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Factors Influencing Students' Decisions in Choosing Elementary Education Study Programs in Indonesia

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Research Article

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Abstract

Background/purpose. This study aims to examine the validity and reliability of factors influencing students' decisions in selecting the elementary education study program and to identify the most dominant factor.

Materials/methods. This quantitative study employed a cross-sectional design involving 722 students from various universities across multiple Indonesian islands. Data were collected through questionnaires and analyzed using Confirmatory Factor Analysis (CFA).

Results. The findings indicated that students' decisions to enroll in the elementary education study program were influenced by five key factors, represented as latent variables with 20 valid indicator items. CFA confirmed the alignment between these indicators and their respective latent variables through multiple goodness-of-fit tests using both first-order and second-order models. The average variance extracted and heterotrait-monotrait ratio values confirmed the validity of all indicators, while the composite reliability values demonstrated high reliability across all variables. The most dominant indicators influencing the latent variables were the acquisition of information from the socialization of the elementary education study program conducted in schools; the spacious, comfortable, and clean lecture building of the elementary education study program; enjoyment in teaching children; the desire to graduate promptly for employment opportunities; and the goal of graduating quickly.

Conclusion. These findings provide valuable insights for universities offering elementary education programs, helping them attract prospective students by addressing the most influential factors.

1. Introduction

In Indonesia, the elementary education study program is one of the popular choices for students who are interested in becoming elementary school teachers. The choice of students in the Elementary education study program who are the prima donna certainly has certain reasons. The reasons for students choosing this study program are often influenced by factors such as intrinsic motivation to contribute to the formation of the character of the younger generation, career prospects as educators (Shah et al., 2013) as well as extinct motivations such as friend invitations and parental encouragement (Evangeline & Lukman, 2024). The reason why students choose a study program at the university certainly has an impact on the competencies they will have later.

Student success in school is greatly influenced by teachers' competence and motivation (Linsiyah et al., 2023; Maryani et al., 2021; Yang & Kaiser, 2022). But the fact is that in Indonesia, Indonesian students are underperforming their academic performance in world standards (PISA, 2016; Mullis et al., 2019). This certainly has a correlation with the competencies possessed by teachers in Indonesia. Based on world measurements such as UNESCO and the results of the national standard teacher competency test give an idea of how low the competence of teachers in Indonesia is. Based on education policies, both macro, meso and micro regarding teacher recruitment, prospective teachers must have an educator background, including prospective elementary school teachers (Aslan, 2022; Muazza et al., 2019). The educational background of prospective elementary school teachers is of course obtained from education while in college, namely the Elementary education study program for classroom teachers and other education study programs that are still relevant for teachers of subject matter in elementary schools. The Elementary education study program in higher education is an institution that produces prospective elementary school teachers in the spotlight when existing elementary school teachers have low competence. As an educational institution that aims to produce qualified teacher candidates, the elementary education study program needs to understand the factors that affect students' choice in this study program.

There have been many studies that discuss students' decisions in choosing a certain university or study program (Armando Gultom et al., 2023; Echchabi & Al-Hajri, 2018; Evangeline & Lukman, 2024; Hermawan & Suryadi, 2019; Nuseir & El Refae, 2022; Wardaya et al., 2021). Although previous research has existed, the focus of the research has not yet discussed the decision of students to choose an elementary education study program. For example, the research of Hermawan and Suryadi (2019) focuses on personal factors such as economic situation, lifestyle, life cycle stage, and personality and tries to understand the relationship and influence of these five variables on the consumer behavior of Malaysian students, while in this study it uses different indicators and research subjects. Evangeline and Lukman's (2024) research focuses on factors that influence students to choose vocational schools in Pekan Baru province, while this research focuses on undergraduate students of elementary education in Indonesia in choosing an elementary education study program. The existing literature suggests that comparative research is needed to test whether the generally accepted instrument for measuring students' decision to choose a university course is truly universal. Empirical studies also indicate that the reliability of students' decision instruments for choosing a study program can vary in various places.

In this study, the factors that affect the choice of students will be identified. In addition, this study will also examine the extent to which these factors contribute to students' choice in choosing an elementary education study program. With the results of this factor confirmation analysis, it is hoped that the elementary education study program can gain a better understanding of student preferences and identify areas that need to be improved to increase the attractiveness of this study program. To be more specific, this study seeks to determine the factors that affect students' decisions in Indonesia in choosing an elementary education study program that can be written in the following research questions.

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1. Does the five-factor correlated structure of the student decision to choose the Elementary Education Study Program instrument optimally fit data in the Indonesian context?

2. Is the student decision to choose the Elementary Education Study Program instrument reliable and valid for measuring keputusan mahasiswa orientation in the Indonesian context?

3. What factors are the most dominant in determining students' decision to choose an elementary education study program?

2. Methodology

Students' decisions in choosing Study Programs are important in the world of higher education. An in-depth understanding of the factors that influence students' choices can help educational institutions to increase the attractiveness and relevance of the courses offered. In the context of this article, several factors that generally affect students' decision to choose a study program at the university will be discussed. These factors include the influence of promotion and socialization, facilities, decisions, job prospects and socio-economics (Farnese et al., 2022; Ibrahim & Hamidah, 2017).

