

The Influence of Risk-Taking Courage, Self-Efficacy and Creativity on Entrepreneurial Interests in Vocational High School Students in Takalar District

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DOI : <https://doi.org/10.46245/ijorer.v7i5.1274>

Sections Info

Article history:

Submitted: December 10, 2025

Final Revised: June 14, 2026

Accepted: June 25, 2026

Published: September 30, 2026

Keywords:

Risk-Taking Courage; Self-Efficacy; Creativity;

Entrepreneurial Interest; R-Language



ABSTRACT

Objective: This study examines the influence of risk-taking courage, self-efficacy, and creativity on entrepreneurial interest among agricultural vocational school students in Takalar District. Although students possess adequate technical competencies, their entrepreneurial interest remains low, indicating the need to strengthen core entrepreneurial attributes. **Method:** A quantitative ex post facto design was employed. The sample was selected using proportional random sampling, and data were collected through valid and reliable questionnaires. Analysis was conducted using R-Language for assumption testing, simple regression, and multiple regression to ensure analytical precision and reproducibility. **Results:** The findings show that risk-taking courage, self-efficacy, and creativity each have a positive and significant effect on entrepreneurial interest, contributing 30%, 30.7%, and 32% respectively. Simultaneously, the three variables explain 47.7% of the variance in entrepreneurial interest. These results confirm the importance of psychological and creative attributes in strengthening students' readiness for entrepreneurship. **Novelty:** This study emphasizes the role of entrepreneurial attributes in vocational education and demonstrates the use of R-Language for more rigorous diagnostic testing and reproducible regression analysis compared to conventional statistical software.

INTRODUCTION

Entrepreneurship development in vocational education is essential in preparing graduates who are adaptable to global challenges and capable of contributing to economic growth. In Indonesia, vocational high schools (SMK) are expected to equip students not only with employability skills but also with entrepreneurial competencies that support independent business creation (Fawaid et al., 2022). However, national data consistently show that the unemployment rate of SMK graduates remains the highest among educational levels (BPS, 2023), indicating that entrepreneurial interest among vocational students is still relatively low.

Agricultural vocational schools hold strong potential for developing young entrepreneurs due to Indonesia's expanding agribusiness, food production, and agrotourism sectors. Although agricultural students generally possess technical competencies, such as cultivation skills and agribusiness knowledge (Ministry of Agriculture, 2022), technical abilities alone do not automatically translate into entrepreneurial initiative. Several personal attributes particularly risk-taking courage, self-efficacy, and creativity are required to form strong entrepreneurial interest.

Previous studies indicate that risk-taking courage plays an important role in shaping students' willingness to face uncertainty and pursue entrepreneurship. Students with low risk-taking tendencies tend to choose safer career options over business ventures (Setiawan & Ginting, 2023). Similarly, self-efficacy has been identified as a strong predictor of entrepreneurial interest, as students who believe in their abilities are more confident in planning and managing a business (Putra & Hartati,

2021). Creativity also contributes significantly by enabling students to generate ideas, innovate, and identify market opportunities (Lubis & Sahlan, 2021; Wibowo & Sutrisno, 2021). Students with limited creativity often struggle to convert ideas into entrepreneurial activities.

Although previous research has examined these three variables separately, studies that integrate risk-taking courage, self-efficacy, and creativity simultaneously particularly in the context of agricultural vocational schools remain limited. Moreover, earlier studies rarely utilised computational statistical tools such as R-Language, which offer more rigorous assumption testing and transparent modelling. This methodological gap highlights the need for more comprehensive analysis to better understand the factors that shape entrepreneurial interest among vocational students.

Therefore, this study addresses the following research questions: (1) Does risk-taking courage significantly influence entrepreneurial interest among agricultural vocational students? (2) Does self-efficacy significantly influence entrepreneurial interest among agricultural vocational students? (3) Does creativity significantly influence entrepreneurial interest among agricultural vocational students? and (4) Do risk-taking courage, self-efficacy, and creativity simultaneously influence entrepreneurial interest among agricultural vocational students in Takalar?

Therefore, this study aims to: (1) analyse the influence of risk-taking courage on entrepreneurial interest; (2) analyse the influence of self-efficacy on entrepreneurial interest; (3) analyse the influence of creativity on entrepreneurial interest; and (4) examine the simultaneous influence of these three variables on entrepreneurial interest among agricultural vocational students in Takalar.

RESEARCH METHOD

This study employed a quantitative approach with an ex post facto design, selected because the variables examined risk-taking courage, self-efficacy, creativity, and entrepreneurial interest already existed naturally among students and were not manipulated by the researcher. This design is appropriate for identifying behavioural and psychological factors that contribute to entrepreneurial readiness in vocational education settings.

The population consisted of students from two agricultural vocational high schools in Takalar District. A total sample of 136 students ($N = 136$) was selected using proportional random sampling. The number of respondents drawn from each school was determined proportionally according to the size of its student population, ensuring that each school was represented in accordance with its relative contribution to the total population. Within each school, students were randomly selected from the available student lists to provide equal opportunities for participation and to minimize sampling bias. This procedure ensured balanced representation across the two schools and supported the generalisability of the findings.

Data were collected using structured questionnaires developed from theoretical indicators of each variable. The instruments were validated through expert judgement and small-scale empirical testing, while reliability was assessed using Cronbach's Alpha, which yielded values above the acceptable threshold, indicating consistent and reliable measurement.

The questionnaires were administered directly in schools with assistance from teachers and research staff to ensure clear instructions and accurate responses from participants. Data analysis was conducted using R-Language to ensure analytical transparency and robust statistical diagnostics. Prior to hypothesis testing, normality, linearity, and multicollinearity were assessed. Simple linear regression was used to identify the partial influence of each independent variable on entrepreneurial interest, while multiple linear regression examined their simultaneous effect. Interpretation was based on regression coefficients, significance values, and the coefficient of determination (R^2), providing a comprehensive evaluation of the relationships among variables.

RESULTS AND DISCUSSION

Results

1. Descriptive Statistics

a. Risk-Taking Courage (X_1)

Table 1. Descriptive Statistics of Risk-Taking Courage (X_1)

Statistik	Nilai
N	136
Minimum	25
Maksimum	57
Range	32
Kuartil 1 (Q1)	37
Median	41
Kuartil 3 (Q3)	46
Mean	41.24
Standar Deviasi	7.08
Standard Error	0.61
Skewness	0.12
Kurtosis	-0.3

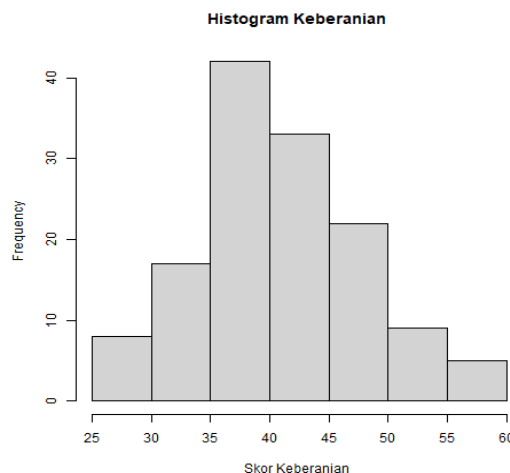


Figure 1. Histogram of Risk-Taking Courage (X_1)

The descriptive analysis of risk-taking courage among 136 students shows a mean score of 41.24 (SD = 7.08), indicating a generally high level of courage in facing risk. Most students fall into the High (39%) and Very High (27%) categories, while 24% are Low and 10% Very Low. The histogram shows a near-normal distribution, with most scores concentrated between 35 and 45, confirming that overall risk-taking courage is moderate to high.

b. Self-Efficacy (X_2)

The self-efficacy scores of students range from 22 to 58, with a mean of 41.23 (SD = 7.25), indicating generally strong confidence in performing tasks and facing challenges. Most students fall into the High (35%) and Very High (20%) categories, while 30% are Low and 15% Very Low. The distribution is approximately normal, with scores concentrated between 40 and 45, showing a relatively homogeneous level of self-efficacy among students.

