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An Analysis of Students' Decisions in Choosing a Study Program at the Politeknik Akamigas Palembang Using PLS-SEM

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ABSTRACT

Choosing a study program is an important decision for students that can be influenced by various factors. This study aims to analyze the factors that influence students' decisions when choosing a study program at the Politeknik Akamigas Palembang. The study employed a quantitative approach using the PLS-SEM method with SmartPLS 4 software. Data were collected via a questionnaire completed by 164 respondents who met the study's criteria. The research model consisted of eight exogenous constructs and one endogenous construct, with a total of 46 indicators. The test results showed that the constructs of interest and personal motivation had a positive and significant effect on students' decisions in choosing a study program ($\beta = 0.273$; $p = 0.008$). Career prospects and job opportunities also had a positive and significant effect ($\beta = 0.198$; $p = 0.028$). Meanwhile, the other six constructs did not show a statistically significant direct effect. The R^2 value of 0.677 indicates that the model explains 67.7% of the variation in students' decisions regarding their choice of study program. These findings suggest that personal interest, motivation, and considerations regarding career prospects should be prioritized when developing strategies for new student admissions at Politeknik Akamigas Palembang.

Keywords: Decision to choose a study program, interest and personal motivation, career prospects, PLS-SEM, SmartPLS 4

INTRODUCTION

Choosing a study program is an important decision because it relates to a student's field of study, the development of competencies, academic experiences, and career path. This decision is influenced by various personal and environmental factors; therefore, prospective students need to consider various aspects before deciding on a study program (Ermawati et al., 2015).

A number of studies indicate that the choice of a degree program is influenced by various internal and external factors, such as interests, talents, motivation, individual characteristics, support from family and peers, the social environment, the quality and reputation of the degree program, and access to information (Jauzi, 2022; Ramli & Jupri, 2025). In addition, career paths, job prospects, facilities, tuition costs, passion, skills, and the university's reputation are also factors considered when selecting a major (Kusmarwanto et al., 2023). Interests and word-of-mouth were also found to influence students' decisions in choosing a degree program (Yogaswara et al., 2023). These findings indicate that the selection of a degree program is a multidimensional process because it involves personal, social, academic, and institutional considerations.

Previous studies have used various approaches to identify these factors, including factor analysis, correspondence analysis, and multiple linear regression

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(Ermawati et al., 2015; Jauzi, 2022; Kusmarwanto et al., 2023; Yogaswara et al., 2023).

The need to understand the factors influencing the selection of a study Porgram is becoming increasingly important at vocational colleges, which have specific academic characteristics and a competency-based orientation. In the context of Politeknik Akamigas Palembang, students' decisions in choosing a field of study can be influenced by various factors, both internal and external. Based on theoretical and empirical studies, this research integrates eight constructs: personal interests and motivation; parents and family; career prospects and job opportunities; tuition costs; the institution's image and reputation; campus facilities and environment; promotion and information; and friends and social environment.

The relationships among these constructs were analyzed simultaneously using Partial Least Squares Structural Equation Modeling (PLS-SEM). This method allows for the testing of measurement models to assess the quality of constructs and indicators, as well as structural models to analyze relationships among latent constructs (Hair et al., 2022). PLS-SEM has also been used in research in Indonesia to analyze relationships among latent variables and test structural models (Fernanda et al., 2022). Thus, PLS-SEM is used as an analytical approach to test models developed based on theoretical and empirical studies.

This study aims to analyze the influence of personal interests and motivation, parents and family, career prospects and job opportunities, educational costs, the image and reputation of the institution, campus facilities and environment, promotional materials and information, as well as friends and the social environment on students' decisions when choosing a program of study at the Politeknik Akamigas Palembang. The results of this study are expected to provide an empirical overview of the factors influencing students' decision to choose a study program within the context of vocational higher education.

MATERIAL AND METHOD

This study employed a quantitative approach with an explanatory design at the Politeknik Akamigas Palembang during the 2025/2026 academic year. The study population consisted of 748 active students from all degree programs. The sample was selected using purposive sampling, with the criteria being active students in their 2nd, 4th, and 6th semesters. Questionnaires were distributed through the program secretaries and class presidents. A total of 164 questionnaires that met the criteria were used in the data analysis.

The research instrument consisted of 46 items that measure eight exogenous constructs and one endogenous construct. Each exogenous construct consists of five indicators, while the endogenous construct consists of six indicators. All indicators were measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

The exogenous constructs include personal interest and motivation (X_1), the influence of parents and family (X_2), career prospects and job opportunities (X_3), the cost of education (X_4), the image and reputation of the university (X_5), campus facilities and environment (X_6), promotion and information (X_7), and the influence of friends and the social environment (X_8). Meanwhile, the decision to choose a study program is defined as the endogenous construct (Y).

