

RATIONALITY OF STUDENTS IN INVESTING

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ABSTRACT

This research aims to assess rational or irrational student investment decision actions through the influence of financial literacy, socio-economic factors and financial technology students of the Faculty of Economics and Business, State University of Malang on investment decisions. This study used students of the Faculty of Economics and Business, State University of Malang class of 2019 as the population using the purposive sampling method so that 110 samples were obtained. Data collection techniques in this study used a Google form questionnaire. The collected data were analyzed using the path analysis method with SmartPLS software. The results of the analysis show that financial literacy and socio-economic factors have a significant effect on investment decisions, while financial technology has no effect on investment decisions.

Keywords: financial literacy, socioeconomic factors, financial technology, investment decisions, traditional financial theory, behavioral finance

INTRODUCTION

Rapid economic and technological progress has brought many changes that provide convenience in today's business world. Forms of economic development in the business world can be in the form of financial products and instruments. Investment is one of the financial products that has a significant impact on life in the future. According to OJK, investment is a form of investment in the long term with the aim of procuring complete assets, purchasing shares and other securities to gain profit. There are several types of investments that can be selected with their respective levels of risk. Based on data from the Indonesian Central Securities Depository (KSEI), the number of capital market investors as of January 2023 was recorded at 10,481,044 million people. This figure has increased by 1.65% compared to the 2022 period.

Table 1. Distribution of investors

Age	Proportion	Total Assets (Rp T)
<30	58.55%	IDR 53.73
31–40	22.63%	IDR 106.76
41–50	10.95%	IDR 166.59
51–60	5.25%	IDR 242.07
> 60	2.79%	IDR 896.79

Source : KSEI as of January 2023

Judging from their age, young investors at the age of less than 30 years are very dominant and continue to experience an increase with a proportion of 58.55% and total assets reaching IDR 52.36T. This age is the dominance of the millennial generation, which is the age of students entering into it. When determining an investment, usually investors will be faced with several considerations that will influence their actions in making decisions. These considerations may consist of, company factors, social economy and others. The existence of these considerations can influence the actions of an investor in making the best investment decisions. The actions taken by investors consist of rational actions, but there are some investors who act irrationally. Rational action is defined as someone's thinking action which is based on reason which can then be proven by existing data and facts. Financial literacy owned by an investor can reflect investment decision making that has a rational attitude. (Ariani et al., 2016). Financial literacy is the initial foundation for

individuals in financial management. The level of financial literacy in 2019 was 38.03%, then in 2022 it increased to 49.68% (OJK, 2022). There will be a significant increase in 2022, an improved level of financial literacy can assist individuals in managing their finances, including making investment decisions. Financial literacy has an important place in making investment decisions regarding risky investment paths (Prasad et al., 2021). Individuals can determine the type of investment with different levels of risk according to their needs.

Meanwhile, irrational actions are individual thinking actions that are not based on reason, but there are other factors. Psychological and demographic factors can be a source of irrational actions (Ariani et al., 2016). In terms of psychological factors, socio-economic factors become part of the attitude of decision making by individuals. Socioeconomic factors such as income, income level will influence investment decision making (Prasad et al., 2021). Income levels that tend to be high must be balanced with an attitude of financial management and responsibility, because this income can make some people experience financial difficulties (Shinta & Lestari, 2019). Family structure and social environment, age, and religious and political views influence investment decisions (Prasad et al., 2021). A social environment that displays an excessive lifestyle will encourage individuals to make impulsive purchases without forethought. (Dewi and Purbawangsa, 2018).

Actions in investing must of course be balanced with knowledge about investing that is good and right with the aim of being able to avoid losses or failure when deciding to invest, especially if investing through financial technology (fintech) which facilitates and speeds up investment. Currently, investors are facilitated by the availability of financial instruments. provided by financial technology with a wide selection of investment types. This is proof that financial technology is currently growing rapidly so as to provide convenience and comfort for individuals. By utilizing applications and websites that can be accessed online, making financial technology declared a progressive business model with flexibility, efficiency and security (Fadila et al., 2022).

Research conducted by Landang et al., (2021) says that financial behavior, financial literacy and income levels simultaneously has a significant influence on the investment decisions of students of the Faculty of Economics, Mahasaraswati Denpasar University. Likewise in the results of research conducted by Putri & Rahyuda, (2017) stated that financial literacy influences investment decision making. In Junianto & Kohardinata's research, (2021) argues that financial technology has a significant impact on investment decisions. However, these results differ from research conducted by Wahyudi et al., (2020) which states that financial technology does not have a significant impact on investment decisions. From previous research there are differences in the results of the factors that influence investment decisions. So it is necessary to do research related to the influence of financial literacy, socio-economic factors and financial technology on investment decisions in students of the Faculty of Economics and Business, State University of Malang.

