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The Impact of Financial Stability, Social Environment, Opportunities, and Technology on High School Students' Decision-Making

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Research Article

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Abstract

Background/purpose. High school students' decisions to pursue higher education are influenced by financial stability, social environment, technological access, and available opportunities. While prior studies examined these factors separately, this study explores their combined effects in Lumajang Regency, Indonesia.

Materials/methods. Using a quantitative explanatory approach with Structural Equation Modeling (SEM), this study analyzes the impact of financial conditions, social environment, opportunities, and technology. A sample of 385 students was selected through proportional random sampling, with data collected via structured questionnaires. Hypothesis testing was conducted using bootstrapping analysis in SmartPLS 4.

Results. Financial conditions significantly influence opportunities ($\beta = 0.786$, $p < 0.05$), which strongly impact students' education decisions ($\beta = 0.838$, $p < 0.05$). The social environment affects technology adoption ($\beta = 0.811$, $p < 0.05$), though technology does not directly shape educational choices. Self-confidence is the strongest predictor ($\beta = 0.859$, $p < 0.05$). Female students show higher financial literacy, self-confidence, and decision-making capabilities than males. These findings suggest that internal and external readiness factors must be simultaneously addressed to support informed student decisions.

Conclusion. Financial stability and social support play key roles in shaping students' higher education choices, while structured technology use is essential. It is recommended that policies focus on expanding financial aid programs, strengthening digital literacy education, and providing targeted career counseling to enhance students' educational transitions. Future research should adopt longitudinal designs to better capture changes over time.

1. Introduction

The decision to pursue higher education is one of the most critical milestones in the life of high school students. This decision significantly shapes their future opportunities in various aspects, including social, economic, and professional domains. Higher education not only equips students with the specialized skills required in the labor market but also enhances their critical thinking, problem-solving abilities, and contributions to social development (Sukmayadi et al., 2024). The decision-making process is complex and multidimensional, and it can be analyzed through several theoretical approaches, such as Rational Choice Theory and Bounded Rationality Theory. According to Rational Choice Theory, students are expected to make rational decisions based on evaluating the costs and benefits of their choices. In the context of higher education, they consider long-term benefits such as increased income and social status against the costs, including tuition fees, time, and effort (Becker, 1993). This decision is deemed optimal when students have complete access to information and can analyze it objectively. However, in reality, students often operate under conditions of limited information and cognitive capacity, as explained by Bounded Rationality Theory (Simon, 1955). This theory emphasizes that students' decisions regarding higher education are not entirely rational, as they are influenced by time constraints, emotional pressures, and cognitive biases. For instance, students from families with low educational backgrounds may lack adequate information about higher education opportunities, leading them to make decisions based more on social environment or family opinions. Moreover, decision-making in education is influenced by intrinsic and extrinsic motivations. Intrinsic motivation, such as the desire to acquire knowledge and skills, plays a crucial role in encouraging students to pursue higher education (Eccles & Wigfield, 2002). Conversely, extrinsic motivation, including parental expectations, peer pressure, and financial incentives, can either accelerate or hinder the decision-making process (Ryan & Deci, 2000; Senduk et al., 2024). In developing countries, students' decision-making about higher education is also constrained by structural barriers, such as accessibility to universities and economic disparities. External factors such as government policies providing scholarships or educational facilities also serve as significant determinants in students' decisions to continue to higher education (UNESCO, 2022). Therefore, understanding these theories can help design more effective educational policies to support the transition from secondary to higher education.

Previous research by Jabeen & Rafiuddin (2015) has categorized factors influencing students' educational choices into four major categories: socioeconomic status, reference groups, personal attributes, and academic/environmental factors. Socioeconomic status encompasses elements such as living expenses, income, employment, and prestige, which significantly impact students' accessibility to educational opportunities. For instance, students from higher-income families tend to have more educational choices compared to those from lower-income backgrounds (Reay et al., 2009). Reference groups, including parental perceptions, parental expectations, peer perceptions, and peer competition, also have a significant influence on students' choices. Studies indicate that support or pressure from these reference groups can shape students' motivations and preferences toward particular programs or institutions (Eccles, 2009). Additionally, personal attributes such as motivation, perseverance, attitudes, and self-efficacy influence students' readiness and decision-making in choosing a specific study program or institution. Self-efficacy, for example, is related to individuals' confidence in their ability to succeed, which impacts decisions related to challenging academic fields (Bandura, 1997). Finally, academic and environmental factors, including institutional reputation, career prospects, teaching quality, career guidance, infrastructure, accommodations, and extracurricular facilities, contribute to students' attraction to higher education institutions (Al Tamimi et al., 2023; Proboyo & Soedarsono, 2015).

Empirical studies indicate that financial constraints remain a primary barrier to higher education participation. Data from Badan Pusat Statistik (2023) shows that more than 30% of Indonesian high

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school students do not continue to university due to financial constraints. The Indonesian government has introduced policies such as the Kartu Indonesia Pintar (KIP) scholarship program to assist students from low-income families in accessing higher education. This program provides tuition subsidies and living allowances for recipients. While this initiative has been effective in increasing access for some students, reports suggest that many economically disadvantaged students remain unaware of or are unable to access these programs due to administrative barriers (Amin et al., 2022; Irene Dwi Ardianty et al., 2024). Moreover, studies by Perna & Titus (2005) emphasize the role of opportunities such as scholarships, financial aid, and career counseling programs in mitigating educational barriers. These opportunities significantly impact students' decisions, particularly those from middle to lower-income backgrounds. Research suggests that access to financial aid programs provides students with the confidence and assurance needed to pursue higher education (Perna, 2006; Nurjannah et al., 2023).

Although extensive research has been conducted on factors affecting students' decisions to pursue higher education, there remains a significant gap in understanding the simultaneous interaction of multiple determinants. Previous studies have primarily examined each factor individually—financial constraints, social environment, and opportunities—without integrating them into a comprehensive model that explains their collective influence on decision-making. Furthermore, most studies have focused on Western contexts, making their findings less directly applicable to developing nations like Indonesia. This research aims to address this gap by integrating four major variables—decision-making, family financial conditions, social environment, and opportunities—into a single, holistic framework that provides a more comprehensive understanding of the factors influencing high school students' decisions to continue to higher education.

This study aims to evaluate the multidimensional factors influencing high school students' decisions to pursue higher education in Lumajang Regency, Indonesia, by examining the impact of financial conditions, assessing the role of social environment—including peer influence, parental support, and school guidance—investigating the accessibility and effectiveness of educational opportunities such as scholarships and career counseling, and analyzing the interaction of these factors to provide a holistic understanding of the decision-making process. The novelty of this study lies in its comprehensive approach that integrates four key determinants into a single research model, offering a nuanced perspective that bridges previous gaps in the literature. Additionally, by focusing on Lumajang Regency, this research provides localized insights relevant to regions with unique socio-economic characteristics. The findings will contribute to educational policy by offering practical recommendations for improving student participation in higher education, particularly by enhancing financial aid dissemination, increasing social support systems, and optimizing career counseling programs. Ultimately, this research aims to create a more inclusive and equitable higher education system that benefits students from diverse socio-economic backgrounds in Indonesia..

2. Literature Review

2.1. Higher Education Decision-Making

Decision-making is a complex process involving the selection of the best alternative based on various information sources and both rational and emotional considerations. Gigerenzer and Gaissmaier (2011) state that this process is not only rational but also involves intuition and heuristics as cognitive mechanisms for dealing with uncertainty. According to Taherdoost & Madanchian (2023), decision-making entails choosing between two or more options based on an evaluation of the expected probability of outcomes. In the context of higher education, students' decision-making reflects multiple considerations, including academic, economic, social, and psychological factors (Perna, 2006). The decision-making model in higher education is often linked to the bounded rationality theory, introduced by Simon (1955). This theory explains that individuals do not always

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make optimal decisions due to limitations in information, time, and cognitive capacity. Kahneman (2011) further developed this concept by distinguishing between fast (intuitive) and slow (analytical) thinking, both of which play roles in students' college selection process. Harrison (1996) adds that decision-making in higher education involves several stages: problem identification, information gathering, alternative analysis, decision selection, implementation, and outcome evaluation. In practice, the decision to pursue higher education is influenced by multiple factors, such as socio-economic background, educational aspirations, parental support, and external factors like institutional reputation and education policies (Chapman, 1981; Joseph et al., 2012). These factors are not only individual but also embedded in broader social contexts, including group norms, societal expectations, and public policies that affect access to higher education (Perna & Titus, 2005). The conceptual model of student decision-making in college selection, developed by Perna (2006), suggests that this process is influenced by four contextual layers: individual and family, school and community environment, higher education institutions, and broader socio-economic policies. This model emphasizes that economic factors and government policies, such as scholarships and financial aid programs, significantly impact students' decisions to pursue higher education.