The promotion and socialization factor is related to the way study programs or universities promote and market their programs to prospective students (Farnese et al., 2022). Effective promotional efforts can improve students' decisions and knowledge about a particular course of study, thus influencing their choice. Some of the promotional factors that can influence the choice of student decisions include information, activities, and the reputation of the study program (Ibrahim & Hamidah, 2017).

Facility factors can also affect the decision of students in choosing a study program. Good facilities can have a positive impact on the perception and preferences of students towards a study program (Sosibo, 2019) Facilities can be in the form of the environment, information technology, educators and education personnel, as well as security or comfort (Malau et al., 2022).

The factors that influence the student's personal decision to choose a study program greatly affect the expected targets or achievements. Internal decisions are stronger than external factors (Harackiewicz et al., 2008; Neubauer et al., 2022). Students' decisions in choosing a study program, especially the elementary education study program, can be influenced by several factors, including decisions in children's education, decisions in education and learning values, love of working with children, talent in communication and social skills, and a desire to contribute to elementary education (Barrable et al., 2022; Wintner, 2023).

The factor of job prospects in choosing a study program is also a consideration for female students (Lent et al., 1994). Study programs that have bright future prospects are usually preferred over those that have few job opportunities. Some of the job prospects for graduates of the elementary education study program include teachers, educational consultants, elementary education curriculum designers, book writers, and education coaches (Baluyos et al., 2019; Wolomasi et al., 2019).

Some people consider social and economic factors when choosing a study program (Crosnoe & Muller, 2014). The influence of family, friends, and closest people can cause a fall in the choice of study program (Buhl et al., 2018). Expensive tuition fees with sufficient economic ability will certainly reduce the decision of students in choosing a study program

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3. Findings

3.1. Desain research

This study is a quantitative design with a cross-sectional approach. The researchers used a cross-sectional survey to assess the validity and reliability of factors influencing students' decision to choose an Elementary education study program. A cross-sectional study looks at a specific group at a single point in time (Campbell et al., 2007) to capture the attitudes, perspectives, behaviors, or characteristics of a population (Creswell, 2014). Data is collected at one specific point in time from a group of people or objects that share the same characteristics or variables. The main purpose of the cross-sectional study is to describe the relationship between the variables observed in the studied population (Setia, 2016). The data needed is the main source of data regarding the respondents' assessment of the research variables.

3.2. Sample research

The current research population is undergraduate students in the elementary education study program in Indonesia. Sampling uses conventional sampling techniques. The practical sampling approach is used because of the proximity and accessibility of the researcher to the place where the participants are given the online survey (Hidayat et al., 2021). The number of questionnaire samples is 5 to 10 times the number of questionnaires, so at least a sample of 150 students is needed (Bentler & Chou, 1987; Jackson, 2009). Before filling out the online questionnaire, the purpose of the study was revealed, and each agreed to fill out the questionnaire. The questionnaire was distributed to students through a Google form, asking for the help of lecturers in the elementary education study program at several universities in Indonesia. Students are asked to fill out an anonymous survey that seeks demographic information as well as their opinions on the decision to choose the Elementary education study program. The researcher collected biographical responses from participants in the first part, namely the gender and location of the students. In the second part, the researcher examines the variables that are relevant to the research question. Finally, this study involved the participation of 722 students. The sample in this study is 722 students of the elementary education study program in Indonesia represented from the islands of Java, Sumatra, Sulawesi, Sumbawa, and Flores. The demographics of the respondents can be seen in the following Table 1.

Table 1. Demographics of respondents

Respondents	Frequency	Percentage (%)
Male	116	16,07
Female	606	83,93
Total	**722**	
Location of respondents		
Jawa	125	17,31
Sumatera	105	14,54
Kalimantan	128	17,73
Sulawesi	250	34,63
Sumbawa	103	14,27
Flores	11	1,52

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3.3. Measurement

This study uses a questionnaire that aims to find out the student factors in choosing elementary education in high school. The development of the questionnaire instrument uses indicators that refer to the indicators used by Elfira (2014). The indicator consisting of 5 indicators was then developed into 30 statements in the questionnaire using the Likert scale. Indicators related to factors that affect students to choose the students are shown in Table 2, and to further know the relationship between the latent variable and the indicator variable will be shown in Figure 1.

Table 2. Questionnaire indicator

Indicator	Item of the statement	Sample statement
Promotion and socialization	P1-P5	Socialization of programs carried out in schools.
Facilities	F1-F9	Strategic and easy-to-reach program lecture location.
Interest	I1-I4	enjoy teaching children
Career prospects	C1-C4	Graduating from the program can quickly get a job
Social and economic	S1-S8	The tuition fee in the program is cheap.

