



# THE EFFECT OF FINANCIAL LITERACY AND MATHEMATICAL KNOWLEDGE ON THE INVESTMENT INTEREST OF JAKARTA HIGH SCHOOL STUDENTS MODERATED BY RISK PERCEPTION

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## ABSTRACT

This study examines the influence of financial literacy and mathematical knowledge on investment interest among high school students in Jakarta, moderated by risk perception. The sampling method used was probability random sampling. The study involved 489 high school students from Jakarta. To obtain primary data, questionnaires were distributed online to both public and private high schools in five areas of Jakarta. This study used a quantitative approach, and the data obtained were processed by using the Smart PLS program with a 5% significance level. Empirical evidence shows that financial literacy, mathematical knowledge, and risk perception partially influence the investment interest of Jakarta high school students. Furthermore, it was found that risk perception does not moderate the relationship between financial literacy and investment interest, nor does it moderate the relationship between mathematical knowledge and investment interest. The results show that as financial literacy, mathematical knowledge, and risk perception increase, the investment interest of Jakarta high school students also increases. Conversely, risk perception does not moderate the influence of financial literacy and mathematical knowledge on investment interest of Jakarta high school students. This study provides important insights for the government and schools that by strengthening financial literacy and mathematical knowledge, students' interest in investing increases.

**Keywords:** Financial literacy, investment interest, mathematical understanding, risk perception

## INTRODUCTION

Social media users in Indonesia have reached 185 million people (66.5%) out of a total population of 287 million. Meanwhile, 130 million, or approximately 48 percent of the population, use (Katadata.Co.Id, 2024) gadgets (mobile phones). The most frequently used social media platforms in Indonesia are WhatsApp, Instagram, Facebook, and TikTok. This data demonstrates the widespread use of social media among the public. High school students in Jakarta, as part of this generation, are increasingly familiar with technology and the internet, which indirectly expands their access to various information, including investment. The number of high school students in Jakarta is 194,210, consisting of 92,199 males and 97,391 females (Kemendikbud, 2024). These 194,210 students are spread across both private and public high schools in Jakarta. This number has the potential to become novice investors if they develop an interest in investing during high school and eventually pursue it.

Number of investors and SID (Single Investor Identification). At the end of 2019 increased from 1,619,372 to 2,409,075, or 48.77%. The latest data from the Indonesian Central Securities Depository (KSEI) shows that by the end of December 2024, the number of Indonesian capital market investors reached 14.84 million SID. increased from 12.16 million SIDs at the end of 2023 (KSEI, 2024). Investment growth in Indonesia is increasing annually, as evidenced by the increase in the number of individual investors or single investor identification numbers.





In the context of high school students, understanding investment is becoming increasingly important as technological advances facilitate access to investment platforms. Students are taught financial literacy since high school. Financial literacy is the ability to make informed judgments and take effective actions regarding current and future money management (Purwidiyanti, 2019). Besides that, mathematical concepts are also important. Mathematics offers a strong analytical framework for understanding financial market behavior, identifying investment risks, and developing effective investment strategies using mathematical tools and strategies such as probability models, statistical analysis, and portfolio optimization, so that investors obtain accurate information in making investment decisions and minimize the risks that occur with unstable economic conditions (Hidayat, 2024). Researchers Gracia (2024) state that learning mathematics helps students in decision-making, especially in financial matters. Mathematical skills are the foundation for sound decision-making, effective problem-solving, and innovation in various sectors, including science, technology, economics, and engineering (Arafu, 2023).

Investment interest is an interest that can be linked to financial behavior, which explains how people treat, manage, and use their financial resources (Suryanto, 2017). This student's interest is also influenced by risk perception. No investment is safe in business practices and there is always risk. is an individual's point of view when estimating potential losses in investing (Azmi, 2022). Research on investment interest is still focused on students who have invested (Sumaiya, 2022), focusing on the millennial generation (Berliana, 2022), (Setyorini, 2020) and (Cuandra, 2020) focusing on the younger generation (Nurmalia, 2021). There has been no research that focuses on high school students even though high school students today are already familiar with investment because the Economics curriculum has introduced financial literacy, digital economics and financial technology.

Research by Sumaiya (2022) shows that financial literacy has a significant influence on students' investment intentions. This research aligns with (Fadli, 2020), (Gultom, 2024), and (Gunawan, 2021). When financial literacy was used as a mediating variable, the same results were obtained: a very positive and significant effect on stock investment intention. (Sembel, 2024). Likewise, financial literacy is positioned as a moderating variable between heuristics and herding behavior. Financial literacy does not weaken, but rather strengthens (Wijaya, 2023). Meanwhile, Mutawaly (2029) said that financial literacy does not affect investment interest. This is supported by Ady (2019); Taufiqoh (2019); Wardana (2023)

When risk perception is used as an independent variable, research Hikmah (2024) indicates that risk perception significantly influences investment interest. This is supported by Ramadhani (2024), Ardiana (2020); Nadhila (2024). This contrasts with Ro'fati (2023) the statement that risk perception does not influence investment interest. Similarly, when risk perception is used as a mediating variable, Chen (2022) it is shown that risk perception mediates emotional intelligence and investment decision-making. Based on the explanation above, financial literacy and risk perception still need to be studied with a different target group, namely, high school students.