2.2. Family Finances and Educational Decision-Making

Family finances play a crucial role in higher education decision-making, both in terms of direct financial support and the psychological influence on students' academic expectations (Xiao & Porto, 2017). Financial literacy within families also contributes to helping students understand the importance of education investment as a long-term strategy for economic well-being (Lusardi & Mitchell, 2014). According to Human Capital Theory, proposed by Becker (1993), education is an investment in human capital that contributes to increased productivity and future earnings. Consequently, families with sound financial planning are more likely to support their children in attaining higher education. However, financial constraints often pose a barrier for students from low-income backgrounds in accessing higher education, making financial aid programs such as scholarships and student loans critical factors in educational decision-making (Kim et al., 2003).

2.3. Social Environment and Decision-Making

The social environment also plays a significant role in educational decision-making, as explained in Social Capital Theory by Bourdieu (1986) and Coleman (1988). Social capital, in the form of family support, peer networks, and teacher relationships, increases the likelihood that students will pursue higher education (Putnam, 2000). Social norms that promote academic success often influence students' educational aspirations, particularly in communities that place a high value on education (Steinberg, 2001). Additionally, social media and digitalization have further impacted educational choices by providing broader access to information on institution selection, academic programs, and career opportunities (van Dijck et al., 2018).

2.4. Technology and Decision-Making

Technology has transformed the way students access information and make educational decisions. The advent of the internet, social media platforms, and artificial intelligence enables students to obtain information faster and more comprehensively regarding higher education institutions (Brynjolfsson & McAfee, 2014; Cahyono et al., 2024). However, the abundance of available information may lead to information overload, potentially hindering rational decision-making (Eppler & Mengis, 2004; Purnamasari et al., 2024). Excessive use of digital technology can also negatively affect cognitive abilities in decision-making. Studies show that constant notifications from social media can disrupt attention and reduce critical thinking abilities when evaluating educational choices (Rosen et al., 2013). Therefore, digital literacy skills are essential for students to filter relevant and valid information in determining their educational pathways (Machete & Turpin, 2020; Rahadjeng et al., 2023).

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2.5. Opportunities and Educational Decision-Making

The availability of opportunities significantly influences students' decisions to pursue higher education. These opportunities encompass financial aspects (scholarships, educational assistance), academic factors (availability of study programs and teaching quality), social elements (family and peer support), and geographical considerations (accessibility of educational institutions) (Perna & Titus, 2005). In decision-making theory, opportunities are often linked to risk and uncertainty (Kahneman & Tversky, 1979). Students tend to evaluate educational opportunities based on future prospects, such as employment opportunities and potential earnings after graduation (Chen & Zahner, 2021). Therefore, education policies that broaden access to information and financial support can enhance students' likelihood of continuing to higher education (Bailey et al., 2020).

3. Methodology

3.1. Research Design

This study employs a quantitative approach to collect and analyze numerical data to address scientific research questions. The quantitative method is used to summarize data, calculate averages, identify patterns, make predictions, test causal relationships, and generalize findings to a broader population (Rana et al., 2021). Specifically, this study adopts an explanatory research design, which aims to elucidate causal relationships between variables through hypothesis testing (Sugeng, 2022). Data analysis is conducted using Structural Equation Modeling (SEM), a multivariate statistical technique that integrates factor analysis and regression analysis. SEM is particularly useful when studying complex relationships involving both directly observed variables (such as questionnaire responses) and unobserved or latent variables (such as motivation or confidence), which are inferred through indicators. This method allows for simultaneous analysis of relationships between latent and observed variables (Hair et al., 2017). The study focuses on four research variables: three exogenous variables—Family Finance (X1), Social Environment (X2), and Technology (X3)—and one mediating variable, Opportunities (Z1). The endogenous variable is Educational Decision-Making (Y).

3.2. Sample

The population of this study comprises all high school students in Lumajang Regency for the 2023–2024 academic year (odd semester), totaling 11,650 students. However, several districts that do not have high school students were excluded from the sampling process. The remaining districts, as listed in Table 1, form the target population for this study. A Proportional Random Sampling technique was applied to ensure that each member of the population had an equal chance of being selected. The sample size was determined using the Isaac and Michael method (Terrel & Daniel, 1986), considering the total population, confidence level, and margin of error. This method provides a reference table to determine the minimum sample size required based on population size and desired precision, making it suitable for educational research settings.

Table 1. Sample Distribution by District

No	District Name	Total Population	Sample Size
1	Lumajang District	3,934	130
2	Pasirian District	938	31
3	Tempeh District	1,180	39
4	Candipuro District	971	32
5	Randuagung District	157	5

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No	District Name	Total Population	Sample Size
6	Klakah District	484	16
7	Yosowilangun District	936	31
8	Senduro District	683	23
9	Jatiroto District	656	22
10	Kunir District	654	22
11	Pronojiwo District	586	19
12	Tempursari District	298	10
13	Ranuyoso District	45	1
14	Tekung District	128	4
Total	Total	11,650	385

Based on this calculation, the required sample size for this study was 385 respondents. These respondents were then proportionally distributed across 14 districts in Lumajang Regency. This approach ensures a representative sample and enhances the reliability of the findings in reflecting the characteristics of the student population in the region.

3.3. Instrument Development

The data for this study were collected using a survey questionnaire designed to measure students' decision-making regarding higher education, with a focus on internal factors such as family finances, social environment, and available opportunities. The questionnaire was adapted from previously validated instruments used in prior research. It employs a 5-point Likert scale, incorporating both closed-ended and open-ended questions to assess students' perceptions, attitudes, and preferences. The variables and their respective indicators are outlined in Table 2. A 5-point Likert scale allows respondents to express degrees of agreement or disagreement, typically ranging from "strongly disagree" to "strongly agree," and is widely used in behavioral and social sciences.

Table 2. Research Instrument: Variables and Indicators

Variable	Indicator	Source
Educational Decision-Making	1. Motivation 2. Self-Confidence 3. Rationality	(Spicer & Sadler-Smith, 2005); Lizzarage et al., (2009)
Family Finance	1. Income 2. Financial Management 3. Financial Literacy 4. Economic Well-being	(LeBaron-Black et al., 2024)
Social Environment	1. Family Relationships 2. Peer Relationships 3. Social Norms 4. Interaction	(Sarason et al., 1983)

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Variable	Indicator	Source
Technology	1. Access to Technology 2. Technology Usage 3. Digital Literacy 4. Technology Effectiveness	(Abad et al., 2019; Pettersson et al., 2024)
Opportunities	1. Information Access 2. Self-Readiness 3. Availability of Resources	(Anderson & Beach, 2022)

To ensure the quality and reliability of the collected data, validity and reliability tests were conducted. Content validity was assessed through expert judgment to confirm that the questionnaire items comprehensively covered the variables (Creswell & Creswell, 2018). Construct validity was evaluated using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) to verify the underlying structure of the instrument (Hair et al., 2017). EFA identifies possible underlying factor structures without prior assumptions, while CFA tests how well the observed data fit a predefined structure. Additionally, criterion validity was examined by correlating questionnaire scores with an external criterion (Kaplan & Saccuzzo, 2018). For reliability testing, internal consistency was measured using Cronbach's Alpha, with a threshold of ≥0.7 to ensure the reliability of the instrument (Hair et al., 2017). Test-retest reliability was applied to confirm the consistency of responses over time (Kerlinger, 1986). Additionally, inter-rater reliability was assessed using the Intraclass Correlation Coefficient (ICC) to evaluate the consistency of ratings across different assessors (Kaplan & Saccuzzo, 2018). These validity and reliability measures were employed to ensure that the questionnaire effectively captured the constructs under investigation and provided accurate, consistent, and meaningful data.

3.4. Data Collection and Analysis Procedure

The data collection procedure involved direct distribution of questionnaires to high school students in Lumajang Regency through face-to-face interactions at schools. Trained field researchers supervised the data collection process to ensure the accuracy, consistency, and reliability of responses. The survey aimed to capture students' decision-making processes regarding higher education, focusing on factors such as family finance, social environment, and available opportunities. For data analysis, this study employed Structural Equation Modeling–Partial Least Squares (SEM-PLS), a robust statistical technique suitable for analyzing complex and multidimensional models. SEM-PLS is preferable when dealing with exploratory models or when the data does not meet strict assumptions of normality, making it suitable for social science research. SEM-PLS was selected due to its ability to perform predictive modeling of students' decision-making, accommodate small sample sizes, handle non-normal data distributions, and identify key influencing factors. The analysis followed two primary steps: (1) the Measurement Model (Outer Model), which assesses the validity and reliability of latent variables using Average Variance Extracted (AVE), Composite Reliability (CR), and Factor Loadings; and (2) the Structural Model (Inner Model), which examines relationships between latent variables through R-square values, path coefficients, and bootstrapping significance tests (Hair et al., 2019). Bootstrapping is a resampling method that generates multiple sub-samples from the original data to estimate the accuracy and significance of model parameters.