Based on the description and previous research above, although this study has several variables in common, there are still inconsistencies from the relevant results based on the three factors that are thought to influence the above investment decisions. Therefore, researchers want to find out more about the investment decisions taken by individual investors in students of the Faculty of Economics and Business, State University of Malang. Including examining the effect of financial literacy, socio-economic factors and financial technology on investors' investment decisions and assessing investors' rational and irrational attitudes from these factors.

LITERATURE REVIEW

Traditional Financial Theory

Traditional financial theory assumes that investors are rational, they have the ability to analyze and process information appropriately so as to get maximum portfolio choices. (Sukandani et al., 2013). This theory assumes that the market will always be in an efficient

condition. The proposition that has dominated finance for more than 30 years is the efficient market hypothesis (EMH). There are three basic theoretical arguments on which EMH is based. The first and most significant is that investors are rational and the implication is that securities are valued rationally. The second is based on the idea that everyone carefully considers all available information before making an investment decision. The third principle is that decision makers will always pursue their own interests (Maheran et al., 2009). Traditional finance considers humans to be in the context of *homo economicus*, a simple model of human economic behavior based on the principle of perfect individual interests, full of rationality, and having complete information, which then influences individual economic decisions. (Darmayanti et al., 2022)

Behavioral Finance

Behavioral Finance is a theory that focuses on the influence of psychological factors of investors in making financial decisions. This theory also assumes that the market for investors in making a decision is in a market condition that is full of uncertainty. The concept of behavioral finance will take into account the type of investor in view of the risks associated with investment decisions. (Sukandani et al., 2013). In this theory of behavioral finance, it states that in deciding an action, it certainly involves the nature, emotions, and preferences that are inherent in humans as social beings. The influence of psychological factors when making investment decisions will cause investors to act irrationally and not as predicted. Therefore, in making investment decisions this can be based on the nature,

Financial Literacy

Financial literacy has an important role in achieving the welfare of one's life. The people's standard of living will continue to increase if it is supported by financial literacy and has adequate knowledge and application of ways to manage finances (Lestari et al., 2022). Financial decisions including investments that are based on planning, management and aligned knowledge can reduce risk in investment decisions. Therefore, increasing financial literacy shows that individuals are getting better at making investment decisions. In line with research conducted by Fadila et al (2022) which confirmed the positive effect of financial literacy on investment decisions in millennial entrepreneurs which can be seen from financial knowledge, confidence and good investor skills. However, different research results were put forward by Pradhana (2018) which stated that there was no effect of financial literacy on an investor's investment decisions. So, good financial literacy will influence investment decision making. Therefore, the first hypothesis is proposed:

H1: Financial Literacy has a significant positive effect on Investment Decisions

Socioeconomic Factors

Socio-economic conditions are a reflection of the existence of certain layers of social groups, such as families, organizations and study groups. The social group will respond to something in a different way between individuals, they tend to try to realize expectations for their community. Socio-economic conditions as a reflection of certain social layers can be measured using several variables (Widayat, 2010). One of the variables that can be used is economic variables, such as income. According to Atmaningrum Siska et al., (2021) someone with a high and greater income tends to have the opportunity to deepen and expand their knowledge of financial management and increase their wealth through investment activities in various types of investments.

Not only based on income, according to Prasad et al., (2021) government policies, economic stability in the market, innovation in banking and financial services as well as increased levels of income are socio-economic factors. So it can be interpreted that socio-economic factors as factors that also influence an individual's investment decision. In line with research conducted by Prasad et al (2021) that socio-economic factors have a fairly strong impact on investment decisions for both men and women, giving rise to a positive influence. Therefore, the second hypothesis is proposed:

H2: Socio-economic factors have a significant positive effect on investment decisions

Financial Technology

In maximizing the use of financial instruments and products, knowledge and understanding of each individual is required so that the individual can make the right decision. (Safyani, et al. 2020). The presence of fintech as a financial product will increase investment decisions made by potential investors (Restianti et al., 2022). This is in line with research conducted by Junianto and Kohardinata (2021) which says that fintech is very supportive for someone to make investment decisions more easily due to easier access to the latest information and applications related to investment. Therefore, the third hypothesis is proposed:

H3: Financial Technology has a significant positive effect on Investment Decisions

Investation decision

Investment decisions are activities carried out by investing in certain assets to influence the value of the company and get profits in the future. Investor investment decisions project their intention to choose a better type of investment. This intention can be reflected in estimated profits which can be determined using financial literacy (Suresh G, 2021). In acting and interpreting information to make decisions, investors are often confronted by many factors including psychological and behavioral. This will change the thoughts and feelings of investors from rational to irrational (Ikram, 2016).

