influence students' entrepreneurial interest? Does entrepreneurship education influence students' entrepreneurial interest? And do gender, family background, and entrepreneurship education simultaneously influence the entrepreneurial interest of vocational students?

The study aims to examine the influence of gender, family economic background, and entrepreneurship education on SMK students' entrepreneurial intention, both partially and simultaneously, and to identify the most dominant factor to guide the enhancement of school entrepreneurship programs. The findings are expected to enrich educational management and entrepreneurship literature, particularly within vocational education in Indonesia. Practically, the results can inform principals, teachers, and policymakers in designing effective, character-based entrepreneurship learning strategies and provide a foundation for local government policies to promote youth entrepreneurship. For students, the study highlights entrepreneurship as an independent, ethical, and competitive career path in the dynamic labor market.

The novelty of this research lies in its focus on vocational school students as a strategic group for shaping entrepreneurial intention, integrating gender, family background, and entrepreneurship education. Unlike previous studies that primarily focus on university students, this study positions vocational education as a context for character building and early entrepreneurial practice (Suhaedin & Yulastri, 2023). Tikollah and Azis (2025) emphasize family support in strengthening entrepreneurial intention, while Kusumojanto et al. (2021) highlight the role of entrepreneurship education in fostering attitudes and self-efficacy. Conducted in an area with a high concentration of vocational schools but significant graduate unemployment, this study aligns with Hutasuhut (2018) and Marlow (2020) in examining the comprehensive interaction of social, psychological, and gender factors in shaping entrepreneurial intention among vocational students.

Entrepreneurship is pivotal for economic development by fostering innovation, generating employment, and enhancing national competitiveness. In vocational education, it serves as a strategic platform to develop adaptive, independent, and value-oriented students, providing a theoretical basis for understanding how education shapes entrepreneurial intentions and behaviors among SMK students.



Entrepreneurship Theory

Schumpeter views entrepreneurs as agents of change who innovate by creating new combinations of production factors (Schumpeter & Swedberg, 2021). Bygrave et al. (2024) extend this perspective, framing entrepreneurship as a systematic, creativity-driven process of opportunity recognition. Hisrich and Shepherd (2017) emphasize resource management for value creation, while Drucker (in Prianto et al., 2021) suggests that entrepreneurship can be learned through structured experience in vocational schools. Practical learning in SMKs enhances work readiness (Mukarromah et al., 2024) and strengthens entrepreneurial orientation (Setyawan et al., 2023). Entrepreneurial experience and psychological traits, such as need for achievement and locus of control, further strengthen entrepreneurial intentions, which, according to the Theory of Planned Behavior (Ajzen, 1991), are shaped by attitudes, social norms, and perceived behavioral control, with gender as an influential factor.

Gender Theory

Gender shapes entrepreneurial interest through socially defined roles (Eagly, 1987). Males are generally associated with independence and risk-taking, whereas females prioritize caution and social stability. Studies indicate that entrepreneurial education interacts differently with self-efficacy across genders, with males exhibiting higher confidence (Nowiński et al., 2019). Gender, culture, and psychological factors significantly affect entrepreneurial intention (Rajar et al., 2022), and self-efficacy gaps call for more inclusive learning strategies (Pandang et al., 2022). Recognizing these differences is essential to explain variations in motivation and entrepreneurial intention among vocational students.

Family Background Theory

SMK students' entrepreneurial interest is shaped not only by formal education but also by family influence. Family Background Theory posits that families instill values of independence, hard work, and risk-taking. Children from entrepreneurial families exhibit higher entrepreneurial intention due to exposure to business practices (Georgescu & Herman, 2020). Family support, including social capital and practical knowledge, reinforces confidence to start ventures (Hadri et al., 2023). Supportive family environments enhance self-efficacy and perceived control over business opportunities (Ben Moussa & Kerkeni, 2021), while families provide early social networks and value orientation that shape entrepreneurial behavior (Bygrave et al., 2024). Thus, family plays a foundational role in fostering entrepreneurial intention.