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3.5. Theoretical Model Development

The initial stage in developing the structural equation model (SEM) involves determining the theoretical focus of the research problem. This study primarily examines Higher Education Decision-Making among High School Students. The theoretical framework for decision-making is constructed through a comprehensive review of credible literature, including academic journals and books, to analyze the relationships between the latent variables under investigation. Subsequently, the research objectives are formulated and translated into hypotheses, which are supported by theoretical foundations and empirical evidence from previous studies. Based on the theoretical review and relevant research findings, a theoretical model is developed, incorporating latent variables and mathematical symbols representing the relationships between constructs.

According to Figure 1, this study formulates 12 hypotheses, consisting of three direct relationships and two indirect relationships. To test these hypotheses, Structural Equation Modeling (SEM) with a Partial Least Squares (PLS) approach is applied in this study conducted in Lumajang Regency. In this analysis, research variables are represented in mathematical notation. The model used is based on the study's conceptual framework, but the structural equation model is specifically aimed at measuring the relationships between variables. This analysis generates loading factor values for each manifest variable in relation to its corresponding latent variable. Additionally, coefficient values are obtained to describe the influence of exogenous latent variables on endogenous latent variables, as well as the interrelationships among endogenous latent variables. Loading factors reflect how well each observed variable represents the underlying latent construct, while path coefficients measure the strength and direction of the influence between constructs. The structural equation model is mathematically expressed to measure loading factors and coefficients of influence between latent variables, as shown in the following representation.

The notation used in this model includes exogenous latent variables (ξ1, ξ2, ξ3, ξ4), which represent family finance, social environment, technology, and opportunities, respectively. The endogenous latent variable (η) represents educational decision-making. The relationships between these variables are captured through direct path coefficients (γ1, γ2, ..., γ9), indicating the influence of exogenous variables on the endogenous variable. Additionally, λ1, λ2, ..., λ18 represent the direct relationships between latent and observed variables, while measurement errors (ε1, ε2, ..., ε15 for exogenous variables and δ1, δ2, δ3 for endogenous variables) are accounted for in the model. Furthermore, ζ1, ζ2, ζ3 represent residual errors for the latent variable equations.

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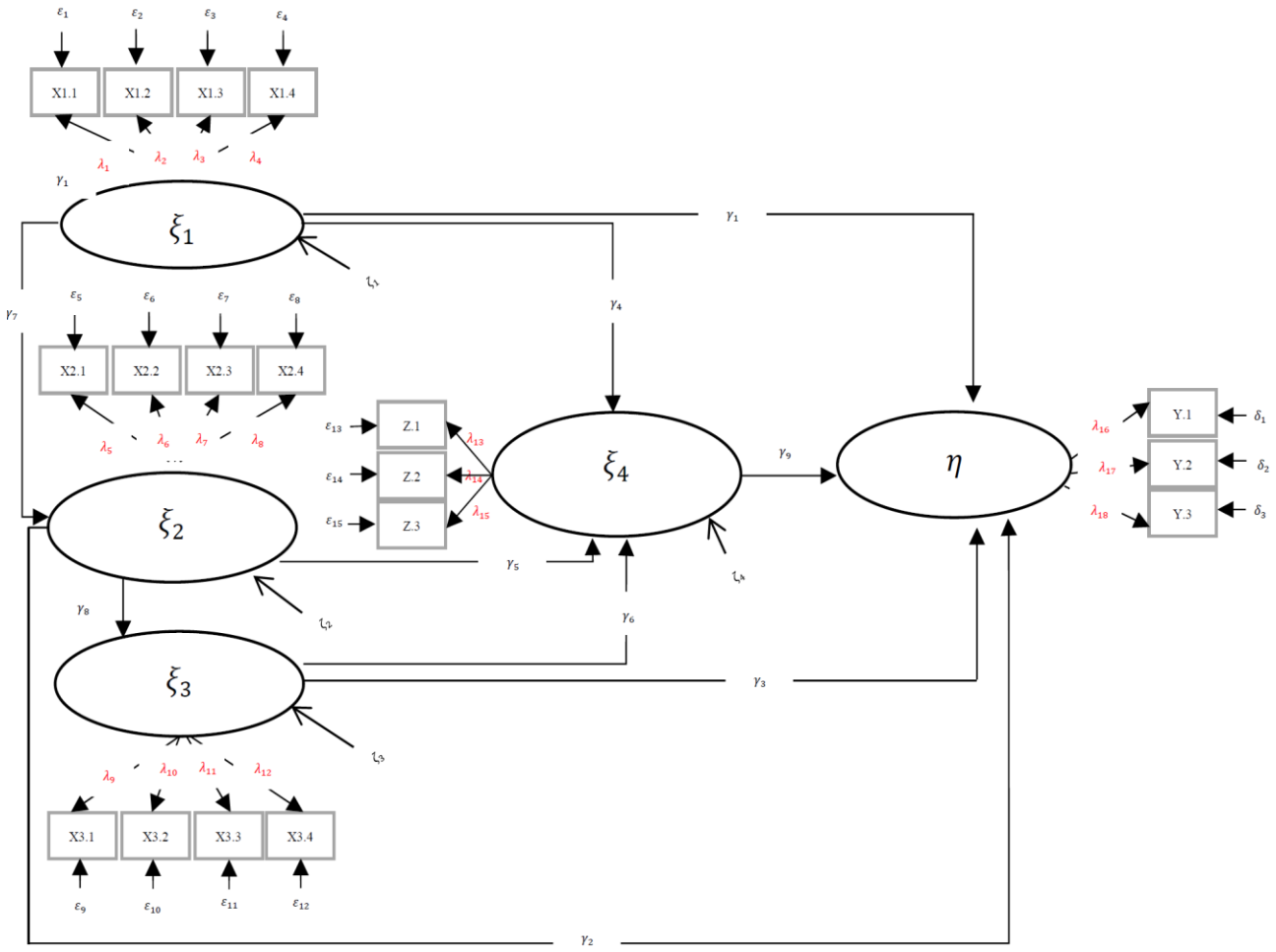

Figure 1. Structural Equation Model of Factors Determining High School Students' Higher Education Decision-Making

The structural equation model used to test the research hypotheses is mathematically formulated as follows:

$$\eta = \gamma 1 \xi 1 + \zeta 1$$

$$\eta = \gamma 2 \xi 2 + \zeta 2$$

$$\eta = \gamma 3 \xi 3 + \zeta 3$$

$$\xi 4 = \gamma 4 \xi 1 + \zeta 1$$

$$\xi 4 = \gamma 5 \xi 2 + \zeta 2$$

$$\xi 4 = \gamma 6 \xi 3 + \zeta 3$$

$$\xi 2 = \gamma 7 \xi 1 + \zeta 1$$

$$\xi 3 = \gamma 8 \xi 2 + \zeta 2$$

$$\eta = \gamma 9 \xi 4 + \zeta 4$$

$$\eta = \gamma 4 \xi 1 + \gamma 9 \xi 4 + \zeta 1$$

$$\eta = \gamma 52 + \gamma 9 \xi 4 + \zeta 2$$

$$\eta = \gamma 6 \xi 3 + \gamma 9 \xi 4 + \zeta 3$$

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This mathematical model provides a structured approach to analyzing the relationships between variables, allowing for a deeper understanding of the factors influencing high school students' decisions to pursue higher education.

4. Results

4.1. Instrument Validity and Reliability

A preliminary study involving 30 respondents was conducted to assess the validity and reliability of the research instrument. The validity test was carried out using Pearson's Correlation analysis with a significance value (p-value = 0.050). The results indicate that 13 out of 96 descriptors were invalid and excluded from the full-scale data collection (Table 3).

Table 3. Validity Test Results of Descriptors for Each Indicator

No	Educational Decision	Family Finance	Social Environment	Opportunity	Technology
1	0.405	0,695	0,225*	0.549	0,326*
2	0.522	0,764	0,722	0.549	0,749
3	0.430	0,714	0,832	0.330*	0,843
4	0.448	0,619	0,722	0.348*	0,749
5	0.452	0,728	0,832	0.330*	0,843
6	0.391	0,694	0,670	0.354*	0,671
7	0.390	0,839	0,749	0.606	0,760
8	0.390	0,768	0,753	0.437	0,754
9	0.395	0,839	0,724	0.354*	0,744
10	0.413	0,768	0,749	0.437	0,760
11	0.400	0,713	0,763	0.592	0,775
12	0.369	0,404	0,857	0.666	0,847
13	0.622	0,609	0,622	-	0,640
14	0.386	0,675	0,225*	-	0,628
15	0.447	0,675	0,857	-	0,847
16	0.454	0,694	0,763	-	0,775
17	0.425	0,839	0,857	-	0,847
18	0.406	0,768	0,622	-	0,640
19	0.403	0,694	0,290*	-	0,325*
20	0.080*	0,839	0,857	-	0,847
21	-0.022*	-	-	-	-

Note: r calculated > 0.361 indicates a valid item. Pearson's correlation was used for validity analysis with a confidence level of 95% and a significance level (p-value) ≤ 0.050. An asterisk (*) indicates that r calculated ≤ 0.361, meaning the item is not valid.