This study integrates eight constructs based on previous empirical evidence: (1) Personal interest and motivation (Jauzi, 2022; Yogaswara et

al., 2023; Ramli & Jupri, 2025); (2) the influence of parents and family (Jauzi, 2022; Ramli & Jupri, 2025); (3) Career prospects, (4) Tuition costs, (5) The image and reputation, (6) Campus facilities, and (7) Promotion and information (Ermawati et al., 2015; Kusmarwanto et al., 2023); and (8) The influence of friends and the social environment (Yogaswara et al., 2023; Ramli & Jupri, 2025).

Research Hypotheses

Based on a theoretical review and previous research, this study examines the influence of eight exogenous variables on the decision to choose a study program (Y). The research hypotheses are formulated as follows:

H_1: Personal Interest and Motivation (X_1) have a positive influence on the decision to choose a study program (Y).

H_2: The Influence of Parents and Family (X_2) has a positive effect on the Decision to Choose a study program (Y).

H_3: Career Prospects and Employment Opportunities (X_3) have a positive effect on the Decision to Choose a study program (Y).

H_4: Tuition Costs (X_4) have a positive effect on the decision to choose a study program (Y).

H_5: The Image and Reputation of the University (X_5) have a positive effect on the decision to choose a study program (Y).

H_6: Campus Facilities and Environment (X_6) have a positive effect on the decision to choose a study program (Y).

H_7: Promotion and Information (X_7) have a positive effect on the Decision to Choose a study program (Y).

H_8: The Influence of Friends and Social Environment (X_8) have a positive effect on the Decision to Choose a study program (Y).

Data Analysis Techniques

Data analysis was performed using the PLS-SEM method, conducted with SmartPLS 4 software. This method includes evaluation of the outer model, evaluation of the inner model, and hypothesis testing. The analysis steps followed the PLS-SEM guidelines (Hair et al., 2022; 2021).

1. Evaluation of the Outer Model
   An evaluation of the outer model was conducted to assess construct reliability and validity. The reliability of the indicators was assessed based on their outer loading values, with a value of $\geq$ 0.708 serving as a benchmark indicating that an indicator makes an adequate contribution to the construct. Indicators with values below this criterion were evaluated based on theoretical considerations and their impact on construct reliability and validity.
   Internal consistency reliability was assessed using Cronbach's alpha and composite reliability. Convergent validity was assessed based on the Average Variance Extracted (AVE) value, with a value of $\geq$ 0.50 indicating that convergent validity was met. Furthermore, discriminant validity was evaluated using the Heterotrait–Monotrait (HTMT) ratio.
2. Evaluation of the Inner Model
   Evaluation of the inner model is conducted after the outer model meets the criteria for reliability and validity. The evaluation begins with an examination of multicollinearity among predictor constructs using the Variance Inflation Factor (VIF). Next, the model's ability to explain the endogenous variable is assessed based on the coefficient of determination (R^2).
3. Hypothesis Testing
   Hypothesis testing was conducted on eight relationships among exogenous constructs, and the decision regarding

the choice of academic program was made using this method. This test employed bootstrapping with 10,000 subsamples at a 5% significance level. The path coefficient, t-statistic, p-value, and confidence interval are used to evaluate the significance of the relationship. If the p-value is less than 0.05, the relationship is considered significant.

RESULT AND DISCUSSION

Respondent Characteristics

This research questionnaire was distributed to current students at the Politeknik Akamigas Palembang for the 2025/2026 academic year. A total of 164 respondents provided answers that were used in this study. The characteristics of the respondents based on gender, age, program of study, and semester are presented in Table 1.

Table 1. Respondent Characteristics

Characteristics	Category	Frequency (respondents)	Percentage
Gender	Male	117	71.3%
	Female	47	28.7%
Age (years)	< 18	8	4.9%
	18-20	101	61.6%
	21-23	55	33.5%
Study Program	TLM	13	7.9%
	TPM	20	12.2%
	TEP	59	36.0%
	TPB	66	40.2%
	MKE	6	3.7%
Semester	2	69	42.1%
	4	47	28.7%
	6	48	29.3%
Total		164	100%

Based on Table 1, this study involved 164 respondents, the majority of whom were male (71.3%) and in the 18–20 age group (61.6%). The largest number of respondents came from the TPB (40.2%) and TEP (36.0%) programs, and the majority were second-semester students (42.1%). In general, these characteristics describe the profile of the respondents who made up the study sample.