Entrepreneurship Education Theory

Entrepreneurial ability is not innate but can be developed through structured, experiential education. Entrepreneurship education fosters not only business knowledge but also an entrepreneurial mindset emphasizing innovation, creativity, and risk-taking (Gibb, 1993). Experiential learning enhances entrepreneurial intention by strengthening self-confidence and opportunity orientation (Cera et al., 2020). Contextualized education promotes self-efficacy and opportunity creation (Porfírio et al., 2022), while positive attitudes and perceived capability link education to entrepreneurial behavior (Al-Qadasi et al., 2024). Consequently, entrepreneurship education in SMKs strategically shapes character, independence, and sustainable entrepreneurial intention.



Vocational Education & Employability Skills

Vocational education equips individuals with productive, independent skills through practice-based learning (Billett, 2011). In Indonesia, SMKs bridge formal education and industry needs, fostering adaptability to economic change (Pambudi & Harjanto, 2020). Success is measured not only by employment but also by students' entrepreneurial orientation (Prianto et al., 2021). Strengthening employability skills such as communication, collaboration, and problem-solving is essential for developing skilled, adaptive, and competitive graduates capable of creating jobs (Kovalchuk et al., 2022).

Theory of Entrepreneurial Intention

Entrepreneurial intention arises from individual, social, and educational factors shaping perception of opportunities and risks. It develops through planned cognitive processes informed by self-efficacy and intrinsic motivation (Bygrave et al., 2024). Gender affects risk perception and social support, influencing motivation (Fischer et al., 1993). Family background provides values and role models (Georgescu & Herman, 2020), while entrepreneurship education strengthens confidence, achievement needs, and behavioral control (Saputro et al., 2023). Thus, SMK students' entrepreneurial intention reflects the synergy of gender, family influence, and educational experience guiding economic independence.

2. RESEARCH METHOD

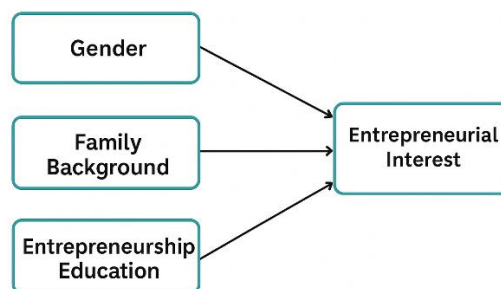


Figure 1: Conceptual Framework

This study employed a quantitative approach to examine the relationships among gender, family background, and entrepreneurship education on entrepreneurial intention using numerical data and statistical analysis (Creswell & Creswell, 2018). The conceptual framework, illustrated in Figure 1, posits that entrepreneurial intention is influenced by three independent variables: gender, family background, and entrepreneurship education. Primary data were collected via structured questionnaires administered to 123 students of SMK Negeri 1 Depok, with 15 items per variable to assess students' entrepreneurial perceptions and tendencies. The study is explanatory, aiming to identify the causal effects of these variables on entrepreneurial intention (Umi Rusilowati et al., 2025). Data were analyzed using SPSS, applying descriptive statistics, reliability testing (Cronbach's Alpha), validity testing, and assumption checks including normality, linearity, multicollinearity, and homoscedasticity (Spearman/Scatterplot), followed by multiple regression analysis (R^2 , F-test, t-test) to determine each variable's contribution (Hair et al., 2021). This integrated approach ensures valid, reliable, and measurable findings, providing a comprehensive understanding of how



social, familial, and educational factors collectively shape entrepreneurial intention among vocational school students.

3. RESULTS AND DISCUSSION

Descriptive Statistics

Descriptive analysis summarized the tendencies of each research variable using mean, standard deviation, range, and minimum and maximum scores, as presented in Table 1. All variables had a complete response set ($N = 123$), indicating no missing data.