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Pearson's correlation analysis with a 95% confidence level ($p \leq 0.050$) revealed that descriptors with r-values ≤ 0.361 were deemed invalid. The remaining valid descriptors were further assessed for reliability using the Cronbach Alpha Reliability Test ($\alpha = 0.95$, acceptance threshold ≥ 0.600). The reliability test results confirm that all descriptor components for each variable exhibit reliability scores above 0.600, indicating that the questionnaire is suitable for data collection (Table 4).

Table 4. Reliability Test Results Based on Cronbach's Alpha

Variable	Cronbach's Alpha	N of Items	Description
Educational Decision	0.903	19	Highly Reliable
Family Finance	0.951	20	Highly Reliable
Social Environment	0.959	17	Highly Reliable
Opportunity	0.801	10	Highly Reliable
Technology	0.959	18	Highly Reliable

Note: The analysis was conducted using the Cronbach's Alpha Reliability Test in SPSS version 25, 2025. An instrument is considered reliable if the Cronbach's Alpha value is greater than 0.600.

The highest reliability scores were observed for the "Family Financial" and "Social Environment" variables, with Cronbach's Alpha values of 0.951 and 0.959, respectively, suggesting strong internal consistency. Other variables, including "Education Decision" and "Opportunities," also demonstrated high reliability. These results affirm that the developed questionnaire is reliable and consistent in measuring the studied variables.

4.2. Descriptive Analysis of Variables

Data from 398 respondents indicate variations in scores across gender for each variable. Overall, all indicators fall within the "moderate" to "high" category, with values ranging from 3.60 to 4.30.

Table 5. Comparison of Financial, Social, Technological, Opportunity, and Psychological Indicators by Gender

Indicator	Male (Max.)	Male (Min.)	Male (Mean ± SD)	Category	Female (Max.)	Female (Min.)	Female (Mean ± SD)	Category
Financial Management (KK1)	5.00	1.60	3.76 ± 1.08	Moderate	5.00	1.20	3.80 ± 1.12	Moderate
Income (KK2)	5.00	1.20	3.79 ± 1.02	Moderate	5.00	1.60	3.84 ± 0.94	High
Financial Literacy (KK3)	5.00	1.60	3.92 ± 1.02	High	5.00	1.40	3.90 ± 0.98	High
Economic Well-being (KK4)	5.00	1.40	3.79 ± 1.08	Moderate	5.00	1.40	3.86 ± 0.97	High
Total Financial Mean ± SD	-	-	3.80 ± 0.90	Moderate	-	-	3.81 ± 0.83	High

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Indicator	Male (Max.)	Male (Min.)	Male (Mean ± SD)	Category	Female (Max.)	Female (Min.)	Female (Mean ± SD)	Category
Family Relationships (LS1)	5.00	1.80	4.34 ± 0.80	High	5.00	1.80	4.22 ± 0.87	High
Friendship Relationships (LS2)	5.00	1.40	4.12 ± 0.79	High	5.00	1.40	3.96 ± 0.87	High
Social Norms (LS3)	5.00	2.00	4.30 ± 0.77	High	5.00	1.80	4.19 ± 0.81	High
Interaction (LS4)	5.00	2.00	4.30 ± 0.77	High	5.00	1.80	4.19 ± 0.81	High
Total Social Mean ± SD	-	-	4.12 ± 0.67	High	-	-	4.01 ± 0.77	High
Technology Access (T1)	5.00	1.80	4.34 ± 0.80	High	5.00	1.80	4.22 ± 0.87	High
Technology Knowledge (T2)	5.00	1.40	4.12 ± 0.79	High	5.00	1.40	3.96 ± 0.87	High
Digital Literacy (T3)	5.00	2.00	4.14 ± 0.73	High	5.00	1.80	4.06 ± 0.80	High
Technology Effectiveness (T4)	5.00	2.00	4.30 ± 0.77	High	5.00	1.80	4.19 ± 0.81	High
Total Technology Mean ± SD	-	-	4.13 ± 0.65	High	-	-	4.02 ± 0.76	High
Interaction Access (P1)	5.00	1.80	3.65 ± 1.28	Moderate	5.00	1.40	3.81 ± 1.28	High
Self-Readiness (P2)	5.00	2.00	3.60 ± 1.08	Moderate	5.00	1.80	3.87 ± 1.01	High
Availability of Elementary Schools (P3)	5.00	1.40	3.99 ± 1.08	High	5.00	1.40	3.99 ± 0.98	High
Total Opportunity Mean ± SD	-	-	3.69 ± 0.85	Moderate	-	-	3.82 ± 0.83	High
Motivation (KP1)	5.00	1.50	3.78 ± 0.91	Moderate	5.00	1.88	3.91 ± 0.87	High

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Indicator	Male (Max.)	Male (Min.)	Male (Mean ± SD)	Category	Female (Max.)	Female (Min.)	Female (Mean ± SD)	Category
Self-Confidence (KP2)	5.00	1.33	3.81 ± 0.89	High	5.00	1.83	3.97 ± 0.86	High
Rationality (KP3)	5.00	1.60	3.91 ± 0.95	High	5.00	1.20	3.99 ± 0.95	High
Total Psychological Mean ± SD	-	-	3.77 ± 0.80	Moderate	-	-	3.90 ± 0.76	High

In terms of family financial condition, women generally exhibit better financial standing, particularly in income and economic well-being, indicating potentially more stable income sources or more effective financial management strategies. Both genders demonstrate high financial literacy, but women score higher in financial stability aspects. Regarding the social environment, both male and female respondents maintain strong social relationships with family, friends, and the community, signifying a well-supported social structure. In technology utilization, both genders have high accessibility and literacy in digital technology, though men score slightly higher in technology knowledge and digital literacy, suggesting a potential gender difference in digital competency. When considering opportunities, women score slightly higher in interaction access and self-readiness, which may reflect their greater involvement in social networks and preparedness for leveraging available opportunities. Finally, in education decision-making, women exhibit higher scores, especially in motivation and self-confidence, highlighting stronger academic aspirations and a more proactive approach to educational and career-related decisions.

4.3. CFA 2nd Order Analysis

Confirmatory Factor Analysis (CFA) was conducted using SmartPLS 4 to validate the construct model. The analysis focused on reflective relationships between sub-indicators and their respective indicators. Items that weakened the R^2 value were eliminated, resulting in an optimized construct model.

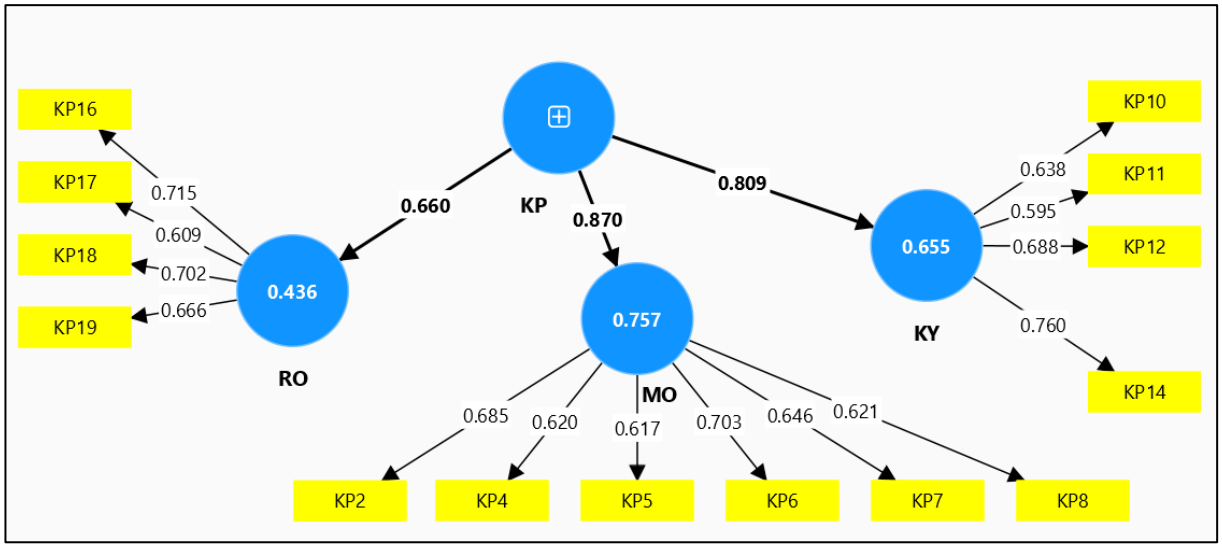

Figure 2. CFA 2nd Order Analysis for Education Decision

Following refinement, all indicators achieved loading factors > 0.5 and AVE values between 4 and 5, confirming convergent validity. Discriminant validity tests using Fornell-Lacker Criterion and cross-loading approaches were met with HTMT values < 0.9. Reliability tests showed CR > 0.7 and Cronbach Alpha values near 0.6, indicating a valid and reliable construct. Similar CFA 2nd Order analyses were conducted for "Family Financial Condition," "Social Environment," "Opportunities," and "Technology," with results summarized in Figures 3-6.