These respondent characteristics provide an overview of the sample profile prior to conducting measurement model and structural model analyses using SEM-PLS.

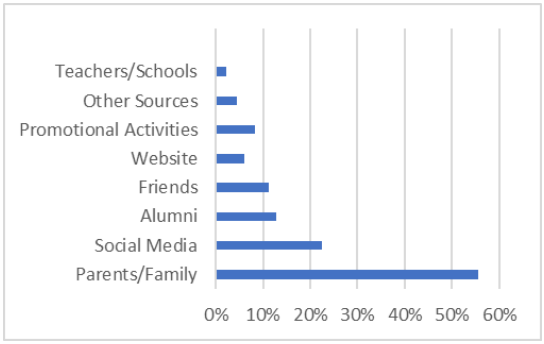


Figure 1. Respondents' Primary Sources of Information about Politeknik Akamigas Palembang

Figure 1 shows that the primary source of information about Politeknik Akamigas Palembang cited most frequently by respondents was parents/ family, at 55.6%. Next, respondents obtained information from social media (22.6%) and alumni (12.8%). These results indicate that parents/family were the most dominant initial source of information for the respondents.

However, the initial source of information does not directly indicate that this factor is the primary determinant of the decision to choose a study program. The influence of each factor was subsequently tested using the SEM-PLS structural model.

Evaluation of the Outer Model

An evaluation of the outer model was conducted to assess the construct and indicator validity and reliability in this study. The tests included outer loading, composite reliability (ρ_c), AVE, and HTMT. The outer model evaluation results are reported in Table 2.

Table 2. Evaluation of the Outer Model

Latent Variable	Indicators	Outer Loading	Cronbach's Alpha	Composite (rho-c)	AVE	HTMT
Personal Interests and Motivation (X_1)	X_{11}	0.937	0,940	0.955	0.809	-
	X_{12}	0.810				
	X_{13}	0.929				
	X_{14}	0.905				
	X_{15}	0.909				
The Influence of Parents and Family (X_2)	X_{21}	0.830	0,884	0.915	0.684	X_2 = 0.531
	X_{22}	0.872				
	X_{23}	0.743				
	X_{24}	0.831				
	X_{25}	0.851				
Career Prospects and Employment Opportunities (X_3)	X_{31}	0.924	0,961	0.969	0.864	X_1 = 0.663; X_2 = 0.559
	X_{32}	0.928				
	X_{33}	0.950				
	X_{34}	0.914				
	X_{35}	0.930				
Tuition Costs (X_4)	X_{41}	0.626	0,860	0.901	0.648	X_1=0.537; X_2=0.634; X_3=0.526
	X_{42}	0.788				
	X_{43}	0.891				
	X_{44}	0.810				
	X_{45}	0.880				
The Image and Reputation of The Institution (X_5)	X_{51}	0.927	0,972	0.978	0.899	X_1=0.691; X_2=0.705; X_3=0.704; X_4 = 0.730
	X_{52}	0.956				
	X_{53}	0.959				
	X_{54}	0.963				
	X_{55}	0.936				
Campus Facilities and Environment (X_6)	X_{61}	0.942	0,950	0.962	0.833	X_1=0.480; X_2=0.526; X_3=0.505; X_4 = 0.709; X_5 = 0.707
	X_{62}	0.950				
	X_{63}	0.873				
	X_{64}	0.908				
	X_{65}	0.889				
Promotion and Information (X_7)	X_{71}	0.952	0,968	0.975	0.887	X_1 = 0.586; X_2 = 0.605; X_3 = 0.665; X_4 = 0.735; X_5 = 0.789; X_6 = 0.728
	X_{72}	0.927				
	X_{73}	0.948				
	X_{74}	0.929				
	X_{75}	0.952				
The Influence of Friends and Social Environment (X_8)	X_{81}	0.942	0,956	0.966	0.849	X_1 = 0.301; X_2 = 0.560; X_3 = 0.311; X_4 = 0.668; X_5 = 0.522; X_6 = 0.588; X_7 = 0.594
	X_{82}	0.933				
	X_{83}	0.948				
	X_{84}	0.883				
	X_{85}	0.898				
The decision to choose a program of study (Y)	Y_1	0.965	0,980	0.984	0.912	X_1 = 0.718; X_2 = 0.591; X_3 = 0.705; X_4 = 0.665; X_5 = 0.750; X_6 = 0.602; X_7 = 0.710; X_8 = 0.414
	Y_2	0.970				
	Y_3	0.980				
	Y_4	0.971				
	Y_5	0.932				
	Y_6	0.909				

As shown in Table 2, the outer loading values for all indicators met the established evaluation criteria, with most indicators showing values that exceeded the recommended threshold of 0.708. There is one indicator in the Education Costs construct (X_{41}) with an outer loading of 0.626; however, this indicator was retained because its loading value remains above 0.40 and the overall reliability and validity of the construct met the criteria.