Table 2. Descriptive Statistics of Self-Efficacy (X_2)

Statistik	Nilai
N	136
Minimum	22
Maksimum	58
Range	36
Kuartil 1 (Q1)	36
Median	41
Kuartil 3 (Q3)	46
Mean	41.23
Standar Deviasi	7.25
Standard Error	0.62
Skewness	-0.02
Kurtosis	-0.35

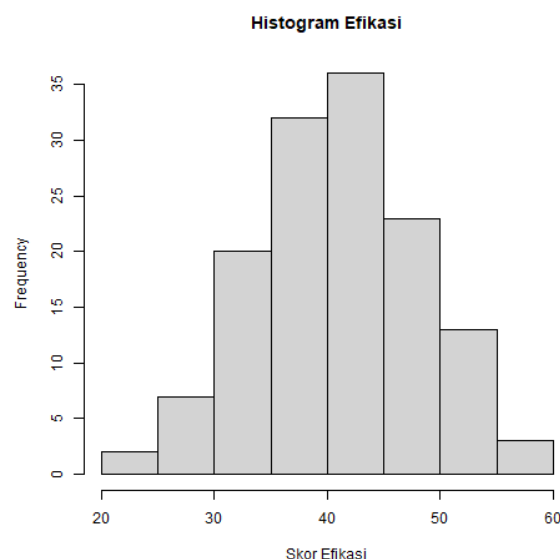


Figure 2. Histogram of Self-Efficacy (X_2)

c. Creativity (X_3)

Table 3. Descriptive Statistics of Creativity (X_3)

Statistik	Nilai
N	136
Minimum	18
Maksimum	60
Range	42
Kuartil 1 (Q1)	36
Median	41
Kuartil 3 (Q3)	45.25
Mean	40.74
Standar Deviasi	7.95
Standard Error	0.68
Skewness	-0.25
Kurtosis	0.16

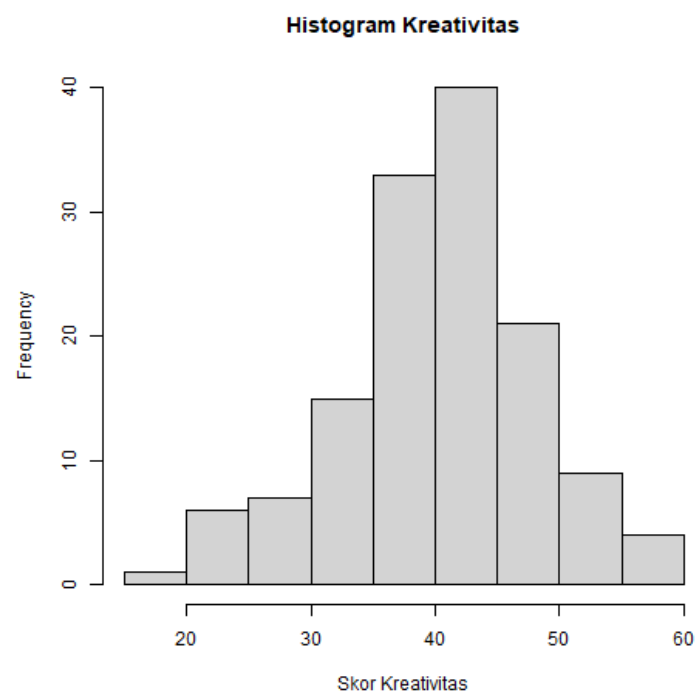


Figure 3. Histogram of Creativity (X_3)

Creativity scores range from 18 to 60, with a mean of 40.74 and a standard deviation of 7.95, indicating moderate-to-high creative ability among students and slightly greater variability compared to the other variables. Most students fall into the High (38%) and Very High (35%) categories, showing strong skills in generating ideas and solving problems creatively key competencies for entrepreneurial activities. The distribution also appears close to normal, with the highest concentration of scores in the 35–45 range and only a small number of students scoring very low or very high, suggesting a generally balanced distribution of creative abilities.

d. Entrepreneurial Interest (Y)

Table 4. Descriptive Statistics of Entrepreneurial Interest (Y)

Statistik	Nilai
N	136
Minimum	26
Maksimum	57
Range	31
Kuartil 1 (Q1)	37
Median	41
Kuartil 3 (Q3)	46
Mean	41.21
Standar Deviasi	7.2
Standard Error	0.62
Skewness	-0.02
Kurtosis	-0.6

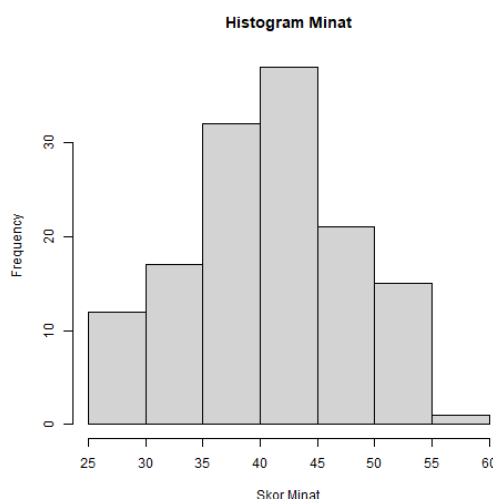


Figure 4. Histogram of Entrepreneurial Interest (Y)

Students' entrepreneurial interest is generally strong, with a mean score of 41.21. Most fall into the High (38%) and Very High (29%) categories. The distribution is slightly left-skewed, with scores concentrated between 40 and 45, indicating consistent and stable entrepreneurial interest across respondents.

2. Classical Assumption Test Results

The tests included normality, linearity, multicollinearity, and heteroscedasticity tests. All analyses were conducted using R-Language with the *nortest*, *car*, and other supporting function packages.

a. Normality Test

The normality test used the Kolmogorov-Smirnov method through the *nortest* package. The test criteria state that the data are normally distributed if the p-value is > 0.05 .

Table 5. Normality Test Results

Variabel	n	Statistik D	p-value	Keputusan
Minat	136	0.0634	0.1985	Normal
Keberanian	136	0.0647	0.1758	Normal
Efikasi	136	0.0725	0.0765	Normal
Kreativitas	136	0.0628	0.2101	Normal

All variables have p-values above 0.05, thus concluding that the data are normally distributed.

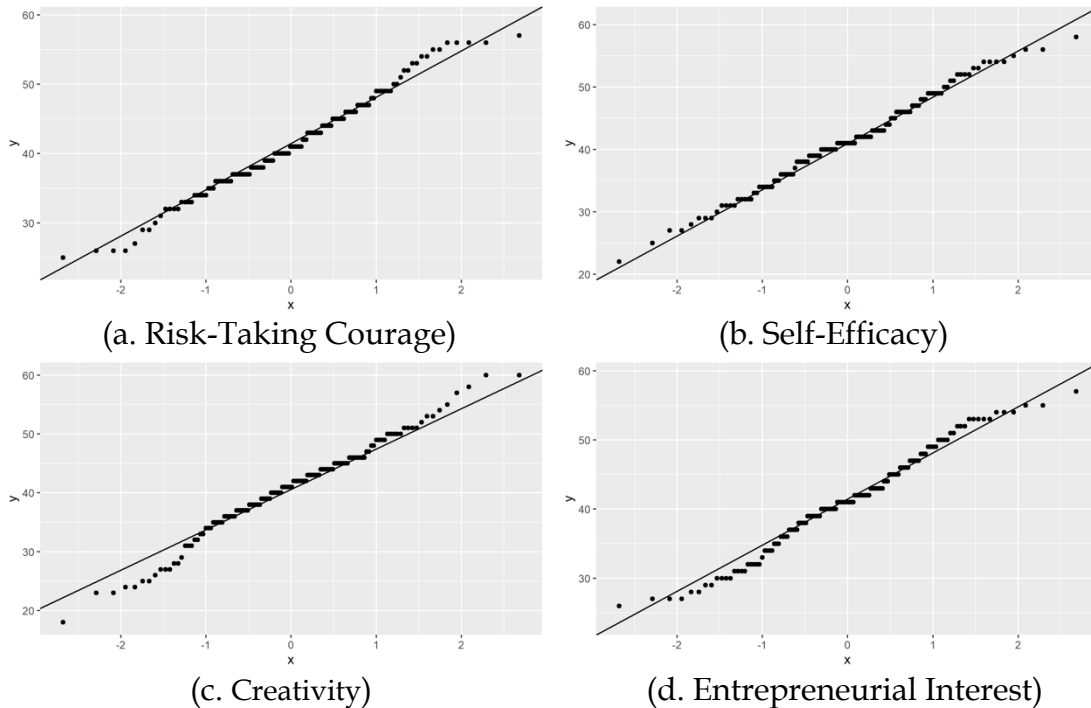


Figure 5. Graph of Risk-Taking Courage, Self-Efficacy, Creativity, and Interest in Entrepreneurship