METHODS

Research design

Researchers used quantitative methods in this study. The quantitative method is a type of analytical technique based on raw data which aims to analyze the questions you want to know (Al Arif & Imsar, 2022). This study will explain the factors of investment decisions in students of the Faculty of Economics and Business, State University of Malang. This study will examine how financial literacy, socio-economic factors and financial technology are independent variables and investment decisions are the dependent variable. The data source used is primary data obtained from the results of distributing questionnaires to student respondents from the Faculty of Economics and Business, State University of Malang class of 2019.

Data Types and Sources

The data used in this research is primary data. Primary data is data obtained directly from respondents and given to data collectors (Sugiyono, 2015). In this study the data collection process used a questionnaire method which was distributed via google form.

Population and Sample

The population to be used is 542 students of the Faculty of Economics and Business, State University of Malang, class of 2019. The sample method in this research is purposive sampling where respondents must agree to the conditions set by the researcher. The sample criteria for this research are active students of the Faculty of Economics and Business class of 2019 who have had or have had investments. Determination of the sample in this study using the Slovin formula. The following calculations use the slovin formula.

$$\begin{aligned}
 n &= \frac{N}{1 + Ne^2} \\
 &= \frac{542}{1 + (542)(0,001)} \\
 &= \frac{542}{6,42} \\
 &= 84
 \end{aligned}$$

From these results a sample of 84 respondents was obtained, which was rounded up to 110 by the researcher to obtain more tangible results.

Data analysis method

This study uses descriptive statistical data analysis to explain the distribution of respondent data and path analysis with the help of SmartPLS software. Path analysis is a technique for analyzing causal relationships between variables that occur in multiple regression, to see whether the independent variables affect the dependent variable directly or indirectly. PLS (*Partial least squares*) is a multivariate statistical technique that can handle many variables response as well as variable explanatory at once. PLS serves as a tool to analyze the relationship between interrelated variables in the path analysis model. This method was chosen by the researcher because it is not based on many assumptions or conditions, such as normality test and multicollinearity. Measurement in PLS consists of evaluating the measurement model (outer model), evaluating the structural model (inner model).

Measurement Model (Outer Model)

The outer model test is used to see the relationship between each indicator and its latent variables or to see the validity and reliability of the model. Tests performed on the outer model, namely:

Convergent Validity. The value of convergent validity is seen through the relationship between the indicator items and their construct values contained in the outer loading. The value of the reflective measure of each indicator is said to be highly correlated if it has a value of more than 0.70 with the construct you want to measure. But at the scale development stage, the loading value is 0.50 to 0.60 indicating that the hypothesis is still acceptable (Ghozali & Latan, 2015).

Discriminant Validity. This value is seen through cross loading which aims to see whether the construct has sufficient discriminant by doing a comparison between the loading value on the intended construct must have a loading value greater than the value of the other constructs.

Average Variance Extracted (AVE). The AVE value must be greater than 0.5 (Ghozali & Latan, 2015).

Composite Reliability. The value of composite reliability > 0.7 indicates that the construct has high reliability. Reliability is strengthened by looking at the Cronbach Alpha value. Cronbach alpha value > 0.7 in all constructs indicates stronger reliability.

Structural Model (Inner Model)

The structural model or inner model is used to predict the causality relationship between latent variables.

Testing of the structural model (Inner Model) is carried out through the R-square test by looking at the R-Square value.

The test is carried out by looking at the significance of the parameter coefficient values and the statistical significance value of the t statistic in the Algorithm Bootstrapping report - Path Coefficients. The t-statistic value is greater than the t-table and significance (t-table significance 5% = 1.96) or the p-value < 0.05 .

RESULTS

Descriptive Analysis Results

The results of data collection through a questionnaire which was distributed to 110 students of the Faculty of Economics and Business, State University of Malang, 2019. The following is a table of descriptive analysis of the characteristics of the respondents.

