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**The Effect of Financial Knowledge on Investment Decisions
With Financial Behavior as Mediation**

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Abstract

The purpose of this study aimed to determine financial literacy and financial behavior influence the investment decisions of students at Jakarta State University. This research is quantitative or related to numbers as a benchmark. Data collection was carried out using a questionnaire or questionnaire using a random a random sampling technique s or students. In this study, researchers used descriptive data analysis techniques, regression tests and different t-tests with the help of the SPSS software program. The results of this study indicate that financial literacy has a positive and significant effect on securities investment decisions. Financial behavior has a positive and significant effect on securities investment decisions. The results of this study also show that financial literacy and financial behavior simultaneously have a significant effect significantl.

Keywords

Behavioral Finance; Financial Decision; Investment ; Literacy

Background

In behavioral finance, the role of financial knowledge is very important in making financial decisions. Investors can make choices in an irrational way. Investors respond to negative news more strongly than positive news. Behavior often influences financial decision making. Behavioral finance integrates psychological elements with financial theory. The theory of bounded rationality, theory of planned behavior and prospect theory form the grand theory in this study. Every individual along with the development of the times is required to be more concerned about the importance of investing. Someone must have the ability to manage finances well, so from this someone will be more selective in making investment decisions.

Data on the number of capital market investors from 2018 to 2021 has increased by up to 89.5% of people interested in investing. Data on the number of stock investors from 2018-2021 has also increased to 101.1% public interest in investing. Furthermore, data on the number of mutual fund investors from 2018-2021 has always increased, reaching 111.29%, of public interest in investing. Finally, data on the number of securities investors from 2018-2021 has also increasyearly up to 31.96%. Of the four total investment data, investment in securities is still lacking interest.



Stock investment is now practical to do, wherever and whenever. Stock investment purchases can be made online with the help of software such as mobile phones and computers that have an internet connection. The purchase price of shares is very varied, and can be purchased from low rates to high rates. They were adjusting individual ability to invest in stocks. Disbursement of stock investment funds can be quickly sold easily, if you need emergency funds that are fast. Individuals when buying stocks must be able to calculate the risks that will occur in the future, stock investment is an investment that has a very high risk (Wira, 2019).

Financial management activities must be carried out carefully in accordance with the rapid economic developments in the era of globalization. Decisions about the funds to be used can be generated from these activities. Currently, knowledge is also needed regarding financial management insights. People more often encounter intensive research on economic issues, financial knowledge that has a high probability, so it is used as a basis for good judgment (Safryani et al., 2020) Someone who is good at making financial decisions is someone who is sensitive to financial knowledge and understanding. Every individual needs to have it and be able to maximize the use of existing financial tools and products so that the right decisions can be made. Individuals can take over any of the financial products that have been offered. Investment activities that can improve people's standard of living.

The demographic profile is currently filled with someone who is young, with around 45 million aged 15–24 years (BPS, 2021). Economic growth in 2021 will increase by 3.69%, this is because many young people contribute to economic growth. However, the 2019 National Financial Literacy and Inclusion Survey (SNLIK) showed a financial literacy index of 38.03% and a financial inclusion index of 76.19%. This shows that the Indonesian people in general do not understand well the characteristics of the various financial products and services offered by formal financial service institutions, even though financial literacy is an important skill in the context of community empowerment, individual welfare, consumer protection, and increasing financial inclusion. A person's financial literacy is low, this is the same as low financial knowledge (OJK, 2021). Financial literacy including knowledge of financial sectors and how to use them (OCBCNISP, 2021)

There are several individual factors in deciding to invest, namely financial knowledge (Nuzula Agustin & Lysion, 2021), behavioral motivation, overconfidence and behavioral finance (Rezeki & Pitaloka, 2020), self-image / firm image, social relevance and advocate recommendation (Overconfidence et al., 2019). Students in Indonesia are still less interested in saving excess pocket money in the form of investments in various portfolios, the majority of students in Indonesia prefer to save this money in bank accounts. The above statement relates to data according to a lifepal survey (Hakim, 2020) where 65.2% of students in Indonesia still entrust their excess pocket money to the bank. Students in Indonesia who choose to invest in buying precious metals, securities and other instruments are 22.4% of the total respondents.