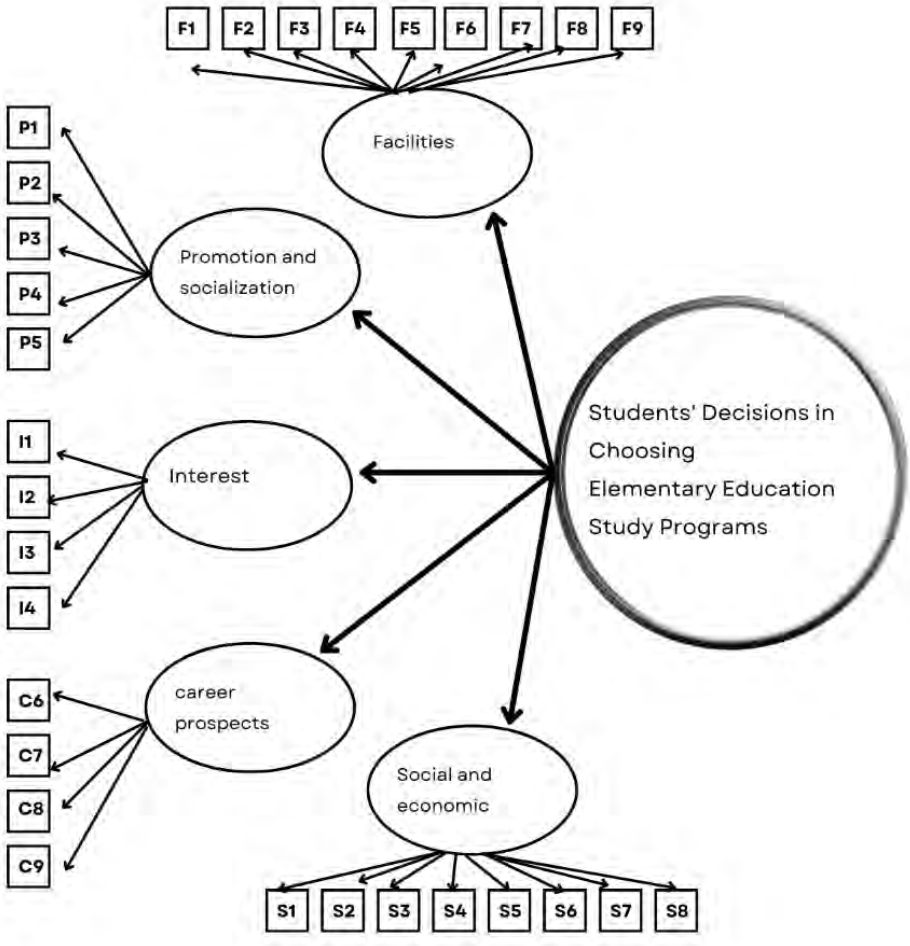

Figure 1. CFA second-order model student decision to choose a study program

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3.4. Data Analysis

The data collection technique uses a questionnaire that is shared online using google forms. Before the questionnaire is used for research, an expert assessment is first carried out to get a good questionnaire instrument. The questionnaire consists of 5 indicators referred to as latent variables. Fill out an online questionnaire by choosing a score between 1-4 using the Likert scale. Data analysis uses JASP 0.19.10 software to find the appropriate factors for the instrument. The student's decision to choose the elementary education study program uses Confirmatory Factor Analysis to find the fit, validity, and reliability model of the factors that affect the student's decision to choose the elementary education study program and also descriptive analysis to find the most dominant factor for the student's decision to choose the elementary education study program.

JASP stands for Jeffreys's Amazing Statistics Program which honors Sir Harold Jeffreys' great contribution to the development of Bayesian statistical analysis (Goss-Sampson, 2018). JASP is a statistical software that can be used to analyze data for free and can be accessed by anyone. The development and renewal of JASP continue to be carried out by a group of researchers at the University of Amsterdam. The app can be downloaded for free through its official website at https://jasp-stats.org/ and can be used on Windows, Mac OS X, and Linux operating systems. In addition, there is also a pre-installed version of JASP for Windows, which allows users to run it directly from a USB or external hard drive without the need to install it on a PC or laptop. Unlike most other statistics programs, JASP has a simple interface and an easy-to-access menu. When the user selects a specific menu and data, the data analysis is carried out in real time, and the results are immediately displayed on the screen. All tables and graphs generated by JASP are presented in APA format and can be easily copied or saved separately. In addition, tables can also be exported from JASP in LaTeX format.

This study uses confirmatory factor analysis (CFA). The Kaiser-Meyer-Olkin Measure (KMO) of Sampling Adequacy and Bartlett's Test of Sphericity were used to assess the suitability of the data to the factor analysis. The p-value on the Bartlett test, which is less than 0.05, indicates that the data is not in the form of an identity matrix, while the KMO value greater than 0.6 meets the criteria of acceptability of sampling. The value of the loading factor on each item can determine significantly in validating the validity of the questionnaire. The large number of samples also affects the determination of significant loading factors (Hair J et al., 2014, p. 112). In this study, the loading factor value above 0.50 for each item was considered significant because of the Large sample quantity. According to Hair (2014), guidelines for identifying the significance of loading factors based on sample size are shown in the following Table 3.

Table 3. Guidelines for determining loading factor significance based on sample size

Loading factor	Sample Size Required for Significance
0.30	350
0.35	250
0.40	200
0.45	150
0.50	120
0.55	100
0.60	85
0.65	70
0.70	60
0.75	50

CFA is used to test the extent to which the measured variable can describe a pre-formed construction or factor (Brown, 2007; Hoyle, 2000). In the analysis of confirmation factors, there are latent variables and indicator variables. Latent variables are variables that cannot be measured directly and are constructed by combining multiple indicator variables. Meanwhile, indicator variables are variables that can be observed and measured directly. Factor confirmation analysis is one of the methods that can be used to confirm the factors that affect the right choice of students' Elementary education Study Programs (Singh, 2020). This method allows researchers to test the reliability and validity of student decision instruments. The reliability test includes the discussion of Composite / Construct Reliability (CR). A good CR is greater than 0.5. To assess the validity of the construction of the measurement instrument, the researcher refers to two aspects, namely, the validity of convergence and the validity of discrimination (Hair J et al., 2014). Convergent validity is assessed based on the extracted mean-variance value (AVE) with a minimum threshold of $\alpha \geq 0.50$. Meanwhile, for the validity of discrimination, the researcher examined the Heterotrait-Monotrait Ratio (HTMT) with a minimum threshold of $\alpha \leq 0.85$. Before conducting reliability and validity tests, it is first sought whether the indicators on the questionnaire items fit the factors formed by comparing the following model goodness criteria (Hidayat et al., 2024; Hooper et al., 2008; Wang & Wang, 2019).