This finding is further supported by the Q-Q Plot, where the data points consistently follow the diagonal line, indicating no significant deviation from the normal distribution.

b. Linearity Test

The linearity test was conducted using the test for linearity function from the **car** package in R-Language (RStudio). The linearity assumption is considered fulfilled when the value of deviation from linearity exceeds 0.05. The results of the linearity test for each independent variable with respect to entrepreneurial interest (Y) are presented below.

1) Linearity Test for Risk-Taking Courage (X_1)

Table 6. Linearity Test of Risk-Taking Courage (X_1) toward Entrepreneurial Interest (Y)

Model	Res.Df	RSS	Df	Sum of Sq	F	p-value	Keputusan
Linear: Minat ~ Keberanian	134	4892.1	-	-	-	-	-
Kuadratik: Minat ~ poly(Keberanian, 2)	133	4881.5	1	10.695	0.2914	0.5902	Tidak signifikan

(Source: Data analysis using R-Language, car package, 2025)

The analysis resulted in a significance value of 0.5902, which is greater than 0.05. This indicates that the relationship between risk-taking courage and entrepreneurial interest is linear. In other words, increases in risk-taking courage correspond to proportional increases in entrepreneurial interest.

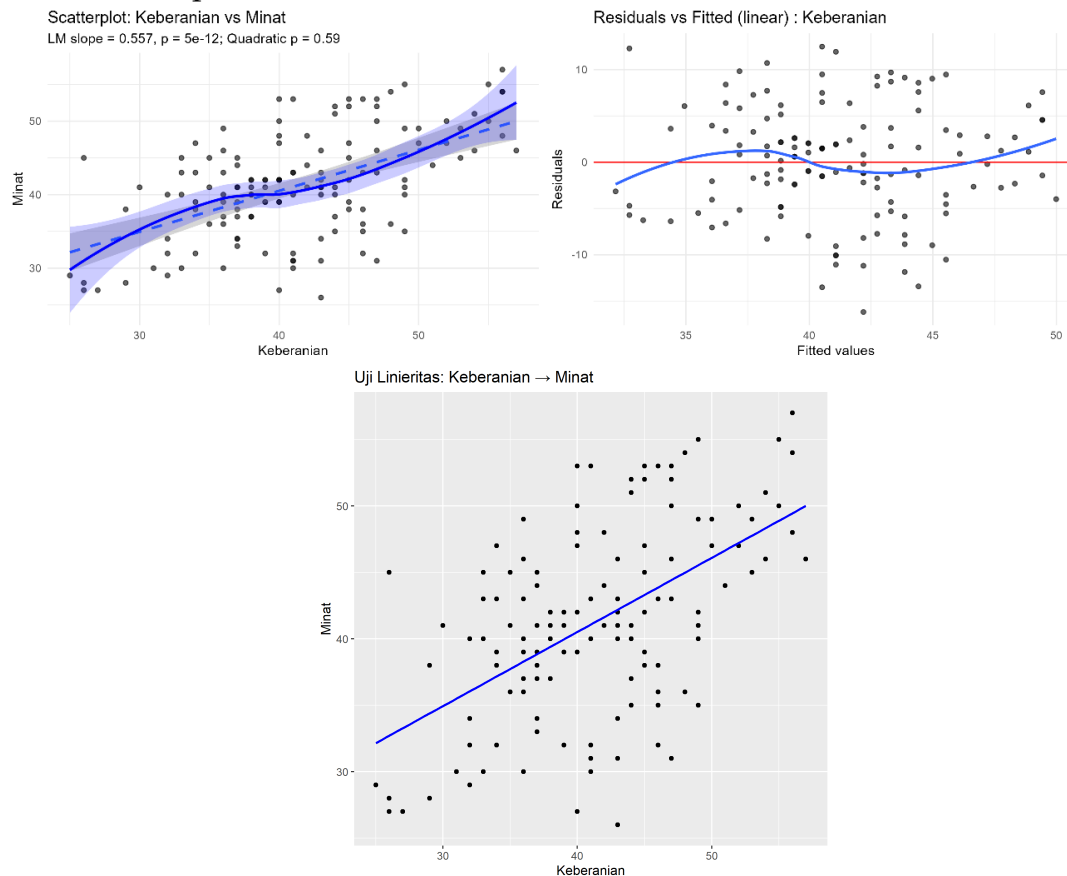


Figure 6. Linear Relationship Plot for $X_1 \rightarrow Y$
 (Source: R-Language Version 4.5.2, 2025)

The scatter plot shows data points aligning with an upward linear trend, indicating that higher risk-taking courage corresponds to higher entrepreneurial interest. This pattern supports the conclusion that the relationship between X_1 and Y is linear.

2) Linearity Test for Self-Efficacy (X_2)

Table 7. Linearity Test of Self-Efficacy (X_2) toward Entrepreneurial Interest (Y)

Analysis of Variance Table					
Model 1: Minat ~ Efikasi					
Model 2: Minat ~ poly(Efikasi, 2)					
Res. Df	RSS	Df	Sum of Sq	F	Pr(>F)
1	134	4843.5			
2	133	4836.0	1	7.4371	0.2045
				0.6518	

(Source: Data analysis using R-Language, car package, 2025)

The significance value for the linearity test was 0.6518, which is greater than 0.05. Thus, the relationship between self-efficacy and entrepreneurial interest is linear.