Table 1. Descriptive Statistics of Research Variables

	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
x1	123	34.00	39.00	73.00	6314.00	51.3333	.70825	7.85490	61.699
x2	123	32.00	34.00	66.00	6071.00	49.3577	.70111	7.77568	60.461
x3	123	34.00	35.00	69.00	6241.00	50.7398	.80415	8.91843	79.538
y	123	40.00	33.00	73.00	6269.00	50.9675	.90646	10.05308	101.065
Valid N (listwise)	123								

Source: Processed Primary Data (2025)

The mean scores for all variables ranged from 49 to 51, suggesting generally positive and stable perceptions among respondents. Gender (X_1) had a mean of 51.33 and a standard deviation of 7.85, reflecting moderate to high perceptions of gender roles in entrepreneurial intention with relatively homogeneous distribution. Family Background (X_2) showed a mean of 49.36 and a standard deviation of 7.78, indicating diverse but consistently patterned economic conditions. Entrepreneurship Education (X_3) recorded a mean of 50.74 and a standard deviation of 8.92, highlighting variations in exposure to entrepreneurial learning and school-based practical experiences. Entrepreneurial Intention (Y) exhibited the highest mean at 50.97 with a standard deviation of 10.05, showing generally strong entrepreneurial interest despite individual differences in motivation. All variables demonstrated a normal and stable distribution, with deviations below a standard deviation of 11, confirming the suitability of the dataset for further analysis, including classical assumption tests and multiple regression to assess causal relationships among the study variables.

Prior to conducting multiple regression analysis, classical assumptions were carefully evaluated to ensure the appropriateness of the data and the measurement instruments. The validity of the questionnaire items was confirmed using the Corrected Item–Total Correlation technique. All items for gender, family background, entrepreneurship education, and entrepreneurial intention exceeded the critical correlation threshold ($r > 0.396$), indicating that the items accurately measured the intended constructs. High correlations, ranging from 0.64 to 0.95, suggest that respondents answered consistently and systematically. Following validity assessment, reliability testing using Cronbach's Alpha demonstrated excellent internal consistency for all variables ($\alpha > 0.95$), confirming that the instrument is highly reliable and suitable for subsequent inferential analysis.

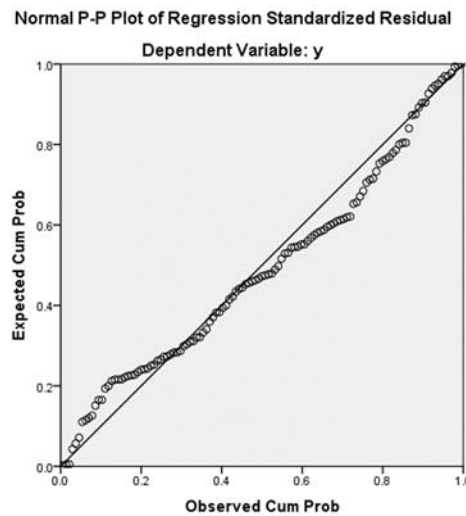


Figure 2. Normal P-P Plot of Regression Standardized Residual

Residual normality was evaluated using the Kolmogorov–Smirnov test with Lilliefors correction. The results indicated that all residuals were approximately normally distributed, with asymptotic significance values exceeding 0.05. Complementing this, the standardized residuals closely aligned with the diagonal in the Normal P–P Plot, suggesting a symmetrical distribution without notable outliers. Figure 2 illustrates this distribution of standardized residuals from the regression model against expected normal values. The horizontal axis represents the Observed Cumulative Probability, while the vertical axis shows the Expected Cumulative Probability under a perfect normal distribution. The residual points largely follow the diagonal reference line, with only minor deviations at both ends, indicating that the residuals conform to a normal distribution. These visual observations reinforce the results of the Kolmogorov–Smirnov test, confirming that the regression model meets the normality assumption and is free from systematic bias or extreme outliers that could compromise parameter estimation.

In addition, linearity between each independent variable and the dependent variable was verified, demonstrating that gender, family background, and entrepreneurship education all exhibited statistically significant linear relationships with entrepreneurial intention. This satisfies a fundamental assumption of multiple regression and ensures unbiased and valid coefficient estimates.