Research on mathematics in life has been carried out by several researchers, including Telambuana (2021). This study concludes that by studying mathematics, humans develop the skills to make sound decisions in entrepreneurship. Similarly, Barus (2020) mathematical research is applied to economics. Furthermore, Novita Sari (2022) examines the relationship between mathematics and educational philosophy, both of which essentially seek truth based on reason and rationality. These studies conclude that mathematics can serve as a foundation for critical thinking, linking it to other subjects, including investment.

Many have previously studied the influence of financial literacy on investment interest. Similarly, some have studied risk perception as an independent variable on investment interest, but the use of risk perception as a moderating variable is still limited, and there is no evidence of the influence of mathematics on investment interest. This is the urgency of the study the author proposes, entitled "The Effect of Financial Literacy and Mathematical Knowledge on Investment Interest of High School Students in Jakarta, Moderated by Risk Perception."

Thus, the problem is formulated: How does financial literacy influence the investment interests of high school students in Jakarta? How does mathematical knowledge influence the investment interest of high school students in Jakarta? How does risk perception influence the investment interest of high school students in Jakarta? How does financial literacy influence the investment interest of Jakarta students, moderated by risk perception?





How does mathematical knowledge influence the investment interest of Jakarta high school students, moderated by risk perception? Based on the formulated research problems, this research aims to analyzing the influence of financial literacy on investment interest of high school students in Jakarta, analyzing the influence of mathematical knowledge on investment interest of high school students in Jakarta, analyzing the influence of risk perception on investment interest of high school students in Jakarta, analyzing the influence of financial literacy on investment interest of Jakarta students moderated by risk perception, and analyzing the influence of mathematical knowledge on investment interest of Jakarta high school students moderated by risk perception.

## THEORETICAL FRAMEWORK

### Planned Behavior Theory (TPB)

TPB explains that an individual's decision to adopt a particular behavior can be predicted by the intention to form that behavior (Ajzen, 1991). In his latest journal, AiZen (2020) proposed 3 determinants of intention, namely (1) attitude toward the behavior, (2) subjective norm, and (3) perceived behavioral control. In TPB, attitude toward behavior is one of the key factors that influence a person's intention to act. This attitude reflects an individual's evaluation of a particular behavior, which can be positive or negative, based on personal beliefs and experiences. Attitudes toward behavior are formed from an individual's beliefs about the consequences of that action. If someone believes that the behavior will produce positive results, then their attitude tends to be positive, and vice versa. Therefore, understanding this attitude is very important in predicting individual intentions and behavior in various contexts, such as health, environment, and social behavior.

Subjective norms in the TPB refer to an individual's perception of the social pressure they feel to perform or not perform a particular behavior. These norms encompass an individual's beliefs about what is considered right or wrong by those around them, such as family, friends, or coworkers. If individuals perceive that those closest to them support a behavior, they are likely to have a stronger intention to perform it. Conversely, if they perceive that social norm oppose the behavior, their intention to perform it may be reduced, even if they personally believe the behavior is beneficial.

Perceived behavioral control in the TPB refers to an individual's belief in their ability to perform a particular behavior. This component encompasses two main aspects: the individual's ability to perform the behavior and external factors that may influence its implementation. If an individual perceives sufficient control over the situation and the resources necessary to perform an action, their intention to perform it tends to be stronger.

### Investment and Investment Interest

Before explaining the concept of investment interest, let's first explain the definition of investment. In today's economic era, many Indonesians are managing their income to gain future profits through various means, such as investing, investing capital, and so on. Investing is increasingly popular in today's culture. This is evidenced by the presence of several types of investments, such as savings, gold, land, property rights certificates (stocks and bonds), and so on (Tri Cahya, 2019). According to Boughton (2019), Investment is a crucial instrument needed by a country to improve the welfare of its people. There are two prevailing paradigms regarding investment in society: first, investment is viewed as a desire, and second, investment is viewed as a need. When investment is seen as a desire, this happens when someone has excess money, then the money will be saved as savings rather than used for investment (Turley, 2019). In investing a certain amount of funds at a certain planned time with the hope of generating profits or returns, investors need important information to make the right investment choices (Blankespoor, 2020). From the definition above, it can be concluded that investment is the activity of increasing one's assets by investing them in various instruments. Investment is beneficial for the country because it stimulates the economy, and also for investors because it generates profits.

