

Communication of Advanced Study Innovation for Students of Vocational School 1 Talangpadang

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Abstract

This study aims to analyze the influence of student characteristics and advanced study attributes on students' decisions to pursue higher education at SMKN 1 Talangpadang. The background stems from the low gross enrollment rate (GER) in higher education in Tanggamus Regency, which is significantly below the provincial average. Based on Rogers' Diffusion of Innovations theory, this research examines factors such as parental education, number of siblings, family income, and the perceived relative advantage, compatibility, complexity, trialability, and observability of pursuing higher education. Using a quantitative approach and multiple linear regression analysis, data were collected from 100 students through stratified random sampling. The findings indicate that both student characteristics and the attributes of advanced study programs significantly influence students' decisions. Students with higher family support, stronger perceptions of the advantages of further education, and exposure to successful role models were more inclined to pursue higher studies. Meanwhile, perceptions of high complexity and financial constraints were key barriers. This research provides strategic recommendations to improve higher education participation rates by enhancing innovation communication tailored to students' needs and perceptions.

Keywords

Innovation Diffusion, Higher Education, Student Characteristics, Study Decision

Introduction

Higher education plays a fundamental role in driving economic growth, fostering innovation, and reducing social inequality. However, disparities in access and participation rates persist in many developing regions, including Indonesia. The Central Bureau of Statistics (BPS) reported that the gross enrollment rate (GER) for higher education in Lampung Province stood at 21.88% in 2023, with Tanggamus Regency recording a much lower figure at only 4.09%. Such a low participation rate highlights significant structural and socio-economic barriers that hinder educational progression beyond secondary school.

In the case of SMKN 1 Talangpadang, this phenomenon is particularly evident. Between the 2017 and 2021 academic years, the average proportion of graduates pursuing higher education was merely 8.04%. Various studies have emphasized that decisions regarding the continuation of education are influenced not only by economic factors but also by cultural expectations, access to information, family background, and individual perceptions of the value of higher education (Cahyandari W. 2021).

According to Rogers' Diffusion of Innovations theory, the adoption of new ideas or behaviors is influenced by five key factors: relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003). Higher education, when framed as an innovation for vocational school students, must be communicated effectively to overcome existing perceptions and socio-economic barriers. Communication that highlights clear benefits (relative advantage), demonstrates compatibility with students' life goals, reduces perceived complexity, offers trial experiences (trialability), and showcases observable success stories can significantly increase the likelihood of adoption (Krismiati, M. n.d.).

In addition, the socio-economic status of students' families, particularly parental education and income, has been consistently found to correlate positively with educational aspirations (Perna, 2006; Suryani, 2016). Students from lower-income backgrounds or those whose parents have limited educational attainment are often less exposed to the benefits and opportunities associated with higher education, thus perpetuating cycles of limited educational attainment (Wijaya, 2018).

Previous studies have also underscored the importance of peer influence, school environment, and the availability of scholarships or financial aid programs, such as KIP-Kuliah in Indonesia, in shaping students' decisions to pursue higher education (Montanesa et al., 2023; Moonti et al., 2022). Yet, specific attention to vocational school students remains limited, particularly regarding how innovation communication strategies can be tailored to their unique socio-educational contexts.

Therefore, this study seeks to fill the research gap by analyzing the influence of both student characteristics and innovation attributes on the decision to pursue higher education among students of SMKN 1 Talangpadang. By applying the Diffusion of Innovations theory in the context of educational advancement, the study proposes a strategic communication framework aimed at enhancing higher education participation rates. This original contribution is expected to provide actionable insights for policymakers, educators, and practitioners in rural Indonesia and similar socio-economic contexts globally.

Methods

Research Design

This research adopted a quantitative approach grounded in the positivist paradigm. Positivism emphasizes objectivity, causality, and the empirical verification of hypotheses. The study utilized a survey method with structured questionnaires, aiming to test the influence of student characteristics and advanced study attributes on students' decisions to pursue higher education. The research design was post-hoc and non-experimental, meaning the variables were measured without manipulation (Sugiyono, 2016).

The research also incorporated elements of applied social science research, as it sought not only to explain phenomena but to propose actionable strategies for increasing higher education participation among vocational students.

Research Location and Time

The study was conducted at SMKN 1 Talangpadang, located in Tanggamus Regency, Lampung Province, Indonesia. Data collection took place between February and March 2025. The location was chosen due to its relevance to the research problem, given the low gross enrollment rate (GER) of higher education in the area.