Multicollinearity diagnostics indicated that all independent variables were within acceptable limits, with Tolerance values greater than 0.10 and VIF values below 10. Each predictor contributed uniquely to the regression model, confirming that predictor independence was maintained and regression coefficients could be interpreted reliably. Homoscedasticity testing, conducted using Spearman's Rho correlation between absolute residuals and each predictor, showed no significant correlations ($p > 0.05$), indicating that the variance of residuals was constant across all levels of the independent variables. Taken together, all classical regression assumptions, including validity, reliability, normality, linearity, multicollinearity, and homoscedasticity, were satisfied, confirming that the data and measurement instruments are appropriate for multiple regression analysis. These results provide a robust foundation for examining the influence of gender, family background, and entrepreneurship education on entrepreneurial intention with confidence in the reliability and validity of the findings.



Correlation Analysis

Table 2: Pearson's Correlation Matrix

Variables	Y	X ₁	X ₂	X ₃
Y	1	.500	.429	.706
X ₁	.500	1	.369	.447
X ₂	.429	.369	1	.315
X ₃	.706	.447	.315	1
Note: p < 0.01.				

Source: Data Porcessed, 2025

Pearson correlation coefficients were calculated to examine the relationships among variables. Table 2 presents the Pearson's correlation matrix, showing the strength and direction of linear relationships among the variables. The dependent variable, entrepreneurial intention (Y), demonstrates significant positive correlations with all independent variables. Specifically, gender (X₁) correlates with Y at $r = 0.500$, family background (X₂) at $r = 0.429$, and entrepreneurship education (X₃) at $r = 0.706$, all significant at $p < 0.01$.

Among the independent variables, the highest correlation with the dependent variable is observed for entrepreneurship education (X₃), indicating that students' exposure to structured entrepreneurial learning is strongly associated with higher entrepreneurial intention. Gender (X₁) and family background (X₂) also show moderate positive relationships with Y, suggesting that social and demographic factors contribute meaningfully to students' entrepreneurial interest.

The inter-correlations among independent variables range from $r = 0.315$ to $r = 0.447$, which are below the common multicollinearity concern threshold ($r > 0.80$). This indicates that while the predictors are related, they are not highly collinear, supporting their simultaneous inclusion in the multiple regression model. The Pearson correlation analysis confirms that all independent variables have significant linear relationships with entrepreneurial intention, providing a strong rationale for proceeding to multiple regression analysis to examine their partial and simultaneous effects.

Multiple Linear Regression Analysis

The multiple linear regression analysis was conducted to examine how gender (X₁), family background (X₂), and entrepreneurship education (X₃) collectively and individually influence entrepreneurial interest (Y). This analytical method was employed to test both the partial and simultaneous hypotheses regarding the effects of the independent variables.

Based on the coefficient results, the multiple linear regression equation is expressed as follows:

$$Y = -5.015 + 0.228X_1 + 0.239X_2 + 0.641X_3.$$

This equation indicates that gender (X₁), family background (X₂), and entrepreneurship education (X₃) each have a positive effect on entrepreneurial interest (Y). The constant value of -5.015 represents the baseline level of entrepreneurial interest when all predictors are held constant. Specifically, the regression coefficient for gender (X₁) of 0.228 suggests that, *ceteris paribus*, a one-unit increase in gender-related factors raises entrepreneurial interest by 0.228 units. The coefficient for family background (X₂) of 0.239 indicates that each additional unit of familial or economic support increases entrepreneurial interest by 0.239 units. Meanwhile,



entrepreneurship education (X_3) has the largest coefficient of 0.641, demonstrating that increased exposure to entrepreneurship education most strongly enhances students' motivation, capability, and readiness to pursue entrepreneurial activities.

Table 3. Summary of Multiple Linear Regression Model

R	R Square (R^2)	Adjusted R Square	Conclusion
0.755	0.570	0.559	The regression model demonstrates a strong correlation and good explanatory power, indicating that 55.9% of the variation in entrepreneurial interest is explained by the three predictors.

Source: Data Processed, 2025

As shown in Table 3, the R value of 0.755 signifies a strong correlation between the independent variables and entrepreneurial interest. The coefficient of determination (R^2) of 0.570 indicates that 57.0% of the variance in entrepreneurial interest is explained by gender, family background, and entrepreneurship education, while the remaining 43.0% is attributed to other factors outside the model. The adjusted R^2 of 0.559 further confirms that approximately 55.9% of the variance is effectively explained by the three predictors, suggesting the model is statistically efficient and free from overfitting. Among these predictors, entrepreneurship education (X_3) emerged as the most dominant factor influencing entrepreneurial intention, followed by family background (X_2) and gender (X_1). These results confirm that educational exposure plays a pivotal role in nurturing students' entrepreneurial motivation, supported by contextual and demographic factors within the learning environment.