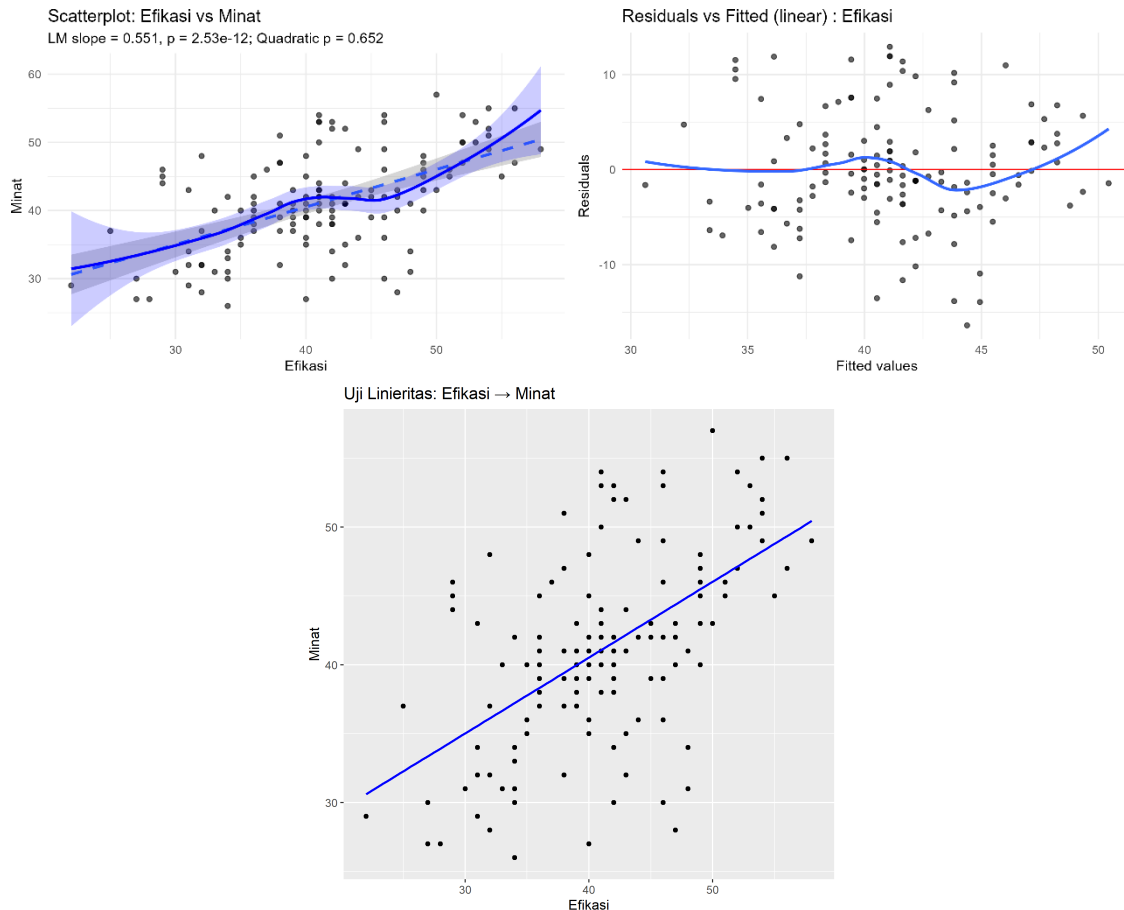


Figure 7. Linear Relationship Plot for $X_2 \rightarrow Y$
 (Source: R-Language Version 4.5.2, 2025)

The scatter plot shows data points clustered closely along an upward regression line, indicating a clear linear relationship. Higher self-efficacy corresponds to higher entrepreneurial interest, consistent with the statistical results.

3) Linearity Test for Creativity (X_3)

Table 8. Linearity Test of Creativity (X_3) toward Entrepreneurial Interest (Y)

Analysis of Variance Table					
Model 1: Minat ~ Kreativitas					
Model 2: Minat ~ poly(Kreativitas, 2)					
	Res. Df	RSS	Df	Sum of Sq	F Pr(>F)
1	134	4716.2			
2	133	4654.8	1	61.332	1.7524 0.1878

(Source: Data analysis using R-Language, car package, 2025)

The significance value for the deviation from linearity was 0.1878, which is greater than 0.05. Therefore, the relationship between creativity and entrepreneurial interest is linear.

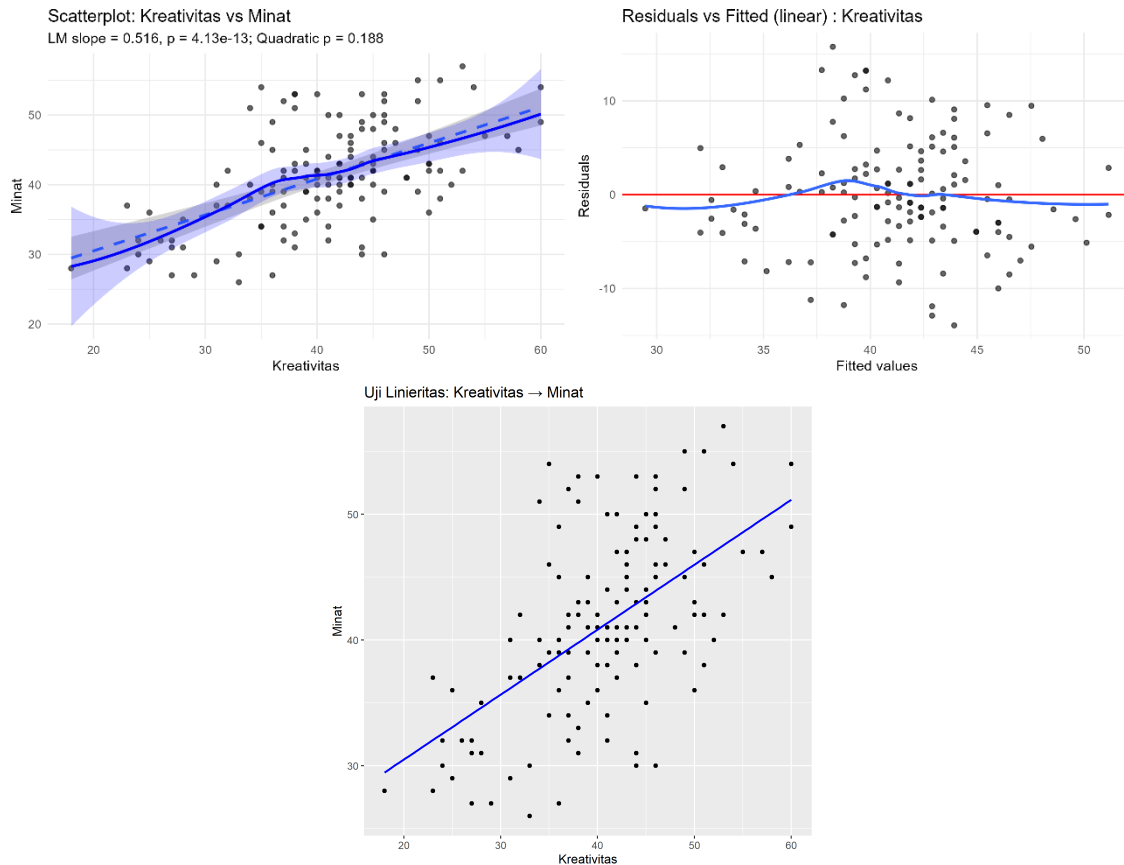


Figure 8. Linear Relationship Plot for $X_3 \rightarrow Y$
 (Source: R-Language Version 4.5.2, 2025)

The scatter plot aligns closely with the upward regression line, confirming a linear relationship between self-efficacy and entrepreneurial interest in accordance with the statistical findings.

c. Multicollinearity Test

The multicollinearity test was conducted to ensure that the independent variables were not highly correlated and did not interfere with the stability of the regression model. The model is considered free from multicollinearity when Tolerance values exceed 0.10 and VIF values are below 10. The results are shown in the following table.

Table 9. Multicollinearity Test Results

Variabel	VIF	Toleransi
Keberanian	1.337	0.748
Efikasi	1.566	0.638
Kreativitas	1.537	0.65

(Source: Data analysis using R-Language, car package, 2025)

All variables show Tolerance values above 0.10 and VIF values well below 10, indicating that there is no multicollinearity. Thus, the regression model is free from problematic shared variance among the independent variables.

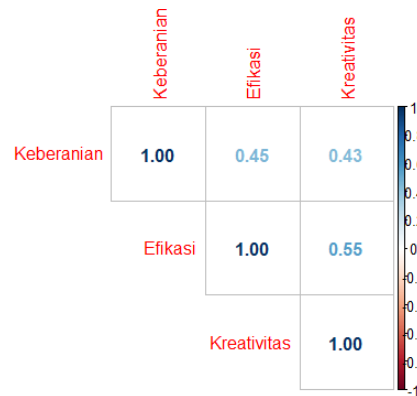


Figure 9. Multicollinearity Correlation Matrix
 (Source: R-Language Version 4.5.2, 2025)

The correlation matrix shows moderate correlations among the independent variables ($r = 0.43-0.55$), indicating that none of the relationships are excessively strong. These results confirm that the variables do not exhibit severe multicollinearity, consistent with the VIF and Tolerance findings.

d. Heteroscedasticity Test

Table 10. Heteroscedasticity Test Results

Test	Value
ncvTest_stat	
ncvTest_p	0.7873
Glejser1_R2	0.0162
Glejser1_min_p	0.1574
White_R2	0.0183
White_p_F	0.7891

All p-values from the ncvTest, Glejser test, and White test exceed 0.05, indicating no evidence of heteroscedasticity. Thus, the residuals are homoscedastic, and the regression model meets the heteroscedasticity assumption and is suitable for further analysis.