Based on table 2, it can be seen that the 110 individual investors who became the research sample were dominated by female individual investors at 58.1% and men at 41.9%. Judging from the majors of the respondents, it was dominated by development economics majors with 54%, followed by management with 30% and accounting with 16%. Furthermore, in the income category of respondents, it was dominated by respondents with income $< \text{Rp. } 1,000,000$, which amounted to 48%.

Table.2 Distribution of Respondents

Variable		Frequency	Percentage
Gender	Man	46	41.9%
	Woman	64	58.1%
Major	Management	33	30%
	Accountancy	18	16%
	Economic development	59	54%
Income	<IDR 1,000,000	53	48%
	IDR 1,000,001 - IDR 1,500,000	32	29%
	IDR 1,500,001 - IDR 2,000,000	12	11%
	> IDR 2,000,000	13	12%
Investment Length	<1 year	57	52%
	1-3 years old	42	38%
	>3 years	11	10%

Source: Data processed by researchers (2023)

Validity test

Validity test using Convergent Validity can be known through the outer loading value on each construct indicator. The outer loading value will be presented in Table 3

Table 3. Outer Loading Results

	FINTECH	FSE	KI	LK
FINTECH1	0.727			
FINTECH2	0.824			
FINTECH3	0.829			
FINTECH4	0.750			
FINTECH5	0.719			
FINTECH6	0.814			
FINTECH7	0.808			
FSE1		0.715		
FSE2		0.781		
FSE3		0.774		
FSE4		0.788		
FSE5		0.788		
FSE6		0.657		
FSE7		0.619		
KI1			0.757	
KI2			0.804	
KI3			0.784	
KI4			0.765	
KI5			0.783	
KI6			0.776	
KI7			0.749	
KI8			0.789	
LK1				0.776
LK2				0.751

	FINTECH	FSE	KI	LK
LK3				0.764
LK4				0.781
LK5				0.761
LK6				0.813
LK7				0.797

Source: Data processed

Based on table 3 above, the outer loading value of all variables shows > 0.60 which can be interpreted that all variables are declared valid and suitable for use (Hair et al, 2019).

Table 4. AVEs

	Average variance extracted (AVE)
FINTECH	0.613
FSE	0.540
KI	0.602
LK	0.605

Source: Data processed

Another convergent validity test is known through the Average Variance Extracted (AVE) value. Based on table 4 above, it shows that the AVE acquisition value for each variable has met the criteria, namely > 0.50 and is declared valid. So from these results it was concluded that the variables of financial literacy, socio-economic factors, financial technology and investment decisions in this study were declared valid in the convergent.

Table 5. Cross Loading

	FINTECH	FSE	KI	LK
FINTECH1	0.727	0.472	0.266	0.188
FINTECH2	0.824	0.500	0.440	0.417
FINTECH3	0.829	0.532	0.433	0.361
FINTECH4	0.750	0.531	0.392	0.317
FINTECH5	0.719	0.608	0.355	0.267
FINTECH6	0.814	0.655	0.469	0.357
FINTECH7	0.808	0.631	0.586	0.390
FSE1	0.315	0.715	0.297	0.288
FSE2	0.552	0.781	0.381	0.372
FSE3	0.389	0.774	0.379	0.344
FSE4	0.484	0.788	0.357	0.220
FSE5	0.456	0.788	0.458	0.275
FSE6	0.396	0.657	0.283	0.312
FSE7	0.828	0.619	0.619	0.405
KI1	0.502	0.466	0.757	0.318
KI2	0.449	0.515	0.804	0.447
KI3	0.479	0.450	0.784	0.329
KI4	0.279	0.370	0.765	0.328
KI5	0.420	0.415	0.783	0.344
KI6	0.413	0.406	0.776	0.380

	FINTECH	FSE	KI	LK
KI7	0.459	0.550	0.749	0.286
KI8	0.424	0.418	0.789	0.360
LK1	0.308	0.342	0.406	0.776
LK2	0.335	0.372	0.299	0.751
LK3	0.251	0.295	0.288	0.764
LK4	0.302	0.331	0.351	0.781
LK5	0.289	0.326	0.352	0.761
LK6	0.421	0.376	0.333	0.813
LK7	0.435	0.386	0.397	0.797

Source: Data processed

Based on table 5, it can be seen that the comparison of the Cross Loading values for each construct variable in the indicator has a higher value than the indicators of other construct variables. This already meets the criteria and it can be concluded that each construct variable indicator has a good Discriminant Validity value.

Reliability Test

Reliability test aims to prove the consistency, accuracy, and accuracy of the instrument in measuring constructs. To measure reliability, it can be done by looking at the value of Cronbach's Alpha or Composite Reliability which will be explained in Table 6.