Hypotheses and Partial t-Test Analysis

Based on the research framework, the study proposes the following hypotheses:

H1: Gender influences the entrepreneurial interest of SMK students in Depok.

H2: Family background influences the entrepreneurial interest of SMK students in Depok.

H3: Entrepreneurship education influences the entrepreneurial interest of SMK students in Depok.

To test these hypotheses, a partial t-test was conducted to examine the extent to which each independent variable individually influences the dependent variable, entrepreneurial interest. The test aims to identify the unique contribution of each independent variable, with the decision criterion that a variable is considered influential if the significance value (Sig.) is less than 0.05. In this study, the independent variables include gender (X_1), family background (X_2), and entrepreneurship education (X_3), while the dependent variable is entrepreneurial interest (Y).

Based on the results presented in Table 4, all independent variables in the final model (Model 3) show significance values below 0.05, indicating that each variable has a measurable influence on entrepreneurial interest. H3 regarding entrepreneurship education (X_3) is supported. Entrepreneurship education (X_3) exhibits a t-value of 8.318 with a significance of 0.000, suggesting a positive and strong influence on students' entrepreneurial interest. In other words, the higher a student's understanding and experience in entrepreneurship, the greater their tendency to engage in business activities.

Table 4. Partial Hypothesis Test: t-Test Results (Coefficients Table)



Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	10.574	3.737		2.829	.005
x3	.796	.073	.706	10.973	.000
2 (Constant)	.064	4.643		.014	.989
x3	.715	.073	.634	9.784	.000
x2	.297	.084	.230	3.542	.001
3 (Constant)	-5.015	4.958		-1.012	.314
x3	.641	.077	.569	8.318	.000
x2	.239	.085	.185	2.806	.006
x1	.228	.089	.178	2.549	.012

a. Dependent Variable: y

Source: Data processed, 2025

Similarly, H2 concerning family background (X_2) is also supported. Family background (X_2) demonstrates a positive effect with a t-value of 2.806 and significance of 0.006, confirming that family factors play an important role in fostering entrepreneurial interest, whether through moral support, exposure to family business experiences, or encouragement toward economic independence.

H1 regarding gender (X_1) is likewise supported. Gender (X_1) also shows a significant effect, with a t-value of 2.549 and a significance of 0.012. Although its influence is smaller compared to the other variables, this finding indicates that gender characteristics may affect an individual's motivation and orientation toward entrepreneurial activities.

The constant value of -5.015 suggests that when all independent variables are held constant or have no effect, the level of entrepreneurial interest remains low. This reinforces the notion that the three independent variables collectively contribute to shaping entrepreneurial interest.

Overall, the partial t-test results confirm that gender, family background, and entrepreneurship education each individually exert a positive influence on entrepreneurial interest. Among them, entrepreneurship education has the strongest impact, highlighting that learning processes and practical experience in entrepreneurship are key factors in enhancing students' willingness and readiness to initiate and develop their own businesses.

Simultaneous Hypothesis Test (F-Test)

The study also proposed the following hypothesis for simultaneous effects:

H4: Gender, family background, and entrepreneurship education simultaneously influence the entrepreneurial interest of SMK students in Depok.

To test this hypothesis, a simultaneous F-test was conducted to examine whether all independent variables collectively influence the dependent variable, entrepreneurial interest (Y). The independent variables considered in this model include gender (X_1), family background (X_2), and entrepreneurship education (X_3). The decision criterion for the F-test is that if the significance value (Sig.) is less than 0.05, it can be concluded that the independent variables jointly affect the dependent variable.