Population and Sample

The population of the study consisted of 1,381 active students enrolled at SMKN 1 Talangpadang across all grade levels and majors. Given the large size of the population, the sample size was determined using Slovin's formula at a 10% margin of error, resulting in a sample of 100 students (Sugiyono, 2019).

A stratified random sampling technique was employed to ensure proportional representation across different grade levels (Arikunto, 2017). Stratification was based on academic year to capture variations in decision-making readiness.

Table 1. Sample Distribution

Grade Level	Total Students	Sample Size
Grade 10	495	30
Grade 11	450	30
Grade 12	436	40

This proportional allocation allowed for more accurate generalizations regarding the overall student population's decision-making patterns.

Data Types and Sources

1. Primary Data: Collected directly from students using structured questionnaires.
2. Secondary Data: Included institutional data from SMKN 1 Talangpadang, enrollment data from BPS Lampung Province, and relevant policy documents regarding higher education access initiatives.

Primary data collection focused on:

1. Demographic and socio-economic backgrounds
2. Students' perceptions of higher education attributes
3. Decision-making processes regarding further study

Secondary data provided contextual support to validate primary findings.

Variables and Operational Definitions

1. Independent Variables:

- a. Student Characteristics: Parental education (highest educational attainment), number of siblings, and family income.
- b. Advanced Study Attributes: Measured according to Rogers' five innovation characteristics: relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003).

2. Dependent Variable:

Decision to pursue undergraduate education, coded as a binary variable (1 = intends to continue, 0 = does not intend).

Each construct was operationalized using multiple indicators adapted from validated instruments used in prior educational diffusion studies (Montanesa et al., 2023; Moonti et al., 2022).

Instrument Development

The questionnaire items were developed based on established theories and prior research, particularly Rogers' diffusion model and studies on educational aspiration determinants (Perna, 2006; Suryani, 2016). The instrument underwent a pilot test involving 30 students who were not part of the final sample. Revisions were made based on feedback to improve clarity, reliability, and validity.

1. Validity Testing: Construct validity was assessed using Pearson's product-moment correlation. Items with corrected item-total correlations above 0.3 were considered valid (Sugiyono, 2019).
2. Reliability Testing: Internal consistency was evaluated using Cronbach's alpha coefficient. A value above 0.7 indicated satisfactory reliability (Ghozali, 2016).

Measurement Scale

All variables were measured using a four-point Likert scale:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Agree
- 4 = Strongly Agree

This approach aimed to minimize central tendency bias often observed in odd-numbered scales (Joshi et al., 2015).

Data Collection Procedure

Data collection was conducted in three stages:

1. Preparation: Permission letters were obtained from school authorities.
2. Administration: Questionnaires were administered in person during class hours, supervised by the researcher and teachers.
3. Verification: Completed questionnaires were checked for completeness and consistency before coding and entry.

Students were informed of their rights, assured of confidentiality, and participation was entirely voluntary.

Data Analysis Techniques

Data were processed and analyzed using SPSS version 26.0. The following procedures were applied:

1. Descriptive Analysis: To summarize sample characteristics.
2. Validity and Reliability Analysis: To ensure measurement accuracy.
3. Multiple Linear Regression: To test the influence of independent variables on the dependent variable.
4. Classical Assumption Testing:
 - a. Normality Test (Kolmogorov-Smirnov test)
 - b. Multicollinearity Test (Variance Inflation Factor, VIF)
 - c. Heteroscedasticity Test (Glejser Test)
5. Hypothesis Testing:
 - a. Partial significance testing using t-test
 - b. Simultaneous significance testing using F-test
 - c. Significance level set at $\alpha = 0.05$

Interpretations adhered to guidelines proposed by Hair et al. (2010) regarding multivariate analysis.

Ethical Considerations

The study was conducted in accordance with ethical research principles, including respect for participants' autonomy, confidentiality, and informed consent. The research protocol was approved by the Ethics Committee of Universitas Bandar Lampung (UBL) under protocol.

Results and Discussion

Characteristics of Respondents

The respondents consisted of 100 students from SMKN 1 Talangpadang, Lampung Province. Based on gender, 58% were female and 42% male. In terms of class level, 30% were from Grade 10, 30% from Grade 11, and 40% from Grade 12. Respondents' academic majors varied, with a predominance in The Office Automation and Management (OAMP) and Computer and Network Engineering (CNE) majors have the highest percentages, each at (18%). The grouping based on the gender of the respondents who filled out the closed-ended questionnaire can be seen in the diagram.