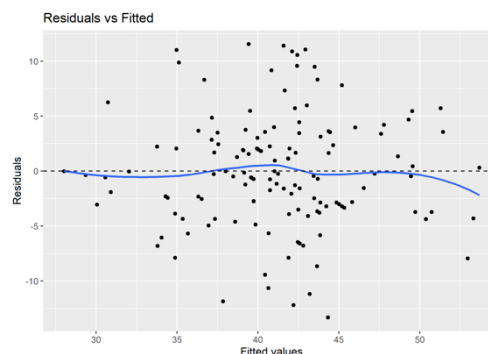


Figure 10. Heteroscedasticity Plot (Residuals vs. Fitted)
 (Source: R-Language Version 4.5.2, 2025)

The Residuals vs. Fitted plot shows randomly scattered points around the zero line with no visible pattern, indicating constant residual variance. This visual pattern supports that the model is free from heteroscedasticity.

3. Hypothesis Testing

Hypothesis testing in this study examined how Risk-Taking (X_1), Self-Efficacy (X_2), and Creativity (X_3) influence Entrepreneurial Interest (Y) using simple and multiple linear regression. These analyses were supported by prerequisite diagnostic tests to ensure the robustness of the model.

a. Simple Linear Regression Analysis

Simple linear regression was used to assess the partial effect of each independent variable on the dependent variable. The analysis was performed using R-Language (IMtest package). An effect is considered significant when $p < 0.05$ or $t > 1.978$, and non-significant when $p > 0.05$ or $t < 1.978$.

1) Effect of Risk-Taking (X_1) on Entrepreneurial Interest (Y)

Simple linear regression was used to assess the influence of Risk-Taking (X_1) on Entrepreneurial Interest (Y) among vocational students in Takalar Regency, using R-Language with the IMtest package.

Table 11. Model Summary for Risk-Taking (X_1) → Entrepreneurial Interest (Y)

Model Summary			
Model	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.3003	0.2951	6.042

The analysis produced an R^2 value of 0.3003, meaning that Risk-Taking accounts for 30% of the variance in Entrepreneurial Interest. This indicates a moderate contribution, showing that risk-taking tendencies play an important role in shaping students' entrepreneurial motivation.

Table 12. Results of the Contribution of the Risk-Taking Variable (X_1) to Entrepreneurial Intention (Y)

```

Coefficients:
      Estimate Std. Error t value Pr(>|t|)
(Intercept)  18.2199    3.0747   5.926 0.000
Keberanian    0.5574    0.0735   7.584 0.000
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
  
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(Source: R-Language IMtest package, 2025)

The regression coefficient for X_1 is 0.5574, indicating that an increase of one unit in Risk-Taking results in a 0.5574-unit increase in Entrepreneurial Interest.

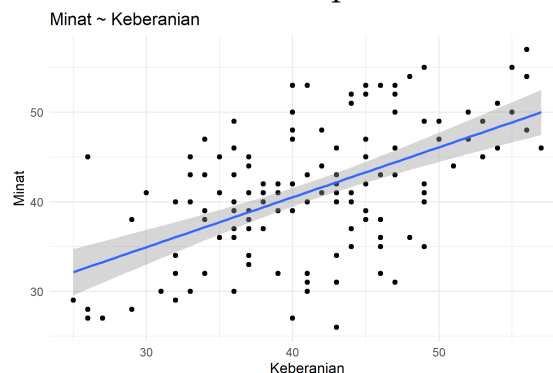


Figure 11. Graph of Risk-Taking Courage Variable
 (Source : Data processing results using R-Language Version 4.5.2 2025)

The scatter plot demonstrates an upward trend, consistent with the positive regression coefficient. The distribution of points around the fitted line illustrates a clear linear relationship.

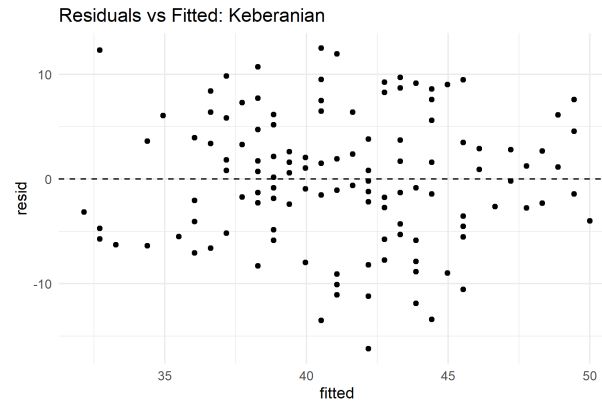


Figure 12. Graph of Residuals vs Fitted Boldness

(Source: Data processing results using R-Language Version 4.5.2 2025)

The Residuals vs. Fitted plot shows random dispersion around the zero line, indicating compliance with homoscedasticity and the absence of systematic prediction errors.

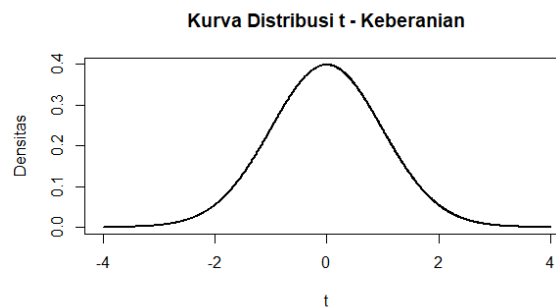


Figure 13. Graph of T-Test Results for Courage to Take Risks (X1)

(Source: Data processing results using RStudio Version 4.5.2 2025)

The t-distribution curve indicates $t = 4.191$, which exceeds the critical value of 1.978. The coefficient is statistically significant, confirming that Risk-Taking has a positive and significant partial effect on Entrepreneurial Interest.

2) Effect of Self-Efficacy (X_2) on Entrepreneurial Interest (Y)

The simple linear regression analysis was conducted to determine the extent to which Self-Efficacy (X_2) influences Entrepreneurial Interest (Y) among vocational school students in Takalar Regency. The analysis was performed using R-Language with the IMtest package as the analytical support.

Table 13. Model Summary for Self-Efficacy (X_2) → Entrepreneurial Interest (Y)

Model Summary			
Model	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.3073	0.3021	6.012

The analysis reveals an R^2 value of 0.3073, indicating that Self-Efficacy explains 30.7% of the variance in Entrepreneurial Interest. This demonstrates that students' confidence in their abilities contributes meaningfully to their intention and willingness to engage in entrepreneurial activities.

Table 14. Results of Self-Efficacy Variable Analysis

Coefficients:				
	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	18.50577	2.98893	6.191	6.801
<u>Efikasi</u>	0.55060	0.07141	7.710	2.530

<u>Signif. codes:</u>	0 '***'	0.001 '**'	0.01 '*'	0.05 '.' 0.1 ' ' 1

(Source: Results of data analysis using R-Language and the IMtest 2025 package)

Based on the regression coefficient displayed in Table 14, the model yields a positive coefficient ($\beta = 0.5506$). For every one-unit increase in Self-Efficacy, Entrepreneurial Interest (Y) increases by 0.5506 units. Thus, students who possess stronger confidence in their ability to perform tasks and solve problems tend to show greater interest in entrepreneurship.

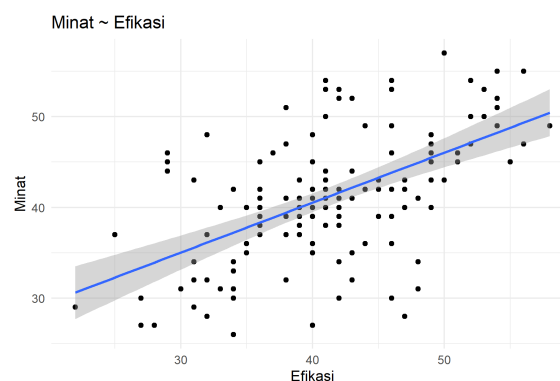


Figure 14. Self-Efficacy Scatter Plot

(Source: Data processed using R-Language Version 4.5.2 2025)

Figure 14 shows an upward trend in the scatter plot, where data points align with the fitted regression line. This pattern indicates that higher self-efficacy is associated with higher entrepreneurial interest, visually supporting the statistical findings.

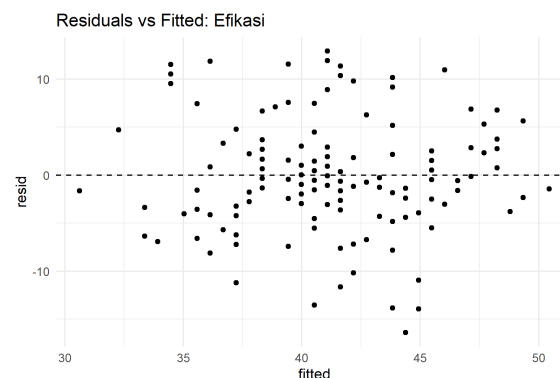


Figure 15. Residuals vs. Fitted Self-Efficacy Graph

(Source: Data processing using RLanguage Version 4.5.2 2025)

Figure 15 shows residuals randomly scattered around the zero line, with no detectable pattern. This indicates constant variance, model stability, and the absence of systematic bias. Thus, the regression assumptions for Self-Efficacy are satisfied.

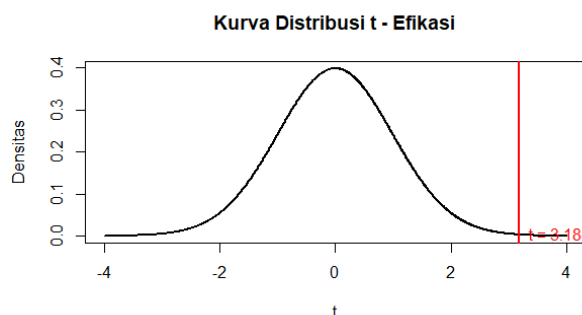


Figure 16. Graph of Self-Efficacy T-Test Results (X₂)
 (Source: Data processing using R-Language Version 4.5.2 2025)

Figure 16 shows the t-test results with $t = 3.188$, exceeding the critical value of ± 1.978 , placing it in the rejection region of H_0 . This indicates that Self-Efficacy (X_2) has a positive and significant partial effect on Entrepreneurial Interest (Y). The finding confirms that students with stronger confidence in their abilities tend to show higher entrepreneurial interest.

3) Effect of Creativity (X_3) on Entrepreneurial Interest (Y)

Simple linear regression was used to examine the influence of Creativity (X_3) on Entrepreneurial Interest (Y) among vocational school students in Takalar Regency, using R-Language with the IMtest package.

Table 15. Model Summary for Creativity (X_3) → Entrepreneurial Interest (Y)

Model Summary			
Model	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.3255	0.3205	5.933

The analysis produced an R^2 value of 0.3255, indicating that Creativity accounts for 32% of the variation in Entrepreneurial Interest. This demonstrates that creative tendencies play an important role in shaping students' entrepreneurial motivation.

Table 16. Results of Creativity Variable Analysis