Table 6. Cronbach's Alpha and Composite Reliability

	Cronbach's alpha	Composite reliability (rho_c)
FINTECH	0.896	0.917
FSE	0.860	0.891
KI	0.906	0.924
LK	0.892	0.915

Source: Data processed

Based on table 6, it is known that each variable used has a Cronbach's Alpha value and Composite Reliability > 0.70. This shows that each variable has met the criteria for Cronbach's Alpha and Composite Reliability scores in testing reliability, so it can be concluded that all variables in the study have a high level of reliability.

R-Square

In evaluating the inner model, it is necessary to look at the magnitude of the R-Square which is a goodness-fit model test or alignment test. The greater the R-Square value indicates that the greater the influence of certain independent variables on the dependent variable.

Table 7. R-Square

	R-square	R-square adjusted
KI	0.413	0.396

Source: Data processed

The R-Square value of the investment decision variable is 0.413 or the equivalent of 41%. The results show that the variables of financial literacy, socio-economic factors and financial technology influence by contributing to the investment decision variable by 41%, while the remaining 59% can be influenced by other variables not explained in this study. The R-Square value is included in the moderate or moderate influential category.

Hypothesis testing

The Estimate for Path Coefficients in the evaluation of the inner model is used for hypothesis testing, by looking at the effect between variables and using the bootstrapping method to determine the value of the parameter coefficient and the significance value of the t statistic. The results of bootstrapping in this study are as follows:

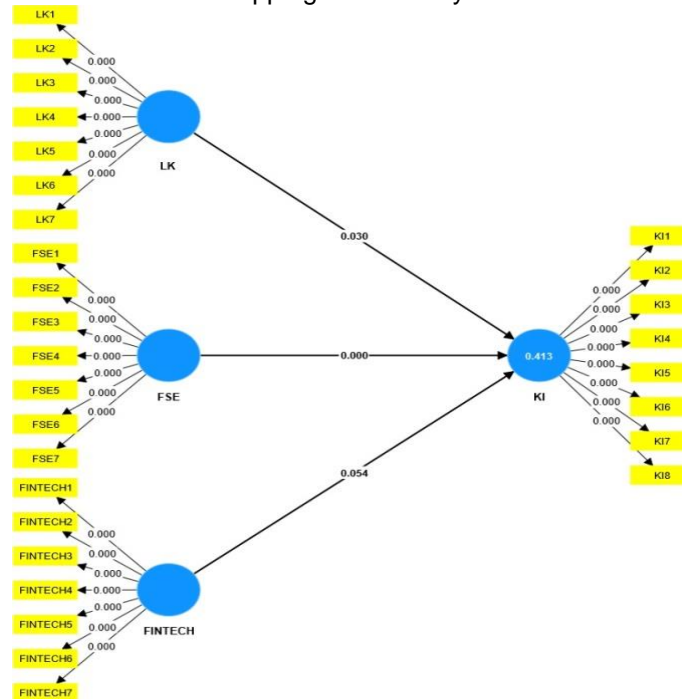


Figure 1. Bootstrapping results
Source: Data processed

The t-statistic test is used by researchers to determine whether the independent variable (X) individually affects the dependent variable (Y). T table = 1.99 which is obtained from the calculation results of the formula $df=n-k$ or $df=110-4=106$, then the significance level is 0.05 or 5%. . The results of the hypothesis test can be seen from the total effect described in Table 8.

Table 8. Path Coefficients

	Original sample (O)	T statistics (O/STDEV)	P values
LK -> KI	0.205	2.167	0.030
FSE -> KI	0.322	3,607	0.000
FIN -> KI	0.237	1929	0.054

Source: Data processed

Based on the results of the path coefficients in table 8 above, it can be explained the relationship between latent variables according to the hypothesis proposed. The results of the analysis show that financial literacy has a t-count of $2.167 > t$ -table of 1.99 and a significance value (P Values) of $0.030 < 0.05$ and shows that H1 is accepted. So financial literacy is concluded to have a positive and significant effect on investment decisions. The socio-economic factors have a t-test of $3.607 > t$ table of 1.99 and a significance value (P Values) of $0.000 < 0.05$ which indicates H2 is accepted. Therefore, socio-economic factors have a significant positive effect on investment decisions. Meanwhile, financial technology has a t-count of $1.929 < t$ table of 1.99 and a significance value (P Values) of $0.054 > 0.05$ which indicates H3 is accepted. So it can be concluded that financial technology has no significant effect on investment decisions.