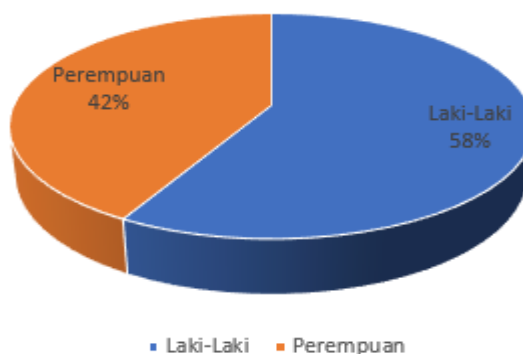


Figure 1. Respondent characteristics based on gender

Here is the diagram representation of the respondents' characteristics based on their grade level:

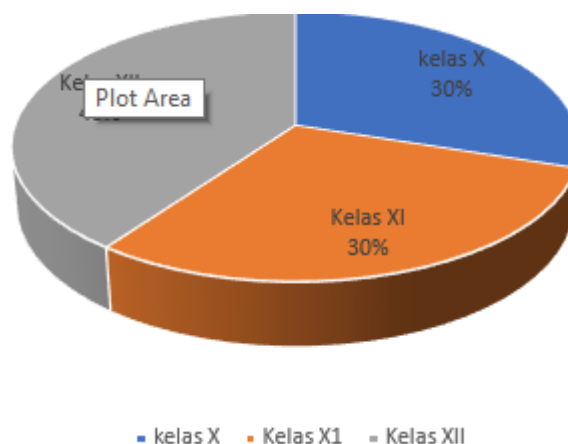


Figure 2. Respondent characteristics based on grade level

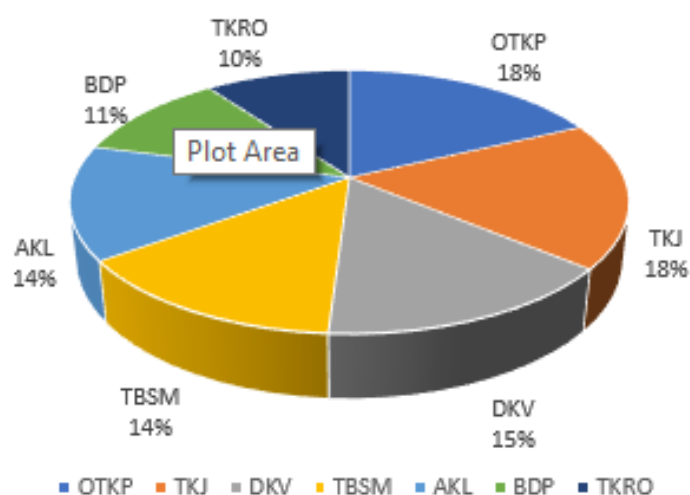


Figure 3. Respondent Characteristics Based on Major

These demographic characteristics suggest that the sample was representative of the broader student population and provided a comprehensive overview of students at different educational stages, aligning with the principle of stratified sampling (Arikunto, 2017).

Descriptive Statistics of Variables

Student Characteristics (X1):

1. Most respondents had mothers with senior high school education (62%), indicating moderate parental education levels.
2. Family income was predominantly between IDR 1,000,000–2,500,000 per month, reflecting the socioeconomic status typical in rural Indonesia (Gerasimov, 2009).
3. The number of siblings per family ranged between 2 and 4 for the majority of students.

Advanced Study Characteristics (X2)

Students showed generally favorable perceptions of higher education:

1. Relative Advantage: Students recognized the significant benefits of a university degree for future employment and social mobility.
2. Compatibility: Higher education aspirations were largely compatible with personal goals and family expectations.
3. Complexity: Some students perceived pursuing higher education as complicated due to entrance exams and financial burdens.
4. Trialability: Opportunities to experience higher education environments (e.g., campus visits) were limited.
5. Observability: Successful alumni were visible role models that positively influenced students' intentions.

Study Decision (Y)

1. 52% expressed a strong intention to pursue undergraduate education.
2. 48% did not plan to continue, citing financial barriers and concerns about job prospects after graduation.

These results highlight both motivations and perceived obstacles in the transition from vocational education to university-level studies.