Table 4. Criteria of goodness model

Goodness of fit index	Cut off value
Chi-square	Small (p value ≥ 0.05)
Root Mean Square Error of Approximation (RMSEA)	<0.06 good fit
	0.6≤ RMSEA≤0.8 marginal fit
Standardized Root Mean Square Residual (SRMR)	≤ 0.05
Goodness of fit index (GFI)	GFI ≥ 0.9 good fit
	0.80 ≤ GFI≤ 0.90 marginal fit
Bentler-Bonett Normed Fit Index (NFI)	NFI ≥ 0.9 good fit
	0.80 ≤ NFI≤ 0.90 marginal fit
Bentler-Bonett Non-normed Fit Index (NNFI)	
Comparative Fit Index (CFI)	CFI ≥ 0.9 good fit
	0.80 ≤ CFI≤ 0.90 marginal fit
Bollen's Incremental Fit Index (IFI)	CFI ≥ 0.9 good fit
	0.80 ≤ CFI≤ 0.90 marginal fit
Tucker-Lewis Index (TLI)	TLI ≥ 0.9 good fit
	0.80 ≤ TLI≤ 0.90 marginal fit
Parsimony Normed Fit Index (PNFI)	PNFI ≥ 0.5 good fit
	0.0 ≤ PNFI≤ 0.5 marginal fit
Relative Non centrality Index (RNI)	RNI ≥ 0.9 good fit
	0.80 ≤ RNI≤ 0.90 marginal fit

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4. Results

4.1. Preliminary Analysis

Before the data is analyzed to answer the research question, it is necessary to check the fulfillment of the number of samples and the data is normally distributed or not as a feasibility of the data to be able to conduct factor analysis. For this reason, a descriptive analysis of the collected data was carried out. Table 5 shows the results of the descriptive analysis of the collected data.

Table 5. Descriptive statistics of data

	Promotion and socialization	facilities	Interest	Career project	Social and economic
Mean	3.169	3.008	3.325	2.900	2.397
Std. Deviation	0.182	0.325	0.126	0.415	0.496
Skewness	0.731	-0.038	-0.121	-1.050	0.567
Std. Error of Skewness	0.913	0.717	1.014	1.014	0.752
Kurtosis	1.183	-1.523	-2.931	1.300	-0.500
Std. Error of Kurtosis	2.000	1.400	2.619	2.619	1.481
Shapiro-Wilk	0.949	0.913	0.958	0.945	0.920
P-value of Shapiro-Wilk	0.731	0.335	0.767	0.686	0.431

Source: result of JASP

The P-value of Shapiro Wilk on all factors shows a > of 0.05, which means that the data is normally distributed. The KMO value was 0.920> 0.6, so it met the criteria for acceptability of sampling. The p-value on the Bartlett test [$\chi 2 = 10627.123$; $p < 0.001$] indicates that the data is not in the form of an identity matrix.

4.2. Model of Goodness of Student Decision

Before testing the model fit, the initial step needs to analyze the validity of each item. The validity of each statement item is done by looking for the value of the loading factor on each item. The value of the loading factor declared valid if > 0.5. Based on the results of the loading factor analysis, the CFA results were obtained that P1, P5, F3, F7, F8, F9, S1, S2, S3, and S8 had a loading factor < 0.5, so the item was invalid, and had to be issued. Invalid item items, if removed, do not cause the loss of important aspects of this construct. The overall loading factor value can be seen in Table 6.

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Table 6. Factor loading of indicators

Factor	Indicator	Estimate	Std. Error	Desc.
Promotion and socialization	P1	0.479	0.031	Not valid
	P2	0.540	0.027	valid
	P3	0.669	0.032	valid
	P4	0.589	0.031	valid
	P5	0.357	0.024	Not valid
Facilities	F1	0.635	0.028	valid
	F2	0.730	0.028	valid
	F3	0.330	0.024	Not valid
	F4	0.632	0.029	valid
	F5	0.645	0.026	valid
	F6	0.601	0.028	valid
	F7	0.349	0.023	Not valid
	F8	0.365	0.023	Not valid
	F9	0.420	0.023	Not valid
Interest	I1	0.639	0.023	valid
	I2	0.510	0.022	valid
	I3	0.688	0.028	valid
	I4	0.503	0.023	valid
Career prospects	C1	0.530	0.025	valid
	C2	0.663	0.027	valid
	C3	0.548	0.036	valid
	C4	0.542	0.029	valid
Social and economic	S1	0.478	0.041	Not valid
	S2	0.288	0.040	Not valid
	S3	0.441	0.044	Not valid
	S4	0.547	0.037	valid
	S5	0.674	0.031	valid
	S6	0.752	0.030	valid
	S7	0.669	0.031	valid
	S8	0.245	0.031	Not valid

Source: JASP Output

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The indicators in the questionnaire items were analyzed to fit the factors formed by comparing them with the goodness model criteria. The results of the goodness model on the latent first-order variable from Promotion and Socialization show that the good fit model on the goodness index of chi-square (0.000<0.005), RMSEA (0.000<0.6), GFI (1.000≥0.9), CFI (1.000≥0.9), NFI (1.000≥0.9) and TLI (1.000≥0.9). This means that the factors produced, namely P2, P3, and P4 are able to explain the relationship between variables quite accurately so that they are suitable for describing the promotion and socialization indicator.