Investment interest is an affective tendency that encourages someone to undertake investment activities and tends to enjoy the differences that arise from these activities after seeing, observing and comparing them, then considering their needs along with the planned efforts and feelings of pleasure (Hasan, 2022), (Siswanti, 2023). Interest indicates a person's intrinsic desire for something, regardless of external influences. On the other hand, investment involves allocating resources with the expectation of future benefits and profits (Wardani, 2020). According to Darmawan (2022) the statement, a person's knowledge of investing tends to increase their confidence and, therefore, their self-confidence in their



investment choices. From this definition, it can be concluded that investment interest is a strong desire for their money to increase in the future.

### Financial Literacy

The results of the 2024 SNLIK (National Survey of Financial Literacy and Inclusion) show that the financial literacy index of the Indonesian population is 65.43 percent, while the financial inclusion index is 75.02 percent. The 2024 SNLIK also measures the level of Islamic financial literacy and inclusion. The results show a financial literacy index of 39.11 percent, while financial inclusion is 12.88 percent (OJK, 2024). The data above shows that the financial literacy index and financial inclusion index are quite high. Why is it necessary to study financial literacy? Many individuals invest, but many fail to achieve profits. This occurs due to their lack of investment knowledge (Sun, 2022). Meanwhile, Brigham (2019) states that financial literacy occurs when individuals can utilize existing resources to achieve desired goals. Financial literacy can help provide an understanding of how to manage finances to achieve a prosperous life in the future.

Definition of financial literacy according to Yamori (2022), financial literacy is an important skill: it is associated with higher participation in the stock market. Financial literacy is often defined as the knowledge, skills, and attitudes needed to make effective financial decisions. According to the Organization for Economic Co-operation and Development (OECD), financial literacy is a combination of awareness, knowledge, skills, attitudes, and behaviors needed to make good financial decisions and achieve individual financial well-being (Klapper, 2020). Meanwhile, Kumar (2022) defines financial literacy as (1) an individual's knowledge and understanding of financial concepts and (2) their skills and abilities to utilize their financial resources optimally by making appropriate decisions based on that knowledge (3) to improve their long-term financial well-being.

Financial literacy is an individual's ability to understand and use financial information. Students with good financial literacy tend to have a better understanding of investment concepts, such as money management, interest, and risk. Improved financial knowledge can increase students' confidence in investing. Research, Rafli (2025) suggests that financial literacy influences investment interest. This is consistent with research (Grace, 2024), (Isnaini, 2023), (Berliana, 2022), and (Sukarno, 2023).

H1: Financial literacy influences the investment interest of high school students in Jakarta

### Mathematical Knowledge

Mathematics instruction should be provided to all students, starting from elementary school, to equip them with logical, analytical, systematic, critical, creative, and collaborative thinking skills (Nurfadilah, 2022). Through mathematical understanding, decision-making becomes easier. Mathematical understanding is a student's ability to grasp and apply mathematical concepts. A strong grasp of mathematics enables students to analyze financial data and make better investment decisions.

Students who are proficient in mathematics are better able to calculate the potential profits and risks of investments. Researchers, Garcia (2024), have found that learning mathematics helps students make decisions, especially financial ones. Their research found a positive correlation between men's mathematical abilities and their ability to calculate interest. Interest is one indicator in calculating investment returns. Research, Ozkale (2022) suggests that mathematics is a tool for financial literacy.

H2: Mathematical understanding influences the investment interest of Jakarta high school students

### Risk Perception

Risk perception is a concept that emphasizes an individual's subjective assessment of the characteristics and intensity of risk and is widely used (An S-H, 2016). Risk perception also includes a person's subjective evaluation and assessment of the likelihood and consequences of an event, which influences their attitudes and decision-making tendencies (Ma Z, 2023). In relation to investment, risk perception is an individual's point of view when estimating potential losses in investing (Azmi, 2022; Anisah, 2023). Aini (2019) stated that the risk measurement indicators include the existence of certain risks, high risks, experiencing losses, not guaranteeing that needs will be met, risky investment decisions, and the belief that investing in the capital market is high risk.

**Risk perception** is how individuals understand and evaluate the risks associated with investment decisions. Risk perception can strengthen or weaken the relationship between financial literacy, mathematical understanding, and investment interest. Students with good risk perception will be better able to assess the risks and rewards of investments, thus influencing their investment decisions. If students have a positive risk perception, the relationship between financial literacy and investment



interest will be stronger, and vice versa. If students have a positive risk perception, the relationship between mathematical knowledge and investment interest will be stronger; conversely, the relationship between investment interest and mathematical knowledge will also be stronger.