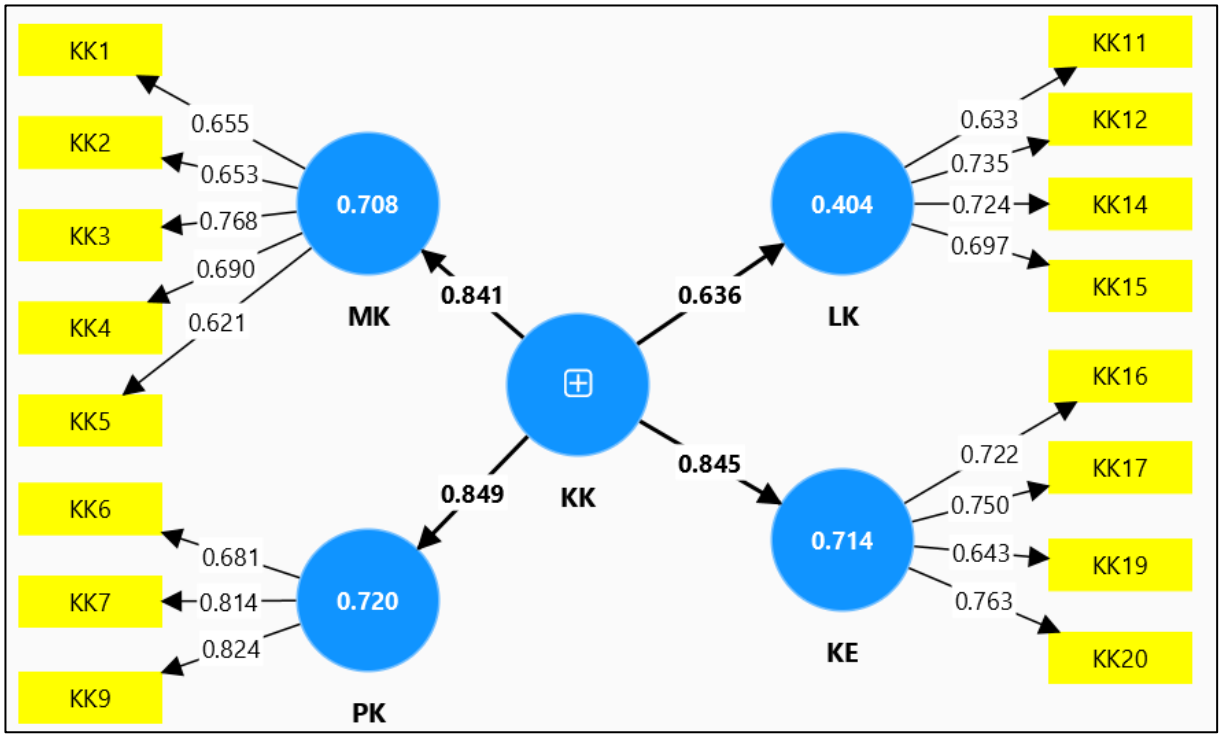

Figure 3. Results of 2nd Order CFA Analysis for the Family Finance Variable

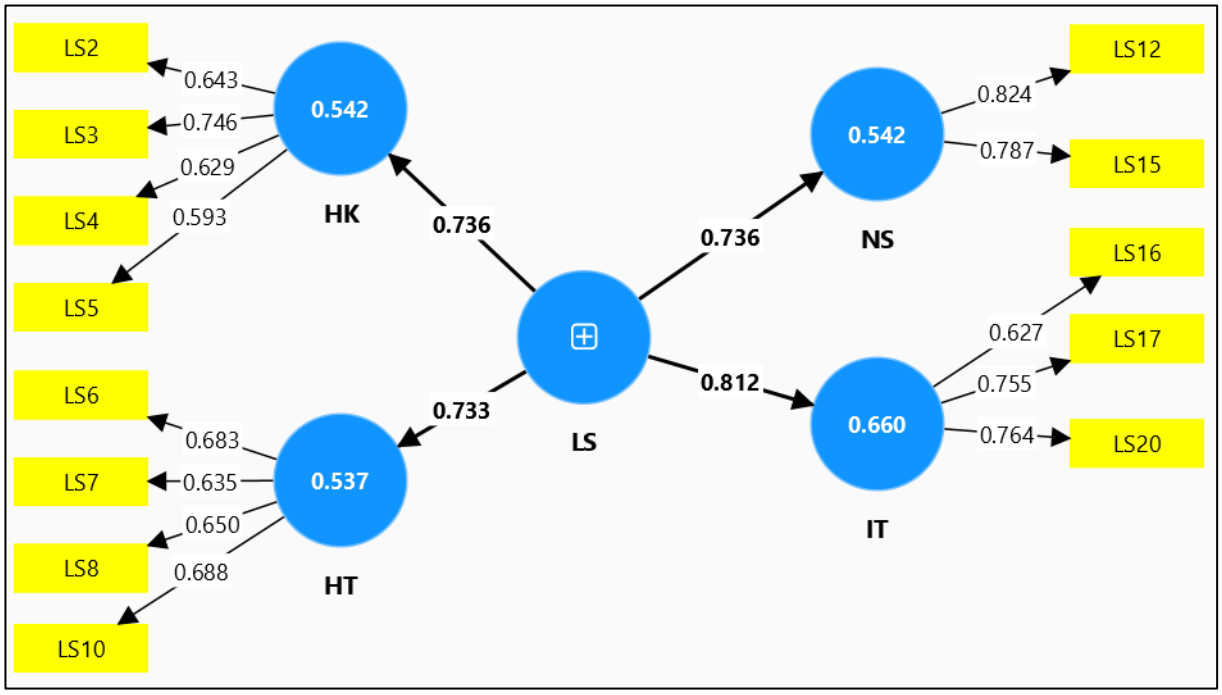

Figure 4. Results of 2nd Order CFA Analysis for the Social Environment Variable

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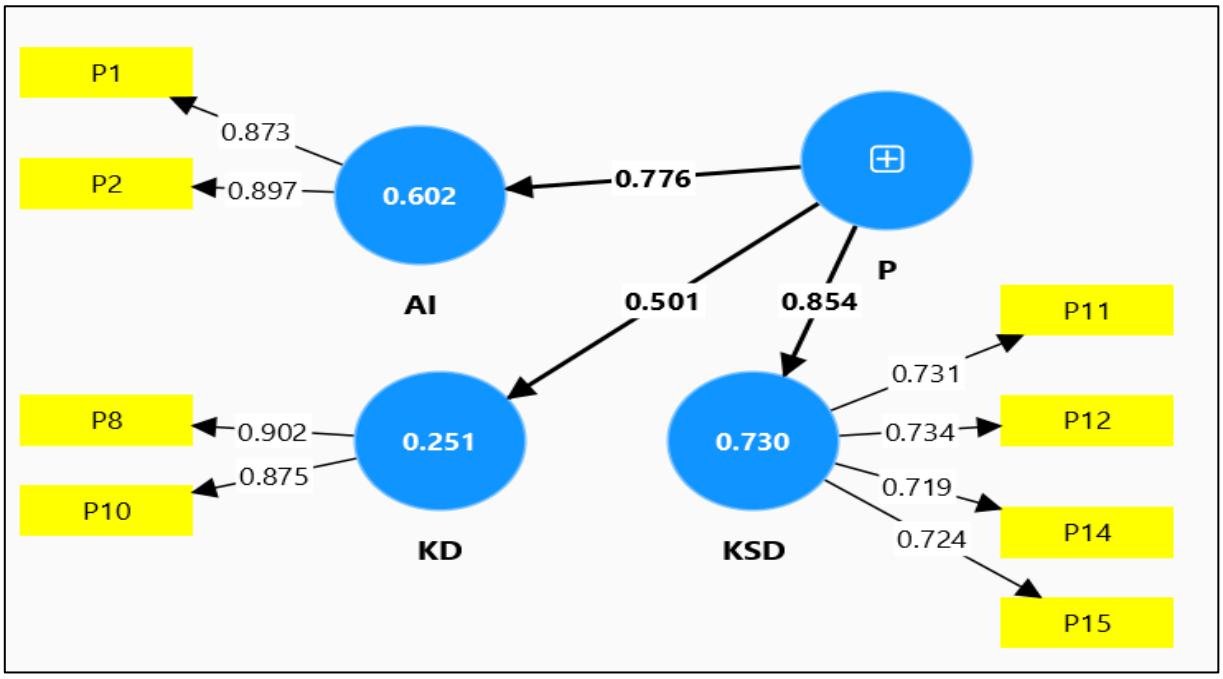