The results of the Goodness model on the latent variable first order of facilities also showed a good fit in the goodness index of RMSEA (0.141<0.6), GFI (0.994≥0.9), CFI (0.962≥0.9), NFI (0.950≥0.9) and RNI (0.924 ≥ 0.9). This means that the factors produced, namely F1, F2, F4, F5, and F6 are able to explain the relationship between variables quite accurately so that they are suitable for describing indicator facilities.

The results of the goodness model on the latent variable first order of interest show the good fit model on the goodness index of RMSEA (0.225<0.6), GFI (0.997≥0.9), CFI (0.951≥ 0.9), NFI (0.959≥0.9) and TLI (0.951 ≥ 0.9). This means that the resulting factors, namely I1, I2, I3, and I4, are able to explain the relationship between variables quite accurately so that they are suitable for describing the indicator of interest.

The results of the goodness model on the latent first-order variable of the career prospect show that the good fit model on the goodness index of RMSEA (0.170<0.6), SRMR (0.037≤ 0.05), GFI (0.998 ≥ 0.9), NFI (0.954≥0.9), CFI (0.956≥0.9), IFI (0.956≥0.9), and RNI (0.956≥0.9). This means that the resulting factors, namely C1, C2, C3, and C4, are able to explain the relationship between variables accurately enough to describe the career prospect indicator.

The results of the goodness model on the latent first-order variable from social and economic showed a good fit in the goodness index of RMSEA (0.204<0.6), SRMR (0.041≤ 0.05), GFI (0.991≥ 0.9), NFI (0.941 ≥ 0.9), CFI (0.942 ≥ 0.9), IFI (0.942 ≥ 0.9), and RNI (0.942≥ 0.9). This means that the factors produced, namely S4, S5, S6, and S7, are able to explain the relationship between variables accurately enough so that they are suitable for describing social and economic indicators.

The indicators in the questionnaire items were analyzed for fit to the factors formed by comparing them with the goodness model criteria. The results of the Goodness model in the second order model show good fit in the goodness index of GFI, CFI and PNFI show a good fit model. The RSMEA Index also shows that the model is accepted. The output of each goodness index in the second order model can be seen in the following Table 7.

Table 7. The latent variable goodness model of second order model

Goodness of fit index	Output	Desc.
Chi-square	616.277	Not fit
RMSEA	0,074	fit
GFI	0.982	Good fit
CFI	0.921	Good fit
PNFI	0.738	Good fit

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In Table 6, it can be seen that the chi square value shows that the model does not fit. The large chi-square value is not surprising, especially if the sample used is quite large. This is because chi-squares are very sensitive to sample size and model complexity, so they often produce high values even though the actual model has a fairly good fit. To overcome the impact of a large sample, a relative chi-square value (χ^2/df) can be used, where for a value of ≤ 3, the model is very fit or a value of ≤ 5 model is acceptable. In the JASP output results, the chi-square value (χ^2=616.277) with the degree of freedom (df=125) is displayed so that the relative chi-square value (χ^2/df=4.93) is obtained. Since the relative chi-square value ≤ 5, the model is acceptable.

To assess the construct validity of the measurement instrument, the researcher refers to two aspects, namely convergent validity and discriminant validity (Hair et al., 2019). Convergent validity is assessed based on the value of average variance extracted (AVE) with a minimum threshold of $\alpha \geq .50$. Meanwhile, for discriminant validity, the researcher examines the Heterotrait-Monotrait Ratio (HTMT) with a minimum threshold of $\alpha \leq .85$. For instrument reliability, the reference used is Composite Reliability (CR), with a minimum acceptable value of $\alpha \geq .70$. AVE, HTMT and CR were counted before any items were removed and recounted after some invalid items were removed without making word corrections and no more questionnaires were distributed to respondents. The CFA test results for AVE is shown in Table 8 below.

Table 8. AVE of CFA result

No	Factor	AVE	
		Before*	After**
1	Promotion and socialization	0.457	0.529
2	Facilities	0.497	0.603
3	Interest	0.641	0.642
4	Career prospect	0.500	0.500
5	Social and economic	0.376	0.520

* process the initial data before items are removed
**process data after invalid items are removed

The results of the CFA analysis in Table 8 indicate that the AVE value before any item removed indicates that variable promotion and socialization; facilities; and social and prospect have an AVE value ≤0.5, but after the invalid item item is removed, all latent variables have an AVE value ≥0.50. All factors have AVE values ≥0.50, indicating that more than 50% of the indicators can be explained by their latent constructs. As for the HTMT value before any invalid items are removed, there is a variable Promotion and Socialization – Facilities has a HTMT value = 0.854, which almost reaches the threshold of 0.85 (see Table 9). This indicates the potential validity of discrimination issues as the two constructs may not differ sufficiently from each other. However, after invalid items are removed, the HTMT for all construct pairs is now below 0.85, which means that the validity of discrimination is better than before (see Table 10). The HTMT value after the invalid item items is removed shows that the indicator that measures one construct does not have a high correlation with other constructs so each construct is truly unique.