Risk perception has a positive influence on investment decisions (Nadhila, 2024). This is in line with the statement (Rafli, 2025). Other researchers, Natahadi (2023), say that indirectly, increasing the level of financial literacy will increase risk perception. and confidence in financial influence, and vice versa. The decline in risk perception will encourage millennial investors to herd (follow what the majority does), and increasing risk perception will make investors more cautious in investing

H3. Risk perception influences the investment interest of high school students in Jakarta

H4. Financial literacy influences the investment interest of Jakarta high school students, moderated by risk perception.

H5. Mathematical knowledge influences the investment interest of Jakarta high school students, moderated by risk perception.

### Financial Literacy and Mathematical Knowledge

As described above, there has been research on the relationship between financial literacy and investment interest. However, there is no research examining mathematical knowledge and investment interest. The only research that (Sakinah, 2024) addresses the impact of literacy and numeracy on savings activity is numeracy literacy. Numeracy literacy (Husna, 2023) is "the fundamental ability to understand, use, and apply mathematical concepts in everyday life." This concept can be the foundation for making financial decisions. Saving and investing have almost the same goal: increasing the value of assets in the future. Recent research, Lusardi (2023) has incorporated mathematical calculations into measuring financial literacy. This means that a person's understanding of financial literacy is also supported by an understanding of mathematics.

### METHOD

This research is quantitative with a survey method to obtain primary data. The purpose of quantitative research is to test the extent to which one or more independent variables influence the dependent variable with the measuring instrument used having been tested for reliability and validity (Karim, 2021). If associated with the objectives, this research is of a verification nature (Muhaimin, 2022). According to the title of the research, it will be known how much influence financial literacy and mathematical knowledge have on the investment interest of Jakarta high school students and how much influence the moderating risk perception has. Through a quantitative approach, researchers can conduct in-depth statistical analysis so that the results can be generalized to the population. The population of this study is Jakarta high school students, both public and private schools. According to *Dapodik* data in 2024, (Kemendikbud, 2024) the number of students was 194,210 people. Because the number is large, a representative sample is needed so that the research results are accurate. The sample is calculated using the Cochran formula (Sugiyono, 2017) ( $n = (Z^2 * p * q) / e^2$ ) and this formula is suitable for large populations.  $n$  = sample,  $Z = 1.96$  (95% confidence level),  $p$  = population proportion 0.5,  $q = 1-p$ ,  $e$  = margin of error 5% (0.05). So,  $n = (1.96^2 * 0.5 * 0.5) / 0.05^2 = 384$ , rounded up to 385 people. The sample size is 385 people, and this is considered representative of the population with a 5% confidence level. This practice is common in research. The operational definitions of the variables can be seen in the following table.

Table 1: Operational Definitions of Variables

Variables	Dimensions	Indicator	Measurement Scale	Source
Financial literacy	Time value of money & Inflation	1. I understand the concept of the time value of money.	Interval scale	(Wijaya, 2023)
		2. I understand the concept of inflation.		
	Risk diversification	3. I understand the concept of risk diversification in my investment		
	Risk and return	4. I understand the concept of risk and p return my investment .		

		5. I don't understand the concept of risk and return on my investment.		
Risk Perception	Risk perception and opportunity risk	1. I associate the word "risk" with the idea of "opportunity"	Interval scale	(Nadhila, 2024)
	Acceptance and personal gain	2. The risk seems more acceptable if I can get the potential personal gain I expect.		
	Long-term growth orientation	3. I want to earn more than my current personal income in the long term.		
	High income opportunities	4. I am looking for a business and job with higher income.		
		5. I avoid businesses and jobs with higher incomes.		

Variables	Dimensions	Indicator	Measurement Scale	Source
Mathematical Knowledge	Critical thinking	1. With my understanding of mathematic I can think critically.	Interval scale	(Nufadillah, 2022)
	Benefits and Risks	2. With my understanding of mathematic I can calculate the profit or loss if I invest.		(Garcia, 2024)
	Financial problems	3. With an understanding of mathematics, I understand financial matters, including investments, better.		(Ozkale, 2022)
		4. Understanding mathematics does not help me in understanding financial and investment issues.		
Investment interest	Investment Planning	1. I plan to invest in the future.	Interval Scale	(Thai, 2017)
		2. I want to invest in the future.		
	Investment Intention	3. I may make investments in the future.		
		4. I probably won't make any investments in the future.		
	Possibility of investment implementation			

The research variables are as follows: The independent variables include financial literacy and mathematical understanding, while the dependent variable is investment interest. In addition, a moderating variable, namely risk perception, is also used. The research data is primary data. Data were obtained directly from respondents through a questionnaire. The questionnaire was compiled based on indicators (Sekaran, 2016). The questionnaire was created in the form of a Google form and distributed to high school students in Jakarta through the Jakarta Economics Teachers' Forum (MGMP Ekonomi). This data collection will support the quality and credibility of the research because the data is primary.