DISCUSSION

The Effect of Financial Literacy on Investment Decisions

Based on the results of research that has been done between the relationship between financial literacy and investment decisions, it shows a tcount of 2.167 > ttable of 1.99 and a significant P value of 0.030 < 0.05. The results show that the financial literacy variable has a positive and significant influence on investment decisions for FEB UM students. This can be interpreted that the indicators included in financial literacy have had sufficient impact to influence investment decisions. So it is concluded that financial literacy has a significantly positive influence on investment decisions or it can be said that H1 is accepted. This relationship can support traditional financial theory, namely that investors behave rationally because they are considered to have the ability to identify and process information accurately and thoroughly so as to obtain an ideal portfolio choice. Investors' understanding of finance makes them more in-depth into various types of investments and their risks. This is what causes investors to maximize their profits through selecting the right and optimal type of investment.

The results of this study are in line with research conducted by Fadila, et al (2022) which states that financial literacy is able to control financial knowledge much better in determining investments. Then according to Suresh's research, G (2021) The presence of financial competence, skills and opportunities to develop investors' financial literacy to make profitable investment decisions. Kusumahadi & Utami, (2022) state that financial literacy has a positive and significant effect on investment decisions. This means that investors believe that the presence of financial competence, skills and taking advantage of opportunities and confidence can help make investment decisions and their risks more accurate and precise.

The Influence of Socio-Economic Factors on Investment Decisions

Based on the results of research that has been done between the relationship between socio-economic factor variables and investment decisions, it shows a tcount value of 3.607 > ttable 1.99 and a significant value (P Values) of 0.000 > 0.05. This means that socioeconomic factor variables have a significant influence on investment decisions in FEB UM students. These results indicate that the indicators included in the socio-economic factors have sufficient influence on investment decisions. So it is concluded that socio-economic factors have a significant positive influence on investment decisions or it can be said that H2 is accepted. This relationship supports the theory of behavioral finance which states that psychological factors can cause investors to act irrationally and unpredictable. So that investment decisions are only based on emotions, traits, and knowledge that cause self-control to become overly confident. Investors often make investment decisions based on the ease of information obtained and the easy availability of information. One of the easiest information to obtain is through relatives or friends.

This is in line with research conducted by Prasad et al (2021) which says that socio-economic factors have a positive effect and have a strong impact on investment decisions.

The Influence of Financial Technology on Investment Decisions

Based on the results of research that has been done between the relationship between financial technology variables and investment decisions, it shows a tcount value of 1,929 < ttable of 1.992 and a significant value (P Values) of 0.054 > 0.05. This shows that the financial technology variable has no influence on investment decisions in FEB UM students. So it can be interpreted that the indicators used in financial technology do not have a big impact on being able to influence investment decisions. So it is concluded that financial technology has no significant effect on investment decisions or it can be said that H3 is rejected. The results also show that students do not fully trust and believe in the emergence of financial technology in this investment, even though it can provide many conveniences. As well as the development of technology, it turns out that it has not been able to increase student decisions to invest even though students are very close to using technology. Lack of understanding about investment, the use of investment applications

and the rise of fraudulent investments can also be reasons why students do not fully trust investing in financial technology.

This is in line with research conducted by Utami (2023) which says that financial technology has no effect on investment interest. Likewise with research Restianti et al., (2022) said that financial technology weakens the influence of financial literacy on decisions. Backed by research Fitriasuri & Simanjuntak, (2022) which states that technology does not affect student investment decisions in the capital market. This shows that the existence of sophisticated financial technology has not been able to make students interested in using it, especially in investment.

CONCLUSION

Based on the hypothesis testing that has been done, the financial literacy variable has a significant positive effect on investment decisions. This means that students as individual investors make good use of financial literacy to make investment decisions. Socio-economic factor variables have a significant positive effect on investment decisions. This means that students as individual investors use psychological factors in the form of emotions, traits and the environment to obtain information that will be used in making investment decisions. Financial Technology has no effect on investment decisions. This is because students do not fully trust both the safety and convenience of financial technology.

LIMITATIONS

For further research, it is recommended to take a wider object, namely in a special area of investors with a group that has longer experience and increase the number of respondents. In addition, it is recommended for further research to use other variables such as cognitive bias and heuristics to make them more accurate. This is because the results of the influence of the independent variables used are low, meaning that the financial literacy variables and socio-economic factors only have a small effect and the rest is explained by other variables.

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