Table 5. F-Test Results for Simultaneous Effect of Gender, Family Background, and Entrepreneurship Education on Entrepreneurial Interest

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6149.732	1	6149.732	120.405	.000 ^b
	Residual	6180.138	121	51.076		
	Total	12329.870	122			
2	Regression	6734.737	2	3367.368	72.221	.000 ^c
	Residual	5595.133	120	46.626		
	Total	12329.870	122			
3	Regression	7024.473	3	2341.491	52.520	.000 ^d
	Residual	5305.396	119	44.583		
	Total	12329.870	122			

a. Dependent Variable: y

b. Predictors: (Constant), x3

c. Predictors: (Constant), x3, x2

d. Predictors: (Constant), x3, x2, x1

Source: Data processed, 2025

Based on the results shown in Table 5, the calculated F-value for the final model (Model 3) is 52.520, with a significance of 0.000, well below the 0.05 threshold. This indicates that gender, family background, and entrepreneurship education collectively influence students' entrepreneurial interest, supporting H4.

Furthermore, the R Square (R^2) value for the regression model is 0.570, which means that 57% of the variation in entrepreneurial interest can be explained by the combined effect of the three independent variables, while the remaining 43% is attributed to other factors outside the model. The Adjusted R Square of 0.559 confirms that the regression model demonstrates a good fit and stability, highlighting the substantial contribution of gender, family background, and entrepreneurship education in shaping students' entrepreneurial interest.

These findings reveal that the three main factors, gender, family background, and entrepreneurship education, not only have individual (partial) effects but also exert a strong collective influence on entrepreneurial interest. This suggests that the development of entrepreneurial intention among vocational students cannot be separated from the combined impact of personal characteristics, family support, and experiential learning in entrepreneurship.

Overall, the F-test results strengthen the conclusion that the regression model used in this study is statistically significant and adequately explains the relationships between social, educational, and personal factors and students' entrepreneurial interest.

Discussion

The regression analysis demonstrates that gender (X_1), family background (X_2), and entrepreneurship education (X_3) all exert a positive and significant influence on the entrepreneurial interest of vocational high school students. The partial t-test results show that all variables have significance values below 0.05, confirming that each factor meaningfully contributes to enhancing entrepreneurial intention. Among the three, entrepreneurship



education (X_3) is the most dominant predictor, with a coefficient of $\beta = 0.641$ and $t = 8.318$ ($p < 0.001$), followed by family background (X_2) with $\beta = 0.239$ and $t = 2.806$ ($p = 0.006$), and gender (X_1) with $\beta = 0.228$ and $t = 2.549$ ($p = 0.012$). These results indicate that vocational students' entrepreneurial interest is primarily shaped by formal entrepreneurship education, reinforced by familial support and gender-related characteristics.

Conceptually, these findings support Entrepreneurship Theory as discussed by Schumpeter and Swedberg (2021), which frames entrepreneurship as a value-creation process driven by innovation and continuous learning. Similarly, Bygrave et al. (2024) emphasize systematic processes based on creativity and opportunity recognition. Within vocational education, entrepreneurship education fosters an entrepreneurial mindset, enabling students to innovate, make decisions under uncertainty, and create economic value independently (Hisrich & Shepherd, 2017; Prianto et al., 2021). The dominant effect of entrepreneurship education observed in this study confirms prior assertions that entrepreneurial capability can be cultivated through structured, experiential learning rather than being purely innate (Gibb, 1993; Porfírio et al., 2022).

The strong influence of entrepreneurship education is further supported by previous research. Suhaedin and Yulastri (2023) report that entrepreneurial learning in vocational schools significantly increases students' intention to start a business. Likewise, Nabi et al. (2017) and Kusumojanto et al. (2021) find that experience-based learning and supportive environments enhance positive attitudes and self-efficacy toward entrepreneurship. Practically, these findings suggest that vocational curricula should combine theory with hands-on activities such as project-based learning and mentoring, positioning entrepreneurship education as both a knowledge transfer mechanism and a tool for character development.