The data was processed using SEM PLS (Structural Equation Modeling) with a Partial Least Squares approach. SEM PLS was chosen for three reasons: First, this study uses multivariate analysis with four variables. Second, these variables do not have to be normally distributed. Third, SEM-PLS

can distinguish between measurement and structural models and account for error (Henseler, 2015). Another reason is that the study used a moderating effect. (Hair, 2017). Reliability and validity are tested with the outer model, while the determinant coefficient and hypothesis test are tested with the inner model (Wilson, 2019). The analysis stages include: Outer model: Measurement to see validity and reliability, and Inner model: Testing the coefficient of determination, path coefficient, hypothesis test, T test, F test, and analysis of moderation effects.

## FINDINGS AND DISCUSSION

### Respondent Demographics

Data for this study were collected through a structured questionnaire. A total of 489 high school students in Jakarta responded to the questionnaire. All students answered the questions completely. If someone answered two options, the first option was used. The following are the demographics of the respondents:

Table 2. Respondent Demographics

No	Information	Differentiator	%
1	Gender	Man	37.42
		Woman	62.58
2	Age	15 years	9.41
		16 years	19.02
		27 years old	36.40
		18 years	32.72
		Over 18 years old	2.45
3	High School Origin	Country	80.98
		Private	19.02
4	Region	Central Jakarta	28.22
		North Jakarta	7.16
		East Jakarta	18.81
		West Jakarta	33.74
		South Jakarta	12.07
5	Class	X	25.77
		XI	30.88
		XII	43.35
6	Monthly pocket money	0-500,000	75.20
		500,000-1,000,000	18.03
		Above 1,000,000	6.76
7	Major	Science	7.98
		Social Studies	25.21
		Subjects (optional)	66.87

Table 3. Descriptive Statistics

Variables	Obs	Mean	Std. Dev	Min	Max
LK1	489	3,742	1,003	1	5
LK2	489	3,865	0.971	1	5
LK3	489	3,562	1,034	1	5
LK4	489	3,489	1,031	1	5
LK5	489	3,088	1,206	1	5
PM1	489	3,804	0.988	1	5
PM2	489	3,965	0.970	1	5
PM3	489	3,847	0.982	1	5
PM4	489	3,278	1,222	1	5
RP1	489	3,650	0.952	1	5

RP2	489	3,746	0.919	1	5
RP3	489	4,227	0.870	1	5
RP4	489	4,194	0.884	1	5
RP5	489	3,292	1,381	1	5
MI1	489	3,202	1,463	1	5
MI2	489	4,127	0.962	1	5
MI3	489	4,176	0.928	1	5
MI4	489	4,061	0.991	1	5

In analyzing the data, this study used a two-step approach to test the measurable variables that describe four variables. The first step involves analyzing the measurement model, while the second step tests the hypothesis of structural relationships among the variable constructs. The purpose of this two-step approach is to assess the reliability and validity of the constructs before they are used in the full model (Demir, 2015). After processing the data with Smart PLS 3.0, the following results were obtained:

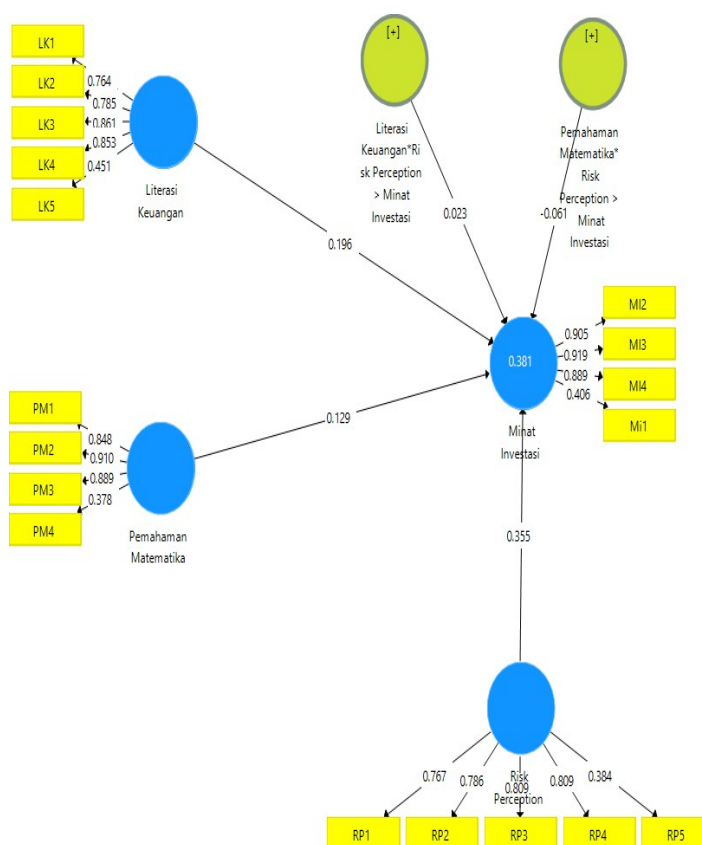


Figure 1. PLS Test Model Results

## Reliability and Validity Measurement

Table 4. Loading Factor

Construct	Items	Loadings
Financial Literacy	LK1	0.764
	LK2	0.785
	LK3	0.861
	LK4	0.853
	LK5	0.451
Mathematical Understanding	PM1	0.848
	PM2	0.910
	PM3	0.889
	PM4	0.378
Risk Perception	RP1	0.767
	RP2	0.786
	RP3	0.809
	RP4	0.809
	RP5	0.384
Investment Interest	MI1	0.905
	MI2	0.919
	MI3	0.889
	MI4	0.406

LK: Financial Literacy PM: Mathematical Knowledge RP: Risk Perception MI: Investment Interest

Figure 1 shows that the loading factors for Lk5, PM4, RP5, and MI4 are below 0.50. Convergent validity, discriminant validity, and reliability are calculated below. Convergent validity is also assessed using the Average Variance Extracted (AVE) value. with minimum limit from 0.50. Based on Table 5, all AVE values > 0.50 so it can be concluded that the measurement has met the convergent validity criteria. and declared ideal.

Table 5. Average Variance Extracted Value (AVE)

Variables	Average Variance Extracted (AVE)
Financial Literacy	0.574
Mathematical Understanding	0.620
Risk Perception	0.532
Investment Interest	0.655

The second validity test was carried out through the t - discriminant validity test. Validity fulfilled If square root coefficient track or Fornell Lacker Ideally, it is greater than the correlation coefficient between the independent variables. Validity of the discriminant said to be good If he owns coefficient mark > 0.70. Based on Table 6, It is known that all Fornell Larcker values are > 0.70. Thus, it can be concluded that discriminant validity is met.

Table 6: Discriminant Validity

	Financial literacy	Mathematical understanding	Risk Perception	Interest investment
Financial Literacy	<b>0.758</b>			
Mathematical Understanding	0.575	<b>0.787</b>		
Risk Perception	0.586	0.623	<b>0.730</b>	
Investment Interest	0.494	0.477	0.576	<b>0.809</b>

Questionnaire reliable If meets Construct Reliability and Validity: Cronbach's Alpha and Composite Reliability  $> 0.70$ . Reliability testing was conducted to measure the consistency of respondents' answers. Table 7 shows Construct Reliability and Validity: Cronbach's Alpha and Composite Reliability have all coefficients above 0.70. Respondents' answers are said to be consistent and the research questionnaire was declared reliable.

Table 7. Reliability Test

Variables	Cronbach Alpha	Composite Reliability
Financial literacy	0.805	0.866
Mathematical Understanding	0.776	0.857
Risk Perception	0.764	0.844
Investment Interest	0.795	0.876

If we look at Tables 5, 6, and 7, all measuring instruments used to obtain data are valid and reliable, but because the LK5, PM4, RP5, and MI 4 indicators are below 0.50, they must be removed from the research instrument (Ghozali, 2015). After removing the four indicators, the image of the PLS test model results is as follows:

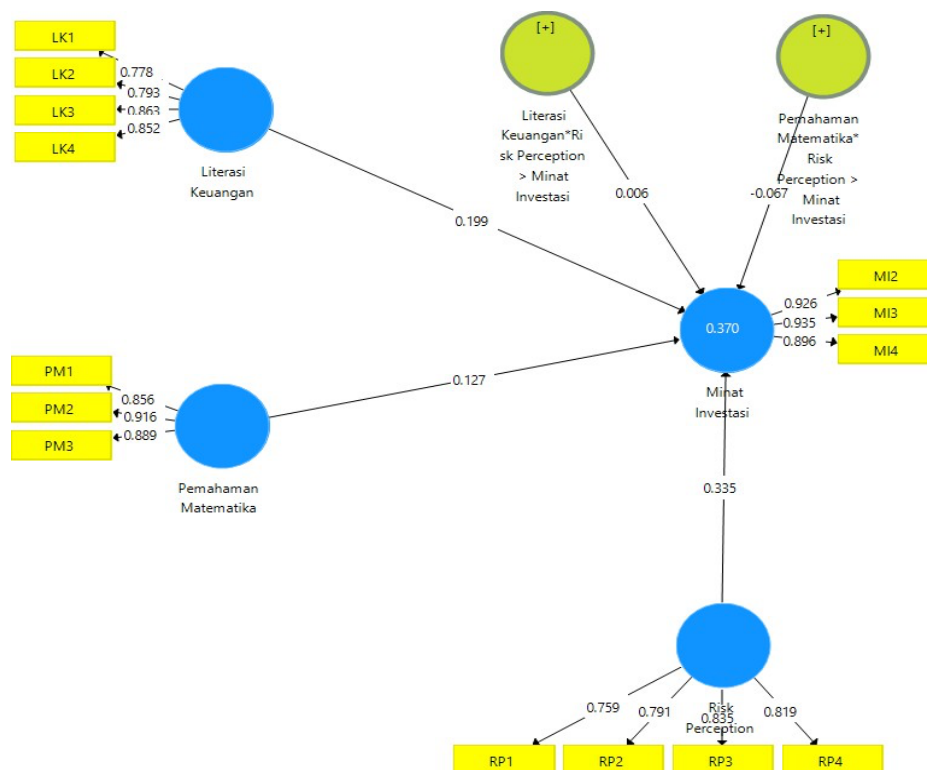


Figure 2: PLS Test Model Results (after elimination)

Next, the Average Variance Extracted (AVE), Discriminant Validity, and Reliability Test will be displayed successively:

Table 8: Average Variance Extracted (AVE)

Variables	Average Variance Extracted (AVE)
Financial Literacy	0.676
Mathematical Understanding	0.787
Risk Perception	0.642
Investment Interest	0.845

Table 9. Discriminant Validity

	Financial literacy	Mathematical understanding	Risk Perception	Interest investment
Financial Literacy	<b>0.822</b>			
Mathematical Understanding	0.575	<b>0.877</b>		
Risk Perception	0.569	0.616	<b>0.801</b>	
Investment Interest	0.484	0.468	0.562	<b>0.919</b>

Table 10. Reliability Test

Variables	Cronbach Alpha	Composite Reliability
Financial literacy	0.839	0.893
Mathematical Understanding	0.865	0.917
Risk Perception	0.816	0.878
Investment Interest	0.908	0.942

From Table 8, all AVE figures are above 0.5, which means they are valid. Likewise, from Table 9, all Fornell Larcker values are  $> 0.70$ , which means discriminant validity is met. From Table 10, all Construct Reliability and Validity coefficient figures: Cronbach's Alpha and Composite Reliability above 0.70, it is said to be reliable. It can be concluded that the measurement tool in this study is valid and reliable (Ghozali, 2016).

Table 11. R Square and R. Square Adjusted

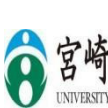
Investment Interest	R Square	R Square Adjusted
	0.370	0.364

Based on Table 11, the adjusted R<sup>2</sup> value of 0.364 or 36.4 % shows that the independent variables together, namely financial literacy, mathematical understanding, and risk perception contributes approximately 36.4% of the variation in investment interest, while the remaining 63.6 % is contributed by other variables not included in the research model.

### Hypothesis Testing

Table 12. Path Coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values	Decision
Financial Literacy -> Investment Interest	0.199	0.201	0.048	4,115	<b>0,000</b>	<b>Accepted</b>
Mathematical Understanding -> Investment Interest	0.127	0.125	0.057	2,232	<b>0.026</b>	<b>Accepted</b>
Risk Perception -> Investment Interest	0.335	0.335	0.062	5,366	<b>0,000</b>	<b>Accepted</b>
Financial Literacy* Risk Perception > Investment Interest -> Investment Interest	0.006	0.010	0.046	0.138	<b>0.890</b>	<b>Rejected</b>
Mathematical Understanding* Risk Perception > Investment Interest -> Investment Interest	-0.067	-0.067	0.044	1,544	<b>0.123</b>	<b>Rejected</b>



## Discussion

The results of the study indicate that three of the five formulated hypotheses were accepted, while two were rejected. Based on Table 12, the hypotheses are explained below:

Hypothesis 1: In Table 12, the coefficient value for financial literacy is 0.199, while the p-value is 0.000 at a significance level of 5%. Because the p-value is less than 0.005, the research hypothesis is accepted, namely that financial literacy has a positive and significant effect on investment interest. A one percent increase in financial literacy levels will increase to approximately 0.199, or 19.9

%, in investment interest among Jakarta high school students. This means that when Jakarta high school students have information about financial literacy, such as stock prices, high returns, and macroeconomic variables like inflation, they will be interested in investing, and vice versa. The results of this study are in line with (Tri Utari, 2022) (Auliana, 2024) (Gunawan W. K., 2021). (Ratnawati, 2022)