```

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  20.1743    2.6643   7.572 0.000
Kreativitas   0.5163    0.0642   8.042 0.000
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
  
```

(Source: Results of data analysis using R-Language and the IMtest 2025 package)

Table 16 shows that the regression coefficient for Creativity is $\beta = 0.5163$, indicating a positive effect. Each one-unit increase in Creativity increases Entrepreneurial Interest (Y) by 0.5163 units. This means that students with higher creativity such as in generating ideas, innovating solutions, and thinking adaptively tend to exhibit stronger entrepreneurial interest.

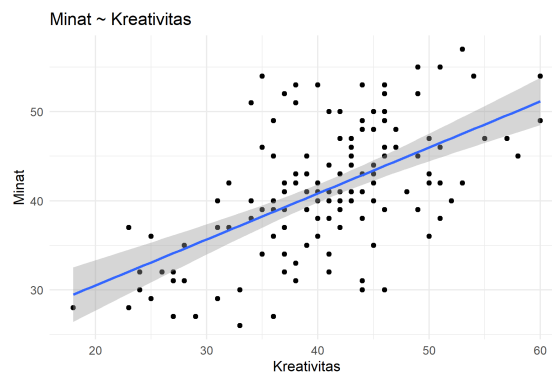


Figure 17. Creativity Scatter Plot

(Source: Data processing using R-Language Version 4.5.2 2025)

Figure 17 shows an upward trend in the scatter plot, with data points aligning along the fitted regression line. This indicates a linear relationship where higher creativity corresponds to higher entrepreneurial interest, visually supporting the regression results.

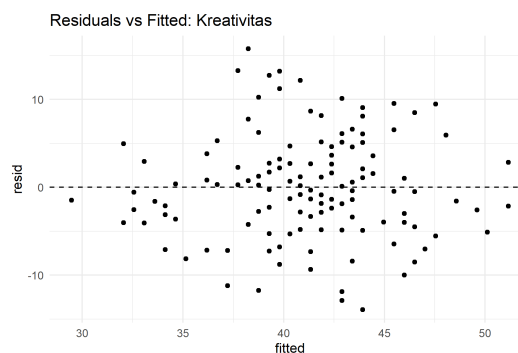


Figure 18. Graph of Residuals vs. Fitted Creativity

(Source: Data processing results using R-Language Version 4.5.2 2025)

Figure 18 shows residuals that are evenly and randomly scattered around the zero line, with no visible pattern. This indicates constant residual variance and the absence of heteroscedasticity, confirming that the regression model for Creativity meets the homoscedasticity and adequacy assumptions. Thus, the model is appropriate for interpreting the effect of Creativity on entrepreneurial interest.

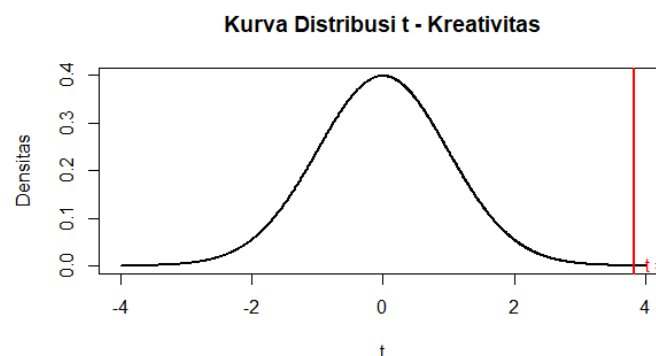


Figure 19. Graph of Creativity T-Test Results (X3)

(Source: Data processing using R-Language Version 4.5.2 2025)

Figure 19 shows the t-test result with $t = 3.831$, which exceeds the critical value of ± 1.978 , placing it in the rejection region of H_0 . This indicates that Creativity (X_3) has a positive and significant partial effect on Entrepreneurial Interest (Y). Thus, students who are more imaginative, innovative, and able to generate original solutions tend to show stronger entrepreneurial interest.

b. Multiple Linear Regression Analysis

Multiple linear regression was used to examine the simultaneous influence of Risk-Taking (X_1), Self-Efficacy (X_2), and Creativity (X_3) on Entrepreneurial Interest (Y) among vocational school students in Takalar Regency, using R-Language with the car package. The F-test was applied to determine whether the three variables jointly provide a significant contribution to the model.

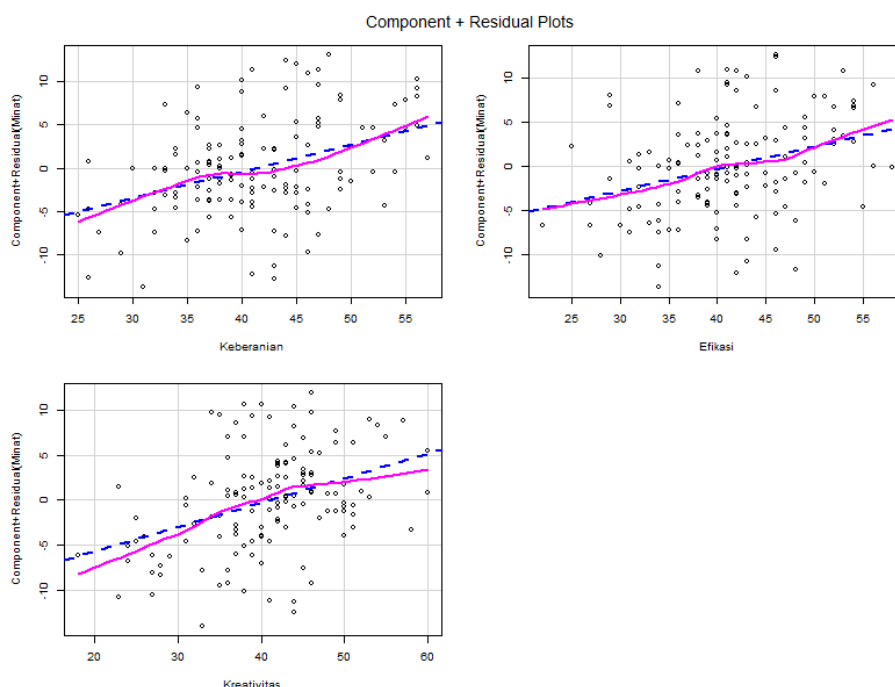
Table 17. Presents the coefficient estimates for the three predictor variables

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	7.10497	3.17099	2.241	0.0267	