Family background (X_2) also shows a significant influence on entrepreneurial interest, supporting Family Background Theory, which posits that the family is the initial environment shaping values, attitudes, and entrepreneurial aspirations (Georgescu & Herman, 2020). Students from entrepreneurial families tend to have higher entrepreneurial intention due to early exposure to business practices and moral and material support (Hadri et al., 2023). Findings by Ben Moussa and Kerkeni (2021) reinforce that a supportive family environment enhances self-efficacy and perceived control over business opportunities. In Indonesia, Tikollah and Azis (2025) similarly show that family support significantly affects vocational students' entrepreneurial interest. These results corroborate prior evidence, highlighting the family's foundational role alongside formal education.

Gender (X_1) also has a positive and significant effect on entrepreneurial interest, with 51.2% female and 48.8% male students in the sample. While gender differences in risk orientation and perception exist, both groups show a positive inclination toward entrepreneurship. This observation aligns with Social Role Theory (Eagly, 1987), which posits that social roles influence economic behavior. Male students generally exhibit higher self-efficacy and risk-taking tendencies (Nowiński et al., 2019; Hutasuhut, 2018), whereas female students tend to prioritize caution and social stability. These results support the notion that gender-related traits influence entrepreneurial attitudes, consistent with prior findings.

Collectively, the study confirms that entrepreneurial intention in vocational students arises from the combined effect of personal characteristics, family support, and structured entrepreneurship education. This reinforces the need for integrated educational strategies that cultivate readiness, motivation, and capability for entrepreneurial activity, thus validating both theoretical frameworks and empirical studies on entrepreneurship development.



Despite structural challenges, female students in this study demonstrate strong entrepreneurial interest, reflecting a gradual shift in social values toward youth entrepreneurship. This finding supports prior research indicating that women, even in developing countries, face barriers such as limited access to capital and business networks but often exhibit resilience and creativity in seizing opportunities (Jamali, 2009; Panda, 2018). Hossain et al. (2025) further show that social support, inclusive educational policies, and empowerment programs can transform such challenges into opportunities for female entrepreneurs. Similarly, Hasibuan (2024) finds that women's motivation is frequently driven by economic needs and a desire to contribute to family welfare. Collectively, these results confirm the importance of adopting gender-sensitive approaches in vocational entrepreneurship education to ensure that female students can fully realize their entrepreneurial potential.

Integrating these findings with the Theory of Planned Behavior (Ajzen, 1991), entrepreneurial intention arises from the interaction of attitudes, social norms, and perceived behavioral control. In this study, our findings show that gender influences students' attitudes and perceptions toward entrepreneurship, family provides social norms and moral support, and entrepreneurship education strengthens perceived behavioral control by enhancing knowledge and self-efficacy. These results corroborate the TPB framework, highlighting that students' entrepreneurial interest reflects a dynamic interplay among formal learning, social environment, and psychological factors.

Although regression analysis confirms that gender, family background, and entrepreneurship education significantly influence entrepreneurial interest, the model's Adjusted $R^2 = 0.559$ indicates that 44,1% of the variance remains unexplained. This reinforces the multidimensional nature of entrepreneurial intention, suggesting that education, family, and gender alone cannot fully account for students' motivation to pursue entrepreneurship.

Psychological factors, including need for achievement, risk-taking propensity, locus of control, and self-efficacy, are well-established determinants of entrepreneurial intention (Nabi et al., 2017; Saputro et al., 2023). Students with high achievement motivation and self-confidence are more likely to take risks and initiate ventures, regardless of family background or formal education. Social and cultural factors also contribute: in Indonesia, norms emphasizing job security may limit entrepreneurial intention (Prianto et al., 2021), whereas peer support and role models positively influence risk perception and opportunity recognition (Astuti, 2021; Tikollah & Azis, 2025). These findings align with prior research, emphasizing the complex interaction of individual, social, and cultural factors in shaping entrepreneurship.

Educational environment and school policies further account for part of the unexplained variation. Studies by Duong (2022) and Nguyen et al. (2021) demonstrate that teaching quality, extracurricular entrepreneurial activities, and teacher role models significantly affect students' entrepreneurial interest. Variations in the implementation of entrepreneurship education result in differences in learning outcomes and perceptions of business opportunities. These results reinforce the importance of effective educational design in fostering entrepreneurial intention.