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Table 9. HTMT before any items are removed

	Promotion and socialization	Facilities	Interest	Career prospect	Social and economic
Promotion and socialization					
Facilities	0.854				
Interest	0.659	0.647			
Career prospect	0.640	0.670	0.660		
Social and economic	0.237	0.334	0.163	0.453	

Table 10. HTMT after invalid items are removed

	Promotion and socialization	Facilities	Interest	Career prospect	Social and economic
Promotion and socialization					
Facilities	0.732				
Interest	0.604	0.529			
Career prospect	0.604	0.591	0.660		
Social and economic	0.168	0.288	0.131	0.308	

Composite Reliability (CR) is a measure used to measure the internal consistency or reliability of a construct in a CFA measurement model. CR calculates the extent to which indicators in a construct measure the same concept consistently. CR is often used as an alternative to Cronbach's Alpha, which is more common because CR is more accurate in the context of CFA by taking into account the difference in loading factor between indicators. The CR data before the invalid items were removed was good, but after the improvements, the reliability of the model became better, and there were no constructs below 0.70, as in Table 11.

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Table 11. CR of CFA result

No	Factor	CR	
		Before*	After**
1	Promotion and socialization	0.956	0.815
2	Facilities	0.860	0.944
3	Interest	0.761	0.902
4	Career prospect	0.741	0.880
5	Social and economic	0.813	0.906

* process the initial data before items are removed
**process data after invalid items are removed

The results of factor covariance represent the relationship between latent factors in the model. The covariance of factors indicates the extent to which two factors share variability or how closely these two factors are related in the context of the data being analyzed. The most dominant construct that influences other constructs is promotion and socialization, with a strong relationship to facilities, interests, and career prospects. Social and Economic have a weaker relationship with other constructs, especially Promotion and Socialization. Overall, these results suggest that the relationships between constructs are quite strong and significant, with some of the weaker relationships, such as those between Interest and Social and Economic. The relationship between variables in detail can be seen in the following covariant factor Table 12.

Table 12. Factor covariance

			Estimate	Std. Error	z-value	p
Promotion and socialization	↔	Facilities	0.718	0.027	26.574	< .001
Promotion and socialization	↔	Interest	0.590	0.034	17.624	< .001
Promotion and socialization	↔	Career prospect	0.572	0.036	15.793	< .001
Promotion and socialization	↔	Social and economic	0.240	0.044	5.419	< .001
Facilities	↔	Interest	0.520	0.032	16.182	< .001
Facilities	↔	Career prospect	0.550	0.033	16.521	< .001
Facilities	↔	Social and economic	0.313	0.039	7.920	< .001
Interest	↔	Career prospect	0.664	0.028	23.556	< .001
Interest	↔	Social and economic	0.118	0.043	2.740	0.006
Career prospect	↔	Social and economic	0.362	0.042	8.720	< .001

Source: JASP Output

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The results of the significance of the item items and also the relationship between variables in accordance with the model decision of students to choose an elementary education study program in Indonesia can be seen in the Figure 2.

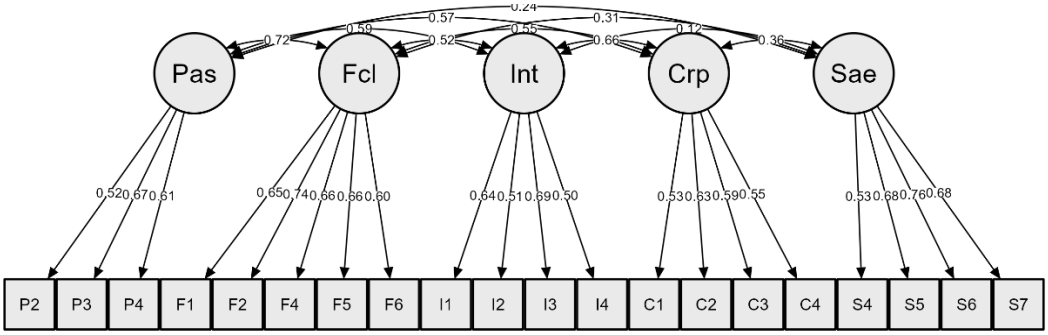

Figure 2. The final model of student choice in Indonesia's elementary education program

After the model is said to be valid and reliable, the dominant factors influencing students to choose the Elementary education study program in each of the late variables will be analyzed. The R^2 (coefficient of determination) measures how well the indicator (item) can explain the variance in the latent construct it represents. The higher the R^2, the greater the proportion of variance of the indicator that can be explained by the latent construct, which means that the item is more dominant in describing the latent construct. while the Z-value measures the statistical significance of the relationship between the indicator and the latent construct. A higher Z-value indicates that the relationship is more statistically significant but does not necessarily reflect how much the indicator contributes to the overall latent construct. Table 13 illustrates in detail the R2 and z-score values on each indicator.