Hypothesis 2: From Table 12, it is known that the coefficient of 0.127 for mathematical knowledge with a p-value of 0.026 at a significance level of 5%. Because the P-value of 0.026 is smaller than 0.05, the research hypothesis is accepted, namely that there is a positive and significant influence on the investment interest of Jakarta high school students. A 1% increase in mathematical knowledge will increase the investment interest of Jakarta high school students by 12.7%. From this, it can be understood that every increase in mathematical knowledge, especially related to finance (interest, net present value, future value) and investment, increases student interest. This is in line with the statement that certain real-life situations can be used as objects of mathematical learning (Darhim, 2004). Likewise, Nurhaswinda (2025) states that in financial management, mathematical logic helps budget planning, investment decision-making, and risk management.

Hypothesis 3: Table 12 shows a coefficient of 0.355 for risk perception with a p-value of 0.000 at a significance level of 5%. Since the p-value of 0.000 is less than 0.05, the research hypothesis is accepted, namely that risk perception has a positive and significant effect on investment interest among high school students in Jakarta. A 1% increase in risk perception will increase investment interest among Jakarta students by 35.5%. This research result is in line with (Handini, 2020), (Titin Eka Ardian, 2020), (Yanti, 2024), (Anggraeni C. A., 2024) (Rafli Y. A., 2025), and (Teker, 2023)

Hypothesis 4: In Table 12, the risk perception coefficient is 0.06, and the p-value is 0.890 at a significance level of 5%. The p-value of 0.890 exceeds 0.005, so the research hypothesis is rejected, meaning that risk perception does not moderate the influence of financial literacy on investment interest. If students are interested in investing due to financial literacy, risk perception does not hinder their interest in investing. The study Nurmala (2021) found that risk perception had no significant effect on interest in investing (stocks), which is consistent with research (Arshad, 2019). Regarding moderation, the study by Haryanto (2022) stated that risk perception did not moderate the independent variable and investment decisions. Likewise, it stated that risk perception played no role between financial literacy and investment interest (Nauman Sadiq, 2018).

Hypothesis 5: In Table 12, the risk perception coefficient is -0.067 with a p-value of 0.123 at a significance level of 5%. The p-value of 0.123 is greater than 0.05, so the research hypothesis is rejected, meaning that risk perception does not moderate the influence of mathematical knowledge on investment interest. If students are attracted to investing because of their understanding of mathematics, risk perception doesn't hinder their interest in investing. A strong understanding of mathematics makes students confident in their decisions and interests, preventing risk perception from influencing them.

So, it can be said that financial literacy, mathematical knowledge, and risk perception partially influence investment interest of Jakarta high school students, and risk perception does not moderate the effect of financial literacy on investment interest, nor does it moderate the effect of mathematical knowledge on investment interest. This study further tests the effect of exogenous variables on endogenous variables using  $f^2$ . According to Cohen (1988), the  $f^2$  values of 0.02, 0.15, and 0.35 represent small, medium, and large effects, respectively. The effect of financial literacy on investment interest is 0.199. This means that financial literacy has a moderate effect on the investment interest of Jakarta high school students. Similarly, mathematical knowledge has a moderate influence on investment decisions, with an influence of 0.122 moderate, risk perception has a large influence on the investment interest of Jakarta high school students, namely 0.355.



## Conclusion

Financial literacy influences the investment interest of Jakarta high school students. Mathematical knowledge also influences the investment interest of Jakarta high school students. In addition, risk perception influences the investment interest of high school students in Jakarta. However, risk perception does not moderate the influence of financial literacy on the investment interest of Jakarta high school students, and risk perception also does not moderate the influence of mathematical knowledge on the investment interest of Jakarta high school students.

However, this research has several limitations. First, the result of the R square is 34.4%, while other factors account for 65.6%, meaning that more than 50% of the influence on investment interest comes from variables outside this research. Second, this study only uses a few variables, namely two independent variables, one moderating variable, and one dependent variable, even though there are still many variables that need to be studied. Third, the respondents were homogeneous and came from one youth community, namely high school students; therefore, the results cannot be generalized to other age groups.

The suggestions in this research are aimed at several parties. For educational institutions, it is recommended that financial literacy and the application of mathematics to business concepts be continuously improved so that Jakarta high school students in the coming years will be interested in investing and realize it in real life. For application development companies, entrepreneurs in the app industry can design investment simulation models specifically to help high school students become accustomed to investing. App companies can then create investment applications tailored to high school students. For next researchers, future research could examine the implications of investment interest, including whether students with strong investment interest directly implement it in the real world. Furthermore, research could be expanded to include vocational high schools (SMK) or high schools across Indonesia and incorporate new variables.

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