Furthermore, construct reliability was confirmed using Cronbach's Alpha and Composite Reliability (ρc). Both indicators exceeded the threshold of 0.70, with Cronbach's Alpha values ranging from 0,860 to 0,980 and ρc values ranging from 0.901 to 0.984. These constructs also met the criteria for convergent validity, with AVE values ranging from 0.648 to 0.912. Finally, discriminant validity was met, as all HTMT values (0.301–0.789) fell below the 0.90 threshold. Thus, the measurement model was deemed ready for an internal model evaluation.

Evaluation of the Inner Model

Once the evaluation of the outer model is complete, and it has been confirmed that the construct meets the criteria for validity and reliability, the next step is to evaluate the structural model, also known as the inner model. The evaluation included the internal VIF values to identify potential multicollinearity, the R^2 values to determine the ability of the exogenous constructs to explain the endogenous constructs, and the path coefficients to test the relationships among the constructs. The results of evaluation of the inner model evaluation and hypothesis testing are presented in Table 3.

Table 3. Evaluation of the Inner Model

Latent Variable	**Inner VIF**	**R^2**
Personal Interests and Motivation (X_1)	2.055	–
The Influence of Parents and Family (X_2)	1.995	–
Career Prospects and Employment Opportunities (X_3)	2.307	–
Tuition Costs (X_4)	2.448	–
Image and Reputation of The Institution (X_5)	3.977	–
Campus Facilities and Environment (X_6)	2.420	–
Promotion and Information (X_7)	3.347	–
The Influence of Friends and Social Environment (X_8)	1.943	–
The decision to choose a program of study (Y)	–	**0.677**

Based on the results of evaluation the inner model, the Inner VIF values for all predictor constructs ranged from 1.943 to 3.977, and all were below the 5.00 threshold. These results indicate that there are no multicollinearity issues that interfere with the relationships among constructs in the structural model.

The R^2 value for the "Decision to Choose a Study Program" construct (Y) is 0.677. This value indicates that the eight exogenous constructs in the model collectively explain 67.7% of the variation in the "Decision to Choose a Study Program," while the remaining 32.3% of the variation is explained by factors outside the research model.

Hypothesis Testing

Hypothesis testing was conducted to determine the direction and significance of the relationship between the exogenous constructs and the decision to choose a study program. The tests were based on the path coefficients (β), t-statistics, and p-values, with a significance level of 5%. The results of the tests examining the relationships between X_1 through X_8 and the decision to choose a study program (Y) are presented in Table 4.

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Table 4. Path Coefficients and Hypothesis Testing

Hypothesis	Path	Path Coefficient (β)	t-statistic	p-value	Decision
H_1	$X_1 \rightarrow Y$	**0.273**	**2.652**	**0.008**	Supported*
H_2	$X_2 \rightarrow Y$	0.049	0.645	0.519	Not Supported
H_3	$X_3 \rightarrow Y$	**0.198**	**2.198**	**0.028**	Supported*
H_4	$X_4 \rightarrow Y$	0.145	1.702	0.089	Not Supported
H_5	$X_5 \rightarrow Y$	0.151	1.393	0.164	Not Supported
H_6	$X_6 \rightarrow Y$	0.060	0.926	0.355	Not Supported
H_7	$X_7 \rightarrow Y$	0.152	1.596	0.111	Not Supported
H_8	$X_8 \rightarrow Y$	-0.041	0.478	0.633	Not Supported

Based on Table 4, of the eight hypotheses tested, only two showed a significant effect at the 5% level. The results of the test show that the constructs of personal interest and motivation (X_1) and career prospects and job opportunities (X_3) had a positive and significant effect on students' decisions in choosing a study program (Y). Personal interest and motivation (X_1) had a path coefficient of 0.273, a t-statistic of 2.652, and a p-value of 0.008. Career prospects and job opportunities (X_3) had a path coefficient of 0.198, a t-statistic of 2.198, and a p-value of 0.028.