Macroeconomic conditions and access to resources also influence entrepreneurial outcomes. Availability of capital, market opportunities, and supportive government policies are critical for translating entrepreneurial intention into action (Bygrave et al., 2024; Hadri et al., 2023). Vocational students often face structural barriers such as limited financial resources and weak industry networks, highlighting the systemic challenges of entrepreneurship post-graduation.



Therefore, the 44,1% unexplained variance underscores the complexity of psychological, social, and structural dynamics shaping entrepreneurial intention. This emphasizes the need for a multidimensional approach that combines educational interventions with social support, psychological reinforcement, and structural policies to nurture a robust youth entrepreneurship ecosystem.

Practically, these findings carry important implications for vocational education policy in Indonesia. First, entrepreneurship curricula should be practical, applied, and involve industry actors and families. Second, gender-sensitive strategies should be adopted to enhance female students' confidence and agency in entrepreneurship. Third, programs promoting family involvement and mentoring should be strengthened to create a sustainable ecosystem linking schools, families, and communities.

Overall, this study enriches empirical literature on factors influencing entrepreneurial intention among vocational students. The dominant effects of entrepreneurship education and family support highlight that developing independent, innovative youth requires synergy between educational institutions and social environments. Policies enhancing vocational entrepreneurship education should therefore aim not only to improve business competencies but also to cultivate entrepreneurial character, competitiveness, and economic self-reliance, confirming the theoretical and empirical foundations of entrepreneurship development.

4. CONCLUSION

This study demonstrates that gender, family background, and entrepreneurship education significantly shape the entrepreneurial interest of vocational high school students in Depok. Among these factors, entrepreneurship education is the most influential, highlighting the pivotal role of structured learning in fostering creativity, self-reliance, and confidence. Family environment contributes by instilling values, offering guidance, and providing moral support, while gender reflects evolving social norms that encourage equal participation in economic activities.

Together, these factors account for over half of the variance in entrepreneurial intention, underscoring the complex interplay between individual traits, social environment, and educational experiences. The remaining unexplained variation points to additional influences, including psychological motivators, peer and community support, school climate, and broader economic conditions, which also merit attention in fostering entrepreneurship.

These findings carry significant implications for the development of vocational education in Indonesia. First, educational institutions should strengthen the integration of theory and practice in entrepreneurship through project-based learning and real-world business experiences. Second, schools must cultivate inclusive and gender-sensitive learning environments to ensure all students have equitable opportunities to develop their entrepreneurial potential. Third, the role of families and communities should be reinforced through collaborative programs that enhance social support for students' entrepreneurial activities. Through these measures, entrepreneurship education in vocational schools can function not only as a medium for teaching business skills but also as a platform for shaping independent, creative, and economically-oriented character.

From a practical standpoint, the results suggest that principals, teachers, and policymakers can leverage these insights to design effective, character-based entrepreneurship learning strategies. For students, these strategies enhance their capacity to develop



entrepreneurial skills, ethical awareness, and economic independence, preparing them to navigate dynamic labor markets and contribute to sustainable local development.

Given that this research focuses on SMK students in a single region, namely Depok, the generalizability of the findings remains contextually limited. Future research is recommended to expand the scope to include a larger and more diverse sample of schools, considering differences in areas of expertise, socioeconomic status, and cultural contexts. Additionally, subsequent studies may integrate psychological variables such as self-efficacy, achievement motivation, and risk perception to gain a more comprehensive understanding of the determinants of entrepreneurial intention.

A longitudinal approach is also suggested to trace changes in entrepreneurial interest from the study period through post-graduation, thereby illustrating how entrepreneurship education contributes to translating intention into actual entrepreneurial action. Qualitative studies employing narrative or phenomenological approaches could further enrich understanding of students' subjective experiences in forming entrepreneurial orientation. In this way, future studies are expected not only to quantitatively confirm relationships among variables but also to elucidate the social and psychological dynamics underlying the development of entrepreneurial intention.

This study affirms the importance of synergy among education, family, and social environment in nurturing a youth population with entrepreneurial orientation. Successfully developing entrepreneurial intention at the vocational education level represents a strategic step toward inclusive and sustainable economic development, providing a foundation for policies that support the emergence of innovative, ethical, and competitive young entrepreneurs.

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