Instrument Testing

Validity testing using Pearson's product-moment correlation showed that all items had r -values greater than the r -table threshold ($r > 0.3$), ensuring construct validity (Sugiyono, 2019).

Reliability analysis using Cronbach's Alpha showed values above 0.7 for all variable scales, indicating strong internal consistency (Ghozali, 2016).

Table 2. Reliability Testing Results

Reliability Statistics			
Cronbach's Alpha	Nilai Kritis	N of Items	Keterangan
0.793	> 0,60	17	Reliabel

Sumber: olah data SPSS 27, 2025

Classical Assumption Tests

1. Normality Test: The Kolmogorov-Smirnov statistic yielded a significance value of 0.793 (> 0.05), suggesting a normal data distribution.

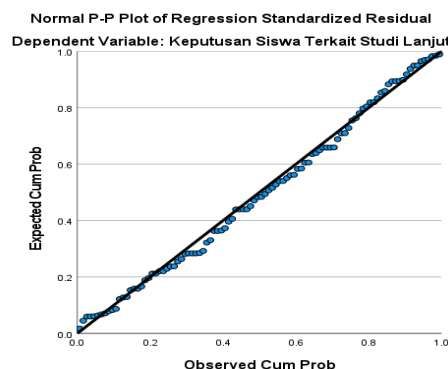


Figure 4. Normality Test Result

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		100
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	1.41166326
Most Extreme Differences	Absolute	.060
	Positive	.060
	Negative	-.038
Test Statistic		.060
Asymp. Sig. (2-tailed) ^c		.200 ^d
Monte Carlo Sig. (2-tailed) ^e	Sig.	.507
	99% Confidence Interval	Lower Bound
		Upper Bound
		.495
		.520

Figure 5. Kolmogorov-Smirnov Test Result

2. Multicollinearity Test: Tolerance values were > 0.10 and VIF values < 10 , confirming no multicollinearity issues among independent variables (Hair et al., 2010).

Coefficients ^a		
Collinearity Statistics		
Model	Tolerance	VIF
1 (Constant)		
Karakteristik Siswa	.958	1.044
Karakteristik Studi Lanjut	.958	1.044

Figure 6. Multicollinearity Test Result

3. Heteroscedasticity Test: Glejser test results showed no patterns of heteroscedasticity ($p > 0.05$), supporting the robustness of the regression model.

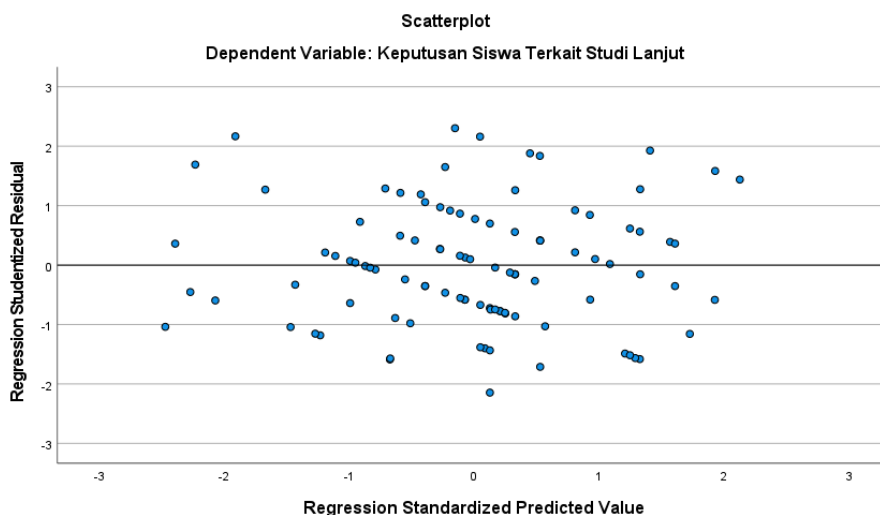


Figure 7. Heteroscedasticity Test Result

Thus, the data met the necessary conditions for multiple linear regression analysis.

Regression Analysis

The multiple linear regression equation derived was:

$$Y = 1.092 + 0.098X_1 + 0.196X_2$$

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.092	.414		2.637	.010
	Karakteristik Siswa	.098	.029	.175	3.447	<.001
	Karakteristik Studi Lanjut	.196	.012	.822	16.153	<.001

a. Dependent Variable: Keputusan Siswa Terkait Studi Lanjutan

Figure 8. Regression Coefficients Result

The adjusted R² value was 0.196 meaning that approximately 36.9% of the variation in study decision-making was explained by the model.