Figure 5. Results of 2nd Order CFA Analysis for the Opportunity Variable

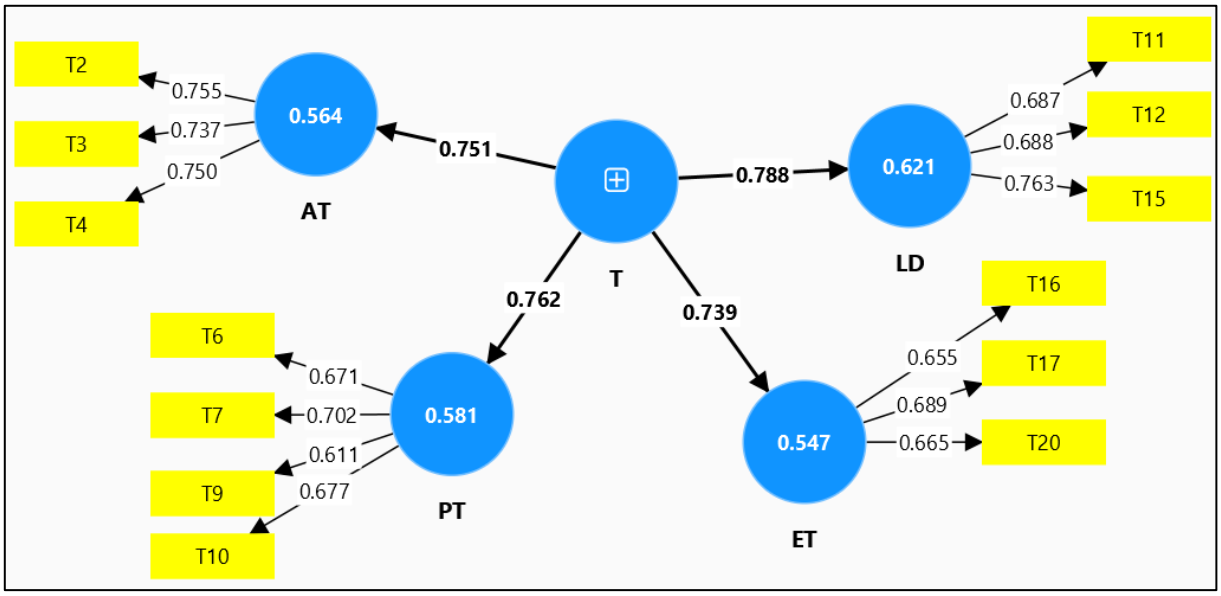

Figure 6. Results of 2nd Order CFA Analysis for the Technology Variable

The 2nd Order CFA Analysis for the Family Finance, Social Environment, Opportunity, and Technology Variables involved structural modifications to enhance model validity and reliability. In the Family Finance Variable, four indicators—Financial Management, Income, Financial Literacy, and Economic Well-being—were assessed, with some sub-indicators removed due to low factor loadings. The final model achieved loading factors > 0.6, AVE values above 0.46, and acceptable CR and Cronbach Alpha values, confirming convergent and discriminant validity. The Social Environment Variable, composed of Family Relationships, Friendships, Social Norms, and Interactions, also required modifications, eliminating sub-indicators with AVE values below 4. The revised model met validity criteria, with AVE values above 0.4 for some indicators and above 0.5 for others, while reliability tests showed CR > 0.7 and Cronbach Alpha ≥ 0.5. Similarly, in the Opportunity Variable, consisting of Information Access, Self-Readiness, and School Availability, modifications were made to exclude weak-loading sub-indicators, ensuring loading factors > 0.7, AVE values above 0.5, and strong reliability. Lastly, the Technology Variable (Figure 4.5), including Technology Access, Usage, Digital

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Literacy, and Technology Effectiveness, underwent adjustments to remove low-loading items. The revised model demonstrated loading factors ≥ 0.6, with AVE values between 0.4 and 0.5, confirming validity and reliability, except for Technology Effectiveness, which had a lower Cronbach Alpha value (< 0.5). Overall, after modifications, all models met convergent and discriminant validity criteria, confirming their robustness in representing each construct.

4.4. Full Model Analysis

Based on initial findings, the model was refined by excluding the "Information Access" indicator from the "Opportunities" construct to meet validity and reliability criteria.

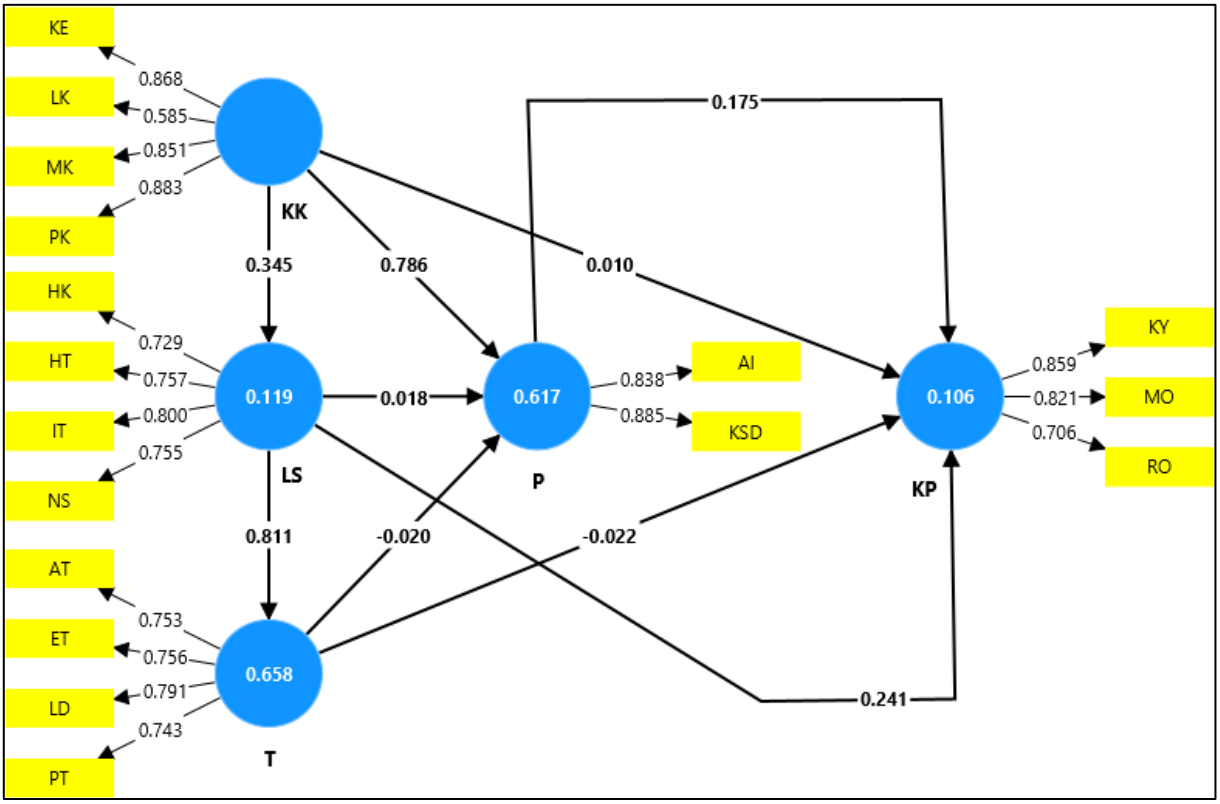

Figure 7. Final Structural Equation Model (SEM) with Path Coefficients

The relationships between exogenous and intervening variables—Family Financial Condition (KK), Social Environment (LS), and Technology (T)—and the endogenous variables, Opportunities (P) and Educational Decisions (KP). The diagram highlights the latent constructs and their respective indicators, showing that Family Financial Condition (KK) is primarily influenced by Economic Well-being (KE) and Income (PK), while Social Environment (LS) is most affected by Social Interaction (IT). Meanwhile, Digital Literacy (LD) plays the most significant role in shaping Technology (T). The path coefficient analysis reveals that Family Financial Condition (KK) has the strongest impact on Opportunities (P) (0.786), indicating that financial stability significantly enhances educational opportunities. It also directly influences Educational Decisions (KP) (0.175), underscoring the role of economic factors in shaping academic choices. Social Environment (LS) has a weaker influence on Opportunities (P) (0.018) but significantly affects Technology (T) (0.811), suggesting that social interactions enhance technological access and use. However, Technology (T) has a negative effect on both Opportunities (P) (-0.020) and Educational Decisions (KP) (-0.022), indicating that excessive or unstructured technology use may not always translate into better educational outcomes. In contrast, Opportunities (P) strongly impact Educational Decisions (KP) (0.838), reaffirming that access to academic and career opportunities is a key determinant of decision-making in education. Among the factors influencing Educational Decisions (KP), Self-Confidence (KY) has the highest contribution (0.859), highlighting the importance of confidence in making academic choices. These findings

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suggest that Family Financial Condition (KK) is the dominant factor affecting educational opportunities, which subsequently shape academic decisions. While Social Environment (LS) has a smaller effect on Opportunities, it plays a crucial role in enhancing Technology (T). Despite its increasing importance, Technology (T) does not always positively impact education, possibly due to its predominant use for entertainment rather than academic purposes. Therefore, policy interventions should focus on improving family financial well-being, creating more educational opportunities, and optimizing technology use for academic support rather than distraction. A detailed SEM analysis is presented in two stages: the outer model (CFA 1st order analysis) and the inner model (hypothesis testing), which are further elaborated in the following sections.