Table 13. R2 and z-score of Indicators

Factor	Indicator	R2	z-value
Promotion and socialization	P2	0.489	19,369
	P3	**0.573**	21,325
	P4	0.511	19,971
Facilities	F1	0.585	23,321
	F2	**0.704**	26,763
	F4	0.555	22,502
	F5	0.672	25,856
	F6	0.501	21,030
Interest	I1	**0.737**	27,494
	I2	0.587	23,156
	I3	0.652	25,083
	I4	0.560	22,414
Career prospect	C1	0.556	21,542
	C2	**0.634**	23,583
	C3	0.381	16,686
	C4	0.490	19,889
Social and economic	S4	0.295	14,232
	S5	0.555	21,196
	S6	**0.711**	25,169
	S7	0.559	21,757

Source: JASP Output

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Based on the table, it can be analyzed that the most dominant indicator that influences the latent variable of Promotion and socialization is P3, get information from socialization elementary education study program that is carried out in schools. In the latent variable of facilities, the most dominant indicator is F2, namely the lecture building of the elementary education study program that is spacious, comfortable, and clean. In the latent interest variable, the most dominant indicator is I1, which is happy to teach children. In the latent career prospects variable, the most dominant indicator is C2, which is graduating from the elementary education study program quickly to get a job. In the latent social and economic variables, the most dominant indicator plays a role in S6, which is fast graduation.

5. Conclusion

The student decision model in choosing an elementary education study program has five factors with 20 valid and reliable statement items and 10 invalid items. These results certainly have similarities with previous studies. In the research, Nuseir & El Refae (2022) has similarities in the latent variables of promotion, facilities, and academic reputation as students' choice for choosing a study program, although other variables are not researched in this study such as funding and grants. The influence between latent variables in this study shows that interest with low socio-economic while interest with career prospects shows a high correlation, this is different from the research by Evangeline & Lukman (2024) which shows that career has no effect on student interest. The similarity with the research (Armando Gultom et al., 2023) is that the five latent variables analyzed in this study both have an influence on students' decisions to choose study programs in higher education. Another similarity of this study with Elfira (2014) the loss of indicators that link the influence of parents in students' decisions to choose study programs on social and economic variables.

Factor covariances shows the relationship between latent factors in CFA. The covariant value shows that the closest relationship between the promotion and socialization variables and facilities while the weakest relationship between variables is between interest and social and economic. The weak relationship between interest and socioeconomic factors in a student's decision to choose a course at a university is complex, with internal psychological factors and external socioeconomic influences at play. Socioeconomic indicators affect enrollment in higher education institutions, but they do not necessarily determine the specific program that students choose (Batool & Liu, 2021). Although socioeconomic conditions can affect access to education and create certain pressures, they do not inherently form the interests that guide students' choices. In contrast, personal motivation, emotional intelligence, and external social factors play a crucial role in determining a student's educational path. Understanding these complex interactions is critical to developing educational policies and interventions that support students in aligning their interests with their academic and career aspirations.

The identifier with the greatest influence on this latent variable promotion and socialization is P3, get information from socialization elementary education study program that is carried out in schools. Promotion plays an important role in students' decision to choose a particular study program or university (Isyanto et al., 2020). Students tend to trust information obtained directly from credible sources, such as college representatives coming to school because these interactions provide opportunities for personalized communication and clarification of doubts (Rosinger, 2017). Direct promotion of study programs to schools can effectively assist students in choosing programs that suit their interests and talents. Engaging students through seminars, workshops, and consultation sessions allows for a more interactive and informative experience. This approach improves students' understanding of different courses and helps them make informed decisions regarding their educational path. The promotion of study programs to schools is also generally carried out by alumni in their home schools because it is more effective in building trust and increasing student interest. Alumni who maintain strong relationships with their institutions tend to feel a sense of pride and

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loyalty, which can be manifested in students' desire to engage with prospective students (Sium et al., 2023).

F2 is the most influential indicator on the latent variable of facilities, namely spacious, comfortable, and clean lecture buildings for the Elementary education program. The design and arrangement of buildings and their facilities are important factors for academic success, influencing students' decisions to enroll in a program (Price et al., 2003). Research by McDonald's (2019) supports these findings, showing that comfortable facilities create a pleasant learning environment comparable to the atmosphere of home. The physical characteristics of a classroom, such as size and comfort, play a crucial role in shaping student perceptions and experiences. The completeness of classroom facilities, including spaciousness and comfort, is very important to create a conducive learning environment, which in turn affects learning outcomes and student satisfaction (Widiastuti et al., 2020). The physical condition of the classroom, including its size and arrangement, is an important factor in students' decisions regarding class selection, as students expect a comfortable environment for effective learning (Othman et al., 2019). This suggests that when students feel that a program is in a well-maintained and spacious environment, they may be more likely to choose the program. Thermal comfort and indoor environmental quality are important components of classroom design that directly affect student performance and well-being, so maintaining proper thermal comfort conditions in educational buildings is essential to increase student productivity during the teaching and learning process (Yao et al., 2023). This is echoed by Moktan, who asserts that the thermal environment significantly affects students' mood, concentration, and overall learning efficiency (Liu et al., 2021; Moktan & Uprety, 2023) When students feel comfortable in their learning environment, they tend to engage more positively with their studies, which can influence their choice of course.