These results demonstrate that both independent variables have a positive and statistically significant impact on students' decisions to pursue higher education.

Hypothesis Testing

1. Partial Significance (t-test):

- Student characteristics significantly affect study decisions t-value was 3.447 with (p = 0.001).
- Advanced study characteristics significantly affect study decisions t-value 16.253 with (p = 0.000).

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.092	.414		2.637	.010
	Karakteristik Siswa	.098	.029	.175	3.447	.001
	Karakteristik Studi Lanjut	.196	.012	.822	16.153	.000

Figure 9. Partial Significance Test Result

2. Simultaneous Significance (F-test):

- The calculated F-value was 150.719 with p = 0.000, suggesting that both independent variables jointly influence study decisions.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	101.496	2	50.748	150.719	.000 ^b
	Residual	32.661	97	.337		
	Total	134.157	99			

Figure 10. Simultaneous Significance Test Result

Thus, both H1 and H2 hypotheses are accepted, and H0 is rejected.

Discussion

The findings confirm that socio-demographic factors, particularly parental education and family income, strongly influence students' educational aspirations, supporting theories of educational attainment (Perna, 2006; Suryani, 2016).

Students whose parents had higher levels of education or better financial standing were more likely to value higher education and plan to continue their studies. These results align with studies by Wijaya (2018) and Moonti et al. (2022), which emphasized family background as a critical determinant of educational advancement. Furthermore, the characteristics of higher education as an innovation significantly affected students' decisions.

1. **Relative Advantage:** Students perceived university degrees as providing tangible economic and social benefits (Rogers, 2003).
2. **Compatibility:** Alignment between educational aspirations and family/social expectations enhanced students' willingness to pursue further studies.
3. **Complexity:** Although complexity was a barrier, it was mitigated by accessible information and support from schools.
4. **Trialability and Observability:** The visibility of successful alumni and opportunities for "trial experiences" (such as attending seminars or visiting campuses) reinforced positive perceptions.

This supports Rogers' (2003) proposition that innovations with high perceived relative advantage, low complexity, and high observability have higher adoption rates.

Strategic Implications

The study suggests that enhancing communication about the benefits of higher education, simplifying the admissions process, increasing trial opportunities (e.g., scholarships, internships, campus visits), and showcasing successful alumni can significantly boost higher education participation among vocational students.

By applying the Diffusion of Innovations framework to the context of educational advancement, this study contributes original insights into how strategic communication can address barriers to higher education in rural Indonesia.

Conclusion

This study explored the influence of student characteristics and higher education innovation attributes on students' decisions to pursue undergraduate studies at SMKN 1 Talangpadang. The research found that both internal factors (such as parental education, family income, and number of siblings) and external innovation attributes (relative advantage, compatibility, complexity, trialability, and observability) significantly impacted students' decisions.

Students from families with higher education backgrounds and better economic standing showed a greater tendency to continue their studies. Furthermore, the perception that higher education provides a substantial relative advantage, aligns with personal goals (compatibility), and is supported by observable success from role models significantly enhanced the intention to pursue higher education. However, perceived complexity and financial barriers remained major obstacles.

The application of Rogers' Diffusion of Innovations theory to the educational context proved highly relevant. Innovations perceived as offering a clear relative advantage, low complexity, high compatibility, opportunities for trialability, and strong observability are more likely to be adopted by students. Hence, strategic communication that addresses these factors can effectively increase

the Gross Enrollment Rate (GER) for higher education in rural areas like Tanggamus Regency.

Additionally, this study highlights the necessity for a holistic approach involving schools, policymakers, families, and communities to foster a culture that values higher education. Effective innovation communication strategies, such as direct exposure to successful alumni, simplification of university application processes, provision of financial assistance information, and encouragement of trial experiences like campus visits, are crucial.

Future research is encouraged to integrate qualitative methodologies to explore deeper motivational factors, and longitudinal studies should be conducted to assess the sustainability of interventions. By strengthening the ecosystem of support and addressing both socio-economic and perceptual barriers, efforts to enhance higher education participation can achieve more significant and enduring outcomes.

In conclusion, fostering higher education aspirations among vocational students requires an integrated effort of effective innovation communication, financial and social support systems, and active role modeling, ensuring that students are not only informed but also empowered to pursue higher education for a better future.

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