4.5. Direct and Indirect Effects

The analysis of key relationships and path coefficients reveals several significant influences. Family financial condition has a significant positive effect on opportunities, with a coefficient of 0.786 ($p < 0.05$), indicating that better financial stability enhances the availability of opportunities. Similarly, the social environment significantly influences technology adoption, as evidenced by a path coefficient of 0.811 ($p < 0.05$), suggesting that social factors play a crucial role in technological engagement. The strongest relationship is observed between opportunities and education decision-making, with a coefficient of 0.838 ($p < 0.05$), highlighting that greater opportunities significantly increase the likelihood of making informed educational choices. However, the relationship between technology and opportunities is found to be non-significant, with a coefficient of -0.020 ($p > 0.05$), indicating that technological factors do not directly influence opportunity creation. Additionally, the social environment has a significant effect on education decisions (0.241, $p < 0.05$), emphasizing the role of societal influences in shaping educational choices.

Table 6. Direct Effects of Variables

Path	Model complete		Model MGA (Male)		Model MGA (Female)	
	Coefficient	P values	Coefficient	P values	Coefficient	P values
KK -> LS	0.345	0.000	0.251	0.005	0.412	0.000
LS -> T	0.811	0.000	0.778	0.000	0.833	0.000
KK -> P	0.786	0.000	0.792	0.000	0.785	0.000
LS -> P	0.018	0.778	-0.007	0.938	0.038	0.653
T -> P	-0.020	0.759	0.029	0.747	-0.058	0.505
KK -> KP	0.010	0.914	-0.121	0.413	0.142	0.231
LS -> KP	0.241	0.008	0.376	0.007	0.141	0.282
P -> KP	0.175	0.047	0.203	0.140	0.155	0.170
T -> KP	-0.022	0.816	-0.060	0.694	0.004	0.975

Note: P-value < 0.05 indicates a significant direct effect.

The direct effect bootstrapping analysis indicates that Family Financial Condition (KK) significantly influences Social Environment (LS) (0.345, $p < 0.05$), Social Environment (LS) significantly affects Technology (T) (0.811, $p < 0.05$), and Family Financial Condition (KK) significantly impacts Opportunities (P) (0.786, $p < 0.05$). However, Social Environment (LS) does not significantly affect Opportunities (P), and Technology (T) has no significant effect on either Opportunities (P) or Educational Decisions (KP). Additionally, while Family Financial Condition (KK) positively influences

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Educational Decisions (KP), the effect is not statistically significant. The highest coefficient values are observed in the relationships between Social Environment (LS) and Technology (T), and Family Financial Condition (KK) and Opportunities (P), with similar findings across the complete model, male, and female models. Notably, if a relationship is non-significant in the complete model, it remains non-significant in both the male and female MGA models, except for the Social Environment (LS) to Educational Decision (KP) relationship, which is not significant for females.

Table 7. Indirect Effects of Variables

Path	Model complete		Model MGA (Male)		Model MGA (Female)	
	Score	p-values	Score	p-values	Score	p-values
Total Indirect Effect						
KK -> KP	0.215	0.004	0.244	0.034	0.180	0.066
KK -> P	0.001	0.958	0.004	0.778	-0.005	0.824
KK -> T	0.280	0.000	0.195	0.006	0.343	0.000
LS -> KP	-0.017	0.820	-0.043	0.720	0.002	0.987
LS -> P	-0.016	0.760	0.023	0.750	-0.049	0.508
T -> KP	-0.003	0.788	0.006	0.797	-0.009	0.623
Specific Indirect Effect						
KK -> LS -> P	0.006	0.781	-0.002	0.944	0.016	0.661
LS -> T -> P	-0.016	0.760	0.023	0.750	-0.049	0.508
KK -> LS -> T	0.280	0.000	0.195	0.006	0.343	0.000
T -> P -> KP	-0.003	0.788	0.006	0.797	-0.009	0.623
KK -> LS -> T -> P -> KP	-0.001	0.794	0.001	0.825	-0.003	0.638
KK -> LS -> T -> P	-0.006	0.762	0.006	0.775	-0.020	0.521
KK -> LS -> T -> KP	-0.006	0.821	-0.012	0.729	0.001	0.975
LS -> T -> P -> KP	-0.003	0.789	0.005	0.800	-0.008	0.625
KK -> LS -> P -> KP	0.001	0.810	0.000	0.956	0.002	0.733
KK -> P -> KP	0.138	0.049	0.161	0.142	0.121	0.175
KK -> LS -> KP	0.083	0.015	0.094	0.056	0.058	0.297
LS -> T -> KP	-0.018	0.817	-0.046	0.699	0.003	0.975
LS -> P -> KP	0.003	0.805	-0.001	0.950	0.006	0.723

Note: P-value < 0.05 indicates a significant indirect effect.

The indirect effect bootstrapping analysis indicates that Family Financial Condition (KK) has a significant indirect effect on Technology (T) (0.280, $p < 0.05$) and a significant total indirect effect on Educational Decisions (KP) (0.215, $p < 0.05$). However, there is no significant indirect effect of Family Financial Condition (KK) on Opportunities (P), Social Environment (LS) on Opportunities (P), or Technology (T) on Educational Decisions (KP). A key finding is the role of Social Environment (LS) as a mediator between Family Financial Condition (KK) and Technology (T), which is positive and significant in all models (complete, male, and female). However, Social Environment (LS) is not a

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critical mediator in this relationship, as Family Financial Condition (KK) already has a direct and significant effect on Technology (T). Conversely, Opportunities (P) and Social Environment (LS) act as full mediators between Family Financial Condition (KK) and Educational Decisions (KP), as Family Financial Condition (KK) does not directly influence Educational Decisions (KP) without their presence. The comparison of indirect effects shows variations, but the direct effect values for male and female MGA models do not differ significantly. These findings suggest that Family Financial Condition (KK) is a dominant factor in shaping educational opportunities, which subsequently influence academic decisions. Social Environment (LS) plays a role in enhancing technology use, but Technology (T) does not always have a positive impact on educational opportunities or decisions. These results emphasize the importance of financial stability and expanded opportunities in improving educational decision-making. Additionally, interventions in digital education must ensure technology is used effectively for academic purposes rather than entertainment.

4.7. Hypothesis Testing

Hypothesis testing results indicate that financial conditions strongly influence educational opportunities and decision-making. Technology, despite its importance, does not always positively impact educational choices, potentially due to its use for entertainment rather than academic purposes.

Table 8. Total Effect Analysis

Path	Model complete		Model MGA (Male)		Model MGA (Female)	
	Coefficient	P values	Coefficient	P values	Coefficient	P values
KK -> KP	0.225	0.000	0.124	0.202	0.322	0.000
KK -> LS	0.345	0.000	0.251	0.005	0.412	0.000
KK -> P	0.787	0.000	0.796	0.000	0.781	0.000
KK -> T	0.280	0.000	0.195	0.006	0.343	0.000
LS -> KP	0.224	0.000	0.333	0.000	0.143	0.067
LS -> P	0.002	0.957	0.016	0.748	-0.011	0.819
LS -> T	0.811	0.000	0.778	0.000	0.833	0.000
P -> KP	0.175	0.047	0.203	0.140	0.155	0.170
T -> KP	-0.025	0.787	-0.054	0.721	-0.005	0.971
T -> P	-0.020	0.759	0.029	0.747	-0.058	0.505

Note: P-value < 0.05 indicates a significant total effect.

The total effect represents the combined calculation of direct and indirect effect coefficients, where in the complete model, all relationships are positive and significant. In both the male and female groups, there are five total effect relationships that are positive and significant, whereas in the complete model, there are seven positive and significant total effect relationships. The highest total effect coefficients are observed in the relationships between Social Environment (LS) and Technology (T), as well as Family Financial Condition (KK) and Opportunities (P), across the complete model, male model, and female model. Although some total effect values vary significantly, comparative testing reveals that the direct effect values between the male and female MGA groups do not differ significantly.