Keberanian	0.31027	0.07404	4.191	0.0000	
Efikasi	0.24944	0.07824	3.188	0.0017	
Kreativitas	0.27059	0.07063	3.831	0.0001	

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					

(Source: Results of data analysis using R-Language and the car 2025 package)

All independent variables show positive and significant effects on Entrepreneurial Interest, with coefficients as follows: Risk-Taking ($\beta = 0.31027$, $p < 0.001$), Self-Efficacy ($\beta = 0.24944$, $p = 0.0017$), and Creativity ($\beta = 0.27059$, $p < 0.001$). The constant value (7.10497) indicates that Entrepreneurial Interest already has a positive baseline even without the predictors. Overall, these findings confirm that the three variables jointly strengthen students' entrepreneurial interest.



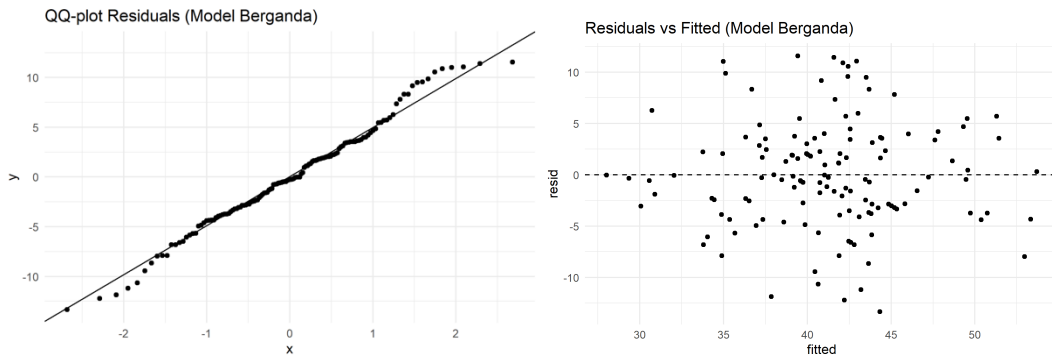


Figure 20. Component + Residual Plots

(Source: Data processing using R-Language Version 4.5.2 2025)

Figure 20 shows the Component + Residual Plots, where each fitted line displays an upward trend. The smoothing lines follow the same direction without noticeable curvature, indicating that all predictors have a positive linear relationship with Entrepreneurial Interest and that the linearity assumption is satisfied.

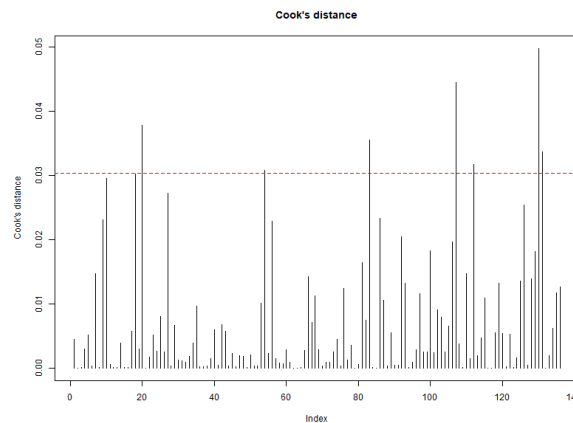


Figure 21. Cook's Distance Graph

(Source: Data processing using R-Language Version 4.5.2 2025)

Figure 21 shows that the Cook's Distance values remain below 0.05, far below the commonly used threshold (0.5). This indicates that no observation exerts an excessive influence on the regression coefficients, and the model is stable and reliable.

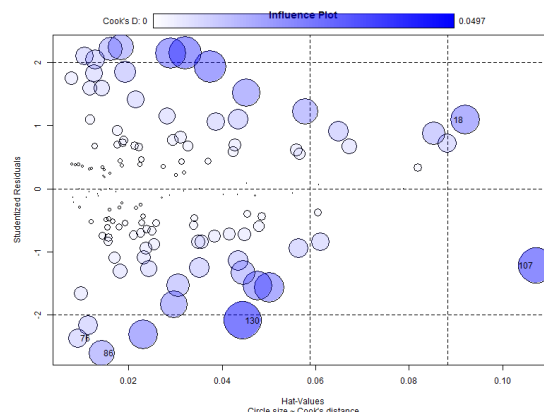


Figure 22. Influence Plot

(Source: Data processing using R-Language Version 4.5.2 2025)

Figure 22 shows several observations with higher leverage or studentized residuals (such as 107, 130, 18, and 86). However, the maximum Cook's Distance value (0.0497) is well within acceptable limits, indicating that none of these points are influential or problematic. Thus, all observations were retained in the final analysis.

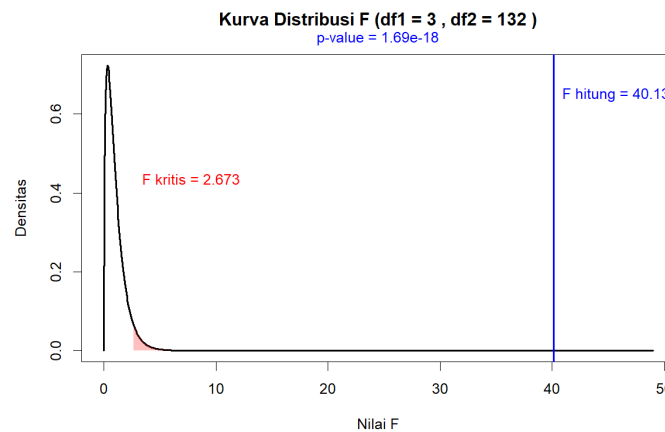


Figure 23. F-Test Result Curve

(Source: Data processing using R-Language Version 4.5.2 2025)

The F-test confirms that the regression model is statistically significant, with $F = 40.13$, $p = 1.69 \times 10^{-18}$, and an F-critical value of 2.673. Since F exceeds F -critical and $p < 0.05$, the results indicate that Risk-Taking, Self-Efficacy, and Creativity jointly have a significant influence on Entrepreneurial Interest.

c. Coefficient of Determination (R^2)

Table 18. Presents the results of the determination coefficient analysis for the three independent variables – Risk-Taking (X_1), Self-Efficacy (X_2), and Creativity (X_3) in predicting Entrepreneurial Interest (Y).