In the latent interest variable, the most dominant indicator is I1, which is happy to teach children. The passion for teaching children is a key factor in individuals who choose to become teachers, including those at the elementary level (Fitria, 2023). Supporting studies also highlight that a love of working with children is a key motivation for individuals to pursue a teaching career (Balyer & Özcan, 2014). Various studies consistently highlight intrinsic motivations, such as enjoyment and passion for teaching, as important in influencing students' decisions to pursue careers in Education (Elkhaira et al., 2020; Mihelič et al., 2022). The enjoyment of teaching and the desire to make a positive impact on children's lives, are fundamental reasons for students to choose teaching as a career (Alvariñas-Villaverde et al., 2022; Pandey, 2021; Skatova & Ferguson, 2014). This model highlights that students who enter teacher education programs often do so because they find joy in the act of teaching and nurturing young minds, which is an important aspect of their professional identity.

In the latent career prospects variable, the most dominant indicator is C2, which is graduating from the elementary education study program quickly to get a job. An important factor driving this trend is the urgent need for college students to get a job quickly after graduation (Moody, 2020). Research shows that college students often prioritize programs that show a clear relationship with job opportunities and employability skills, reflecting broader societal concerns regarding graduate unemployment and underemployment (Jote, 2017; Sedahmed & Noureldien, 2019). Students are more likely to enroll in programs that offer practical work experience, such as internships or placements, that are considered to enhance their employability (Castro-Lopez et al., 2022; Kamaliah et al., 2018). Institutions that are known to have high employment rates among their graduates tend to attract more applicants (Paterson, 2017). This phenomenon is particularly evident in competitive job markets, where the prestige associated with a particular university can influence a student's decision to enroll in a particular program (Espinoza et al., 2019). In summary, the desire to get a quick job significantly influences students' choice of study programs in higher education.

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In the latent social and economic variables, the most dominant indicator plays a role is S6, which is fast graduation. If students stay on campus for too long, it will bore them and require additional costs outside of planning (Glocker, 2011; Hidajat et al., 2020). Courses that are considered to facilitate quick graduation have a significant appeal, as early entry into the workforce allows students to start developing their careers right away. Students often prioritize programs that allow for faster completion, as this can lead to an earlier entry of students into the workforce and a reduction in the cost of education (Reid et al., 2021). A student's identity and future perspective are shaped by their educational choices, including the duration and perceived value of the program they are considering (Holmegaard et al., 2014).

6. Conclusion

Students' decisions in choosing an elementary education study program in Indonesia are influenced by several factors. Five factors were identified as latent variables with 20 statement items or valid indicators out of 30 statement items. Using F, this study found that five latent variables of promotion and socialization, facilities, interests, career prospects, and socio-economy, showed the alignment between supporting items and their respective latent variables through various match tests using both the first-order model and the second-order model. All factors have AVE values of, indicating that more than of the indicators can be explained by their latent constructs. For the HTMT values, all indicators also meet the criterion of, meaning that each item does not correlate or interfere with the latent variables. In terms of instrument reliability, the CR values of the factors also meet the threshold of, indicating that all variables are reliable. The most dominant indicator that influences the latent variable of promotion and socialization is P3, which is get information from socialization elementary education study program that is carried out in schools. In the latent variable of facilities, the most dominant indicator is F2, namely the lecture building of the elementary education study program that is spacious, comfortable, and clean. In the latent interest variable, the most dominant indicator is I1, which is happy to teach children. In the latent career prospects variable, the most dominant indicator is C2, which is graduating from the elementary education study program quickly to get a job. In the latent social and economic variables, the most dominant indicator plays a role in S6, which is fast graduation. The instrument model on students' decision to choose an elementary education study program can be widely used, although there is still room for further research development on the scale used and the addition of possible indicators. The results of this study provide benefits, especially for universities that have elementary education study programs to get students by paying attention to the most influential factors.

7. Suggestion

Although the Student Decision model in choosing an elementary education study program can be widely used in the Indonesian context and the instrument has the potential to be used in studies and practices in this particular context, we recognize that this study has some weaknesses. The most obvious limitation is that the data set is not representative of the overall sample of elementary education students in Indonesia due to convenient sampling, which reduces the validity of the conclusions obtained from the data and has an impact on generalization to other groups in Indonesia. In future research, repeated current findings using a larger random sample based on cultural background may provide more support for the generalization of the findings. Practical sampling (non-probability sampling) depends on the proximity and accessibility of the respondents; this may not result in a true picture of the people in the study area. The data is collected through online devices, which may exclude those who do not have internet access. Further research should attempt to obtain data from many sources. The number of female students in this study is higher than that of male students. Gender bias can be studied in this instrument. The next research is likely to be diverse in respondents' responses based on the status of universities (public universities or private universities).

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Declarations

Author Contributions. Utami: Conceptualization, analysis, writing, securing funding. Farid: writing and technical support. Sujarwo: Editing/reviewing, supervision, securing funding, final approval. Hidayat: Editing/reviewing, technical support. Yunaini: analysis, design, final approval. Mareza: Editing/reviewing, writing.

Conflicts of Interest. The authors declare no conflict of interest.

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Ethical Approval. This study was conducted in accordance with ethical guidelines

Data Availability Statement. Data can be provided by the corresponding author upon request

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