Meanwhile, the constructs of parental and family influence (X_2), educational costs (X_4), the image and reputation of the institution (X_5), campus facilities and environment (X_6), promotion and information (X_7), and the influence of friends and the social environment (X_8) did not show a significant effect on students' decisions in choosing a study program. This is indicated by the p-values for each construct being greater than 0.05. The influence of friends and the social environment (X_8) had a negative path coefficient of −0.041, but this influence was also not statistically significant. These results indicate that, in the research model tested, only personal interest and motivation, as well as career prospects and job opportunities, were found to have a significant influence on students' decisions regarding their choice of study program.

Personal interest and motivation were the constructs with the highest path coefficient among the eight constructs tested. These results indicate that personal interest and motivation are among the key factors students consider when choosing a study program. These findings are conceptually consistent with the study by Kusmarwanto et al. (2023), which identified passion as one of the factors influencing the choice of a study program. These findings are also consistent with the study by Ramli and Jupri (2025), which identified personal motivation as one of the factors associated with students' interest in continuing their education. Jauzi (2022) also found a relationship between students' interests and talents and their choice of vocational program. These results reinforce the relevance of interest and motivation in choosing a study program.

Career prospects and job opportunities also have a positive and significant influence on students' decisions. These findings are consistent with those of Kusmarwanto et al. (2023), who identified career and job prospects as factors in the selection of a study program. These findings indicate that job opportunities after graduation are a consideration for students when choosing a study program.

Meanwhile, the non-significant results for the other six constructs differ in emphasis from the study by Ermawati et al. (2015), which identified facilities,

social environment, promotion, employment, and comfort as factors in the choice of the Mathematics major. Ramli and Jupri (2025) also identified family support, social environment, and program reputation in their study of interest in continuing education. These differences must be understood by taking into account differences in context, respondents, and analytical methods. Factors identified in previous studies may not necessarily indicate a significant direct effect in this study's model.

Substantially, the significance of personal interest and career prospects is linked to the specific characteristics of Politeknik Akamigas Palembang as a vocational institution focused on the oil, gas, and coal mining sectors. Entering this highly technical field requires strong personal motivation and a clear vision for one's future career. Therefore, personal interests and job availability naturally dominate students' decision-making processes.

In contrast, the other six constructs did not prove significant due to this highly specific career focus. Although parents are the primary source of information (55.6%), they serve only as facilitators, not as the final decision-makers. These choices are also highly individualistic, rendering the influence of peers irrelevant. In addition, the cost of education is viewed as a long-term investment in a promising industry, rather than as an obstacle. Finally, since students' primary goal is to secure employment in a specialized industry, general factors such as campus reputation, institutional image, and promotional efforts are only secondary considerations.

Overall, the results of this study indicate that personal interests and motivation, as well as career prospects and job opportunities, are two factors that have a positive and significant influence on students' decisions when choosing a program of study at the Politeknik Akamigas Palembang. These findings can serve as a basis for higher education institutions to strengthen the information they provide regarding the alignment of academic programs with students' interests and the career opportunities available to graduates. Other factors that are not statistically significant still warrant attention, even though their direct effects have not been statistically proven in this research model.

CONCLUSION

Based on the PLS-SEM analysis, this study indicates that, out of the eight factors examined, only personal interest and motivation, as well as career prospects and job opportunities, have a positive and significant influence on students' decisions when choosing a study program at Politeknik Akamigas Palembang. Personal interest and motivation have a path coefficient of 0.273, while career prospects and job opportunities have a coefficient of 0.198. These results suggest that both factors are relevant in explaining students' decisions regarding the selection of a study program.

An R^2 value of 0.677 indicates that the eight constructs in the model account for 67.7% of the variation in students' decisions regarding their choice of study program, while the remaining 32.3% is attributable to factors outside the model and variations not captured by it. Meanwhile, the influence of parents and family, educational costs, the image and reputation of the higher education institution, campus facilities and environment, promotion and information, as well as the influence of friends and the social environment, do not show a statistically significant direct effect.

Based on the research findings, the leadership of the Politeknik Akamigas Palembang can increase new student enrollment through several strategies.

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First, conducting outreach to schools to introduce sudy programs tailored to prospective students' interests. Second, providing clear information about graduate competencies and job opportunities after graduation. Third, involve alumni and industry professionals in promotional activities to provide insight into career prospects. Fourth, utilize social media to disseminate information about study programs and alumni experiences. These strategies are expected to attract prospective students and help them choose academic programs that align with their interests and career plans.

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