```

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  7.10497    3.17099   2.241 0.026722 *
Keberanian   0.31027    0.07404   4.191 5.06e-05 ***
Efikasi      0.24944    0.07824   3.188 0.001789 **
Kreativitas  0.27059    0.07063   3.831 0.000196 ***
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Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 5.263 on 132 degrees of freedom
Multiple R-squared:  0.477,    Adjusted R-squared:  0.4651
F-statistic: 40.13 on 3 and 132 DF,  p-value: < 2.2e-16
  
```

(Source: Data processing results using R-Language Version 4.5.2 2025)

The Multiple R-squared value of 0.477 indicates that the three predictors jointly explain 47.7% of the variance in Entrepreneurial Interest, while the Adjusted R-squared of 0.4651 confirms strong explanatory power after accounting for predictors and sample size. The F-test result ($F = 40.13$, $p < 0.001$) further verifies that the model is statistically significant. Overall, these findings show that the three variables collectively make a substantial contribution to students' entrepreneurial interest.

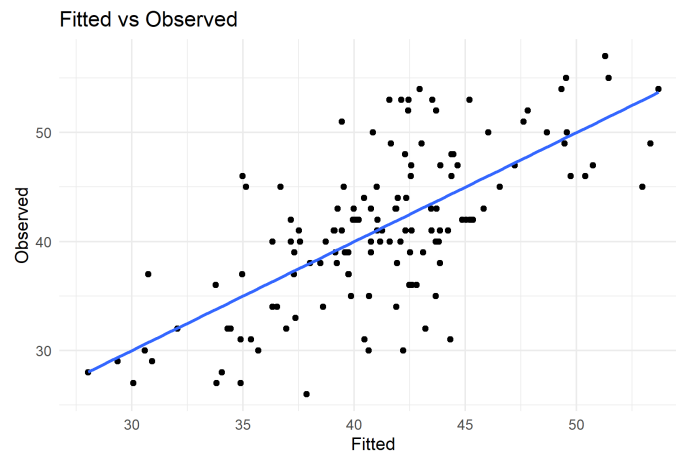


Figure 24. Fitted vs. Observed Graph

(Source: Data processing results using R-Language Version 4.5.2 2025)

Figure 24 shows that the observed data points cluster closely around the fitted regression line, indicating strong predictive accuracy. Higher predicted values correspond to higher observed values, and no extreme deviations are visible. This pattern confirms that the regression model appropriately captures the positive and consistent relationship between predicted and actual entrepreneurial interest.

Discussion

The findings of this study confirm that risk-taking propensity, self-efficacy, and creativity significantly shape students' entrepreneurial interest. These results reinforce contemporary entrepreneurship theory, which states that entrepreneurial interest emerges when individuals feel capable, prepared, and able to identify opportunities.

Risk-taking propensity was found to have a significant positive influence on entrepreneurial interest. In the context of agricultural vocational schools, this finding is particularly important because agricultural entrepreneurship involves high levels of uncertainty related to climate conditions, crop failure, fluctuating market prices, and production risks. Students who are more willing to face uncertainty and make decisions under risky conditions tend to show stronger interest in pursuing agribusiness opportunities. This finding supports the view that entrepreneurial activities are closely associated with risk-related decision making and opportunity exploitation. The result is consistent with Zhang and Cain (2017), who explained that risk-related behaviour influences entrepreneurial intention through entrepreneurial attitudes and self-efficacy. In agricultural vocational education, students with stronger risk-taking tendencies may be more prepared to engage in innovative farming practices, agribusiness development, and independent agricultural enterprises. Therefore, entrepreneurship learning in agricultural vocational schools should integrate agribusiness simulations, field-based projects, and agricultural risk-management practices to strengthen students' entrepreneurial readiness in real agricultural environments.

Self-efficacy also demonstrates a significant influence on entrepreneurial interest. Students who believe in their ability to plan, manage, and execute business tasks show greater interest in entrepreneurship. This finding strengthens the argument that vocational students with high self-confidence are more likely to view entrepreneurship as a viable career option. The result aligns with the findings of Elnadi and Gheith

(2021), Doanh and Bernat (2019), and Newman et al. (2019), who emphasised that self-efficacy enhances opportunity recognition and venture initiation. These findings highlight the need for entrepreneurship learning to build confidence through hands-on practice, mentoring, and project-based activities.

However, in rural agricultural economies, the positive effect of risk-taking propensity may not always translate directly into stronger self-efficacy when students perceive limited entrepreneurial opportunities in their local environment. Even students who are willing to take risks may doubt their ability to successfully establish a business if they believe that market access, financial resources, technological support, or business networks are insufficient. In such situations, low opportunity perception can weaken the confidence needed to transform risk-taking attitudes into entrepreneurial action. This suggests that entrepreneurial self-efficacy is influenced not only by personal characteristics but also by how students perceive the availability of opportunities within their surrounding agricultural ecosystem. Therefore, entrepreneurship education in rural vocational schools should focus not only on developing risk-taking courage but also on increasing students' exposure to successful agribusiness models, market opportunities, and local entrepreneurial networks to strengthen their confidence in pursuing entrepreneurial careers. Future research can further investigate which dimensions of self-efficacy, namely planning, decision-making, and problem-solving, most strongly influence entrepreneurial interest.

Creativity emerged as the strongest predictor of entrepreneurial interest in this study. Students who are capable of generating new ideas, innovating, or improving existing products tend to demonstrate higher entrepreneurial interest. This is in line with your thesis argument that creative students are more adept at recognising opportunities and proposing innovative solutions. Findings from Zampetakis and Moustakis (2021), Choi et al. (2020), and Suryana and Bayu (2019) similarly show that creativity is a key driver of entrepreneurial interest. Creativity can be enhanced through activities such as workshops, design-based learning, and innovation-focused projects that help vocational students connect their competencies with potential business ideas. Future studies may assess the role of digital tools, maker-space environments, or prototype technology in strengthening creativity and entrepreneurial interest.

The regression analysis indicates that risk-taking propensity, self-efficacy, and creativity jointly explain 47.7% of the variation in entrepreneurial interest. This demonstrates that entrepreneurial interest is shaped by a combination of students' willingness to take risks, confidence in their capabilities, and creative ability to identify and develop opportunities. These findings underscore the importance of entrepreneurship education that goes beyond theoretical business knowledge. Learning strategies such as industry collaboration, project-based learning, mentoring programs, and innovation workshops can effectively enhance students' readiness and interest in entrepreneurship.

CONCLUSION

Fundamental Finding : This study confirms that risk-taking propensity, self-efficacy, and creativity significantly and positively influence students' entrepreneurial interest. Each variable contributes to students' readiness, confidence, and ability to generate ideas, while jointly explaining 47.7% of the variance in entrepreneurial interest. These findings reinforce the thesis that entrepreneurial interest develops through personal

attributes strengthened by experiential learning. **Implication :** The results highlight the need for vocational education to integrate learning approaches that develop courage in decision-making, strengthen confidence, and enhance creative thinking. Project-based learning, industry collaboration, and practical entrepreneurial activities are essential. For vocational curriculum designers, entrepreneurship competencies should be systematically embedded into agricultural vocational subjects through agribusiness project assignments, business incubation programs, field-based entrepreneurial practice, and problem-solving activities related to real agricultural challenges. Curriculum policies should also encourage partnerships with local agribusiness industries and the integration of entrepreneurial assessment indicators that measure students' innovation, initiative, and risk-management abilities. **Limitation :** This study is limited to SMK students in Takalar Regency and uses a cross-sectional design, limiting generalizability and long-term interpretation. It also focuses on three internal variables, while other external influences such as family, school environment, and socio-economic factors were not included. **Future Research :** Future studies should use longitudinal or experimental designs, include additional variables (e.g., family background, digital literacy, entrepreneurial ecosystem), and compare students across different regions or vocational majors. Evaluating specific learning interventions such as simulations or maker-space activities may provide deeper insight into strengthening entrepreneurial interest.

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