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5. Discussion

5.1. Financial Stability and Educational Opportunities

The findings of this study strongly corroborate existing literature emphasizing financial stability as a crucial determinant of educational opportunities (Alrashed, 2024; Liu et al., 2025). It has long been established that economic well-being significantly influences educational decisions, particularly in terms of access to quality learning resources, school retention rates, and academic achievement (Cho et al., 2024). The relationship between financial stability and educational success is well documented across various socioeconomic contexts, demonstrating that students from financially secure backgrounds tend to perform better academically compared to their less privileged counterparts. Financial security ensures that students have access to essential educational tools, such as books, digital devices, and private tutoring, which are critical for academic success. Additionally, stable financial conditions alleviate psychological stress related to economic hardship, allowing students to focus more on their studies. In this study, financial stability is confirmed as a decisive factor influencing not only educational access but also students' perceived opportunities (path coefficient = 0.786), reinforcing its foundational role in shaping future academic paths. The correlation between economic well-being and student performance underscores the necessity for governments and educational institutions to implement policies aimed at reducing financial barriers to education. Moreover, financial support programs such as scholarships, grants, and educational subsidies play a pivotal role in promoting equitable access to education. Evidence suggests that students who receive financial assistance exhibit improved academic performance and higher retention rates compared to those without support. Therefore, policymakers must prioritize financial stability measures, including increased funding for education and targeted assistance for economically disadvantaged students.

5.2. The Role of Social Interactions in Technology Adoption

Social interactions emerged as a key driver of technology adoption, supporting existing research that suggests peer influence significantly enhances digital engagement and literacy (Wise et al., 2024; Kizilcec et al., 2024). In educational settings, the adoption of technology is often influenced by peer networks, where students learn new digital tools and platforms through collaborative experiences (Jivet et al., 2024). Peer support plays a critical role in fostering a positive attitude toward digital learning, as students who engage with technology alongside their peers are more likely to develop higher levels of digital competence. The role of social influence extends beyond peer interactions, encompassing teacher-student relationships and parental support in technology adoption. Studies have demonstrated that students who receive guidance from teachers and parents regarding digital tools exhibit greater proficiency in integrating technology into their learning routines (Viberg et al., 2024). Consequently, it is essential to develop structured technology integration strategies that incorporate social support mechanisms to enhance digital literacy and academic engagement.

5.3. The Dual Impact of Technology on Education

The role of technology in education presents a significant divergence from past studies. While traditional research emphasizes the positive impact of digital literacy on academic outcomes (Fan et al., 2025), the present findings suggest that unstructured technology use negatively affects educational decision-making (Montejano et al., 2025). This highlights the necessity of structured digital learning environments to maximize the benefits of technology in education. Unregulated access to digital resources can lead to distractions, reducing students' focus on academic tasks (Debnath et al., 2025). The widespread availability of digital platforms, such as social media and online entertainment, has introduced new challenges in maintaining students' academic discipline. Interestingly, although technology use did not show a direct effect on students' educational decision-

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making, its indirect influence through the mediating role of opportunities is significant. This suggests that the usefulness of technology depends on how well it is channeled to provide access to information and readiness for higher education. As a result, educational institutions must implement policies that promote structured and productive technology use. This includes the integration of digital learning platforms into formal curricula, the implementation of digital literacy programs, and the establishment of guidelines for responsible technology use. Additionally, research has shown that interactive digital tools, such as educational apps and online simulations, enhance student engagement and comprehension when properly integrated into learning environments (Wise et al., 2024; Jivet et al., 2024). Therefore, educators must take a proactive role in guiding students on the effective use of technology to ensure that digital resources contribute positively to their academic development.

5.4. Self-Confidence as a Determinant of Educational Decision-Making

A significant contrast between this study and prior research lies in the role of self-confidence in educational decision-making. Traditional studies emphasize cognitive ability as the primary predictor of academic success (Liu et al., 2025; Ren et al., 2025), whereas this study identifies self-confidence as the strongest determinant. Psychological readiness and self-efficacy have emerged as critical factors influencing students' academic choices, highlighting the importance of fostering confidence in learning environments (Cho et al., 2024). Self-confidence plays a crucial role in students' willingness to explore new academic opportunities, take intellectual risks, and persist through challenges (Yang et al., 2025). High self-efficacy is associated with increased motivation, better problem-solving skills, and a greater ability to adapt to academic demands. Conversely, students with low self-confidence often experience higher levels of anxiety and self-doubt, which can hinder their educational aspirations. This study highlights that self-confidence (path coefficient = 0.859) serves as a key psychological enabler, often mediating how external factors—such as financial support or technological access—translate into actual academic decisions. Given the impact of self-confidence on educational decision-making, it is imperative for educators to create supportive learning environments that nurture students' psychological resilience. Strategies such as mentorship programs, positive reinforcement, and personalized academic guidance can significantly enhance students' self-efficacy, ultimately improving their academic performance and career prospects.

5.5. Policy Implications for Educational Decision-Making

The study findings emphasize the need for policies that enhance financial stability, social support, and structured technology integration to improve educational decision-making (Viberg et al., 2024; Park et al., 2024). The strong influence of family financial condition on educational opportunities (path coefficient = 0.786) underscores the potential impact of economic interventions on expanding access to education (Alrashed, 2024). Moreover, the significant but indirect role of technology—mediated through perceived opportunities—indicates that expanding access to structured digital resources can effectively increase students' readiness for higher education. Financial aid programs must be expanded to address the growing need for economic support among students from disadvantaged backgrounds. By providing scholarships, low-interest student loans, and tuition subsidies, educational institutions can reduce financial barriers to learning. Furthermore, policies should focus on equipping schools with adequate digital infrastructure to promote structured technology use in classrooms. This includes teacher training programs on digital pedagogy, the development of educational apps tailored to diverse learning needs, and the regulation of screen time to minimize distractions. Similarly, the high impact of self-confidence on decision-making (path coefficient = 0.859) highlights the importance of psychological and career guidance support in academic planning (Yang et al., 2025). Schools should implement programs that foster students' self-confidence through skill-building activities, leadership training, and career counseling. These

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initiatives will empower students to make informed educational decisions, enhancing their long-term academic and professional success.

5.6. Limitations and Future Research Directions

While this study provides valuable insights, certain limitations must be acknowledged. First, the sample was limited to high school students in Lumajang Regency, which may not fully represent the diversity of students across different regions in Indonesia. Therefore, caution should be exercised when generalizing the findings to other contexts. The sample size, though sufficient, may not fully capture diverse socioeconomic backgrounds, potentially affecting the generalizability of the results (Fan et al., 2025; Park et al., 2024). Second, the reliance on self-reported data through questionnaires may introduce response bias, as students might provide socially desirable answers or misinterpret questions. Triangulation with qualitative methods, such as interviews or focus group discussions, could help validate the findings in future research. Additionally, the cross-sectional design limits causal inferences, highlighting the need for longitudinal studies to better understand the long-term effects of financial, social, and technological factors on educational decision-making (Kizilcec et al., 2024). Longitudinal research would provide deeper insights into how these factors evolve over time and their sustained impact on students' academic trajectories. Third, although Structural Equation Modeling (SEM-PLS) was employed to assess complex relationships, model limitations such as measurement error and the potential omission of relevant variables (e.g., parental education or institutional quality) should be considered. Future models could integrate more contextual or institutional variables to provide a more comprehensive analysis. Further research should also explore the intersection between financial stability, digital engagement, and psychological well-being to develop comprehensive strategies that support holistic student development. Investigating the role of emerging technologies, such as artificial intelligence and virtual reality, in enhancing educational experiences can also provide valuable insights for future policy interventions.

6. Conclusion

This study underscores the pivotal role of financial stability, social environment, technology integration, and self-confidence in shaping educational decision-making, highlighting that financial security significantly enhances educational opportunities, while social interactions influence technological adoption and engagement. Although digital literacy positively impacts learning, unstructured technology use can hinder academic outcomes, necessitating structured integration strategies. Self-confidence emerges as a critical determinant, surpassing traditional cognitive predictors in influencing educational choices. Policy implications emphasize financial aid expansion, structured digital learning, and psychological support programs to enhance student preparedness. Despite its robust findings, the study acknowledges limitations in sample diversity and causality, calling for future longitudinal research to explore the evolving impact of financial, social, and technological factors on educational trajectories.

7. Ethical Considerations

This study was conducted in accordance with ethical research standards involving human participants. Prior to data collection, ethical approval was obtained from the Research Ethics Committee of Malang State University, under protocol number 20.2.8/UN324.1/LT/2024. Informed consent was obtained from all participants. Since the participants were high school students under the age of 18, parental or guardian consent was also formally acquired through signed permission forms provided by the schools. Additionally, the students were informed about the voluntary nature of their participation, the confidentiality of their responses, and their right to withdraw from the study at any time without penalty. All data collected were anonymized to ensure privacy and confidentiality.

Declarations

Author Contributions. A.P.U.: literature review, conceptualization. E.T.D.R.W.W.: methodology, data analysis. I.M.: review-editing and writing. F.R.: original manuscript preparation. P.A.: literature review. All authors have read and approved the published on the final version of the article.
Conflicts of Interest. The authors declare no conflict of interest.
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