People ability to manage financial behavior that students apply daily is closely related to financial knowledge that everyone must have. Students are responsible for the financial management decisions each makes so that financial problems do not occur (Sholeh, 2019).

The younger generation tends to be easily swept away by the currents of globalization. In addition, young people are the target of traders to consume goods. The nature of students is very easy to be tempted by new or branded products. Moreover, students are a potential market. In addition, students often follow the latest trends. Supported by student consumer attitudes and developing technology that makes it easier



for students to spend money. Not only to buy daily needs, but students also buy something they really want (Rohmanto & Susanti, 2021).

Based on the background above, the researcher is interested in discussing the influence of financial behavior and financial knowledge on securities investment decisions in students of the Faculty of Economics, Jakarta State University.

THEORETICAL FRAMEWORK

The theory of bounded rationality, theory of planned behavior and prospect theory form the grand theory in this study. According to bounded rationality theory, investors' reasoning has limitations that allow for prejudice (behavior factors) in decision making. Investors must manage finances and understand how decisions are made. The theory of planned behavior developed by Ajzen (1991) explains that it aims to predict and understand individual behavior. Then in prospect theory is a theory that explains the process of making decisions in uncertain circumstances. The essence of prospect theory is the individual decision-making process as a factor of price formation, which is a general concept in economics. The prospect theory explains the importance of financial knowledge in forming financial decisions so as to avoid behavioral bias (Akhtar et al., 2020).

a. The Effect of Financial Knowledge on Investment Decisions

Future financial planning may be affected by a lack of financial knowledge, while poor investment planning may result from ignorance of basic financial ideas. According to Theory of Planned Behavior (Seni & Ratnadi, 2017), humans often behave in ways that reflect their intentions and sense of control. This includes taking certain actions whose intentions are influenced by their own behavior as well as by subjective norms and restrictions on behavior. Perceived behavior leads to the evaluation and consideration of potential investors, and once an investment intention has been established, investors often begin to consider a variety of additional criteria. When investors make decisions to ensure some level of financial security, their investment views and attitudes can be enhanced.

How well a person understands financial basics affects investment planning. The same thing in determining that financial knowledge is an influential element in investment decisions is stated in Rizkiana & Kartina's research (2017). In addition, a study by Farhidatun Faidha (2019) shows how investment intentions can be influenced by one's financial knowledge.

b. Effect of Financial Behavior on Investment Decisions

Financial behavior according to Suryanto (2019) is a pattern of habits and individual actions in managing their finances. Everyone will constantly struggle with the problem of how much money they receive and spend. Problems may arise when people receive and make less money than they spend under certain circumstances. This is due to the person's healthy financial condition. According to I Wayan Yasa Adi Updana & Nyoman Trisna Herawati (Herawati & Trisna, 2020), people who exhibit good financial behavior are usually more adept at allocating dollars or resources, such as controlling expenses and spending, recording expenses, and investing.

According to Rizkiana & Kartina's research (Rizkiana & Kartina, 2017), people will act, including making investment decisions, based on financial data from the research. The same thing also happened in Baiq Fitriarianti's research (2018), which found that financial behavior has an impact on investment decisions. Behavioral finance can be seen as a person's reaction to their financial knowledge.



METHOD

This research uses quantitative research methods. In quantitative research, data analysis is an activity after data from all respondents or other data sources have been collected. Activities in data analysis are grouping data based on variables and types of respondents, tabulating data based on variables from all respondents, presenting data for each variable studied, performing calculations to answer the problem formulation, and performing calculations to test the hypotheses that have been proposed (Sugiyono, 2016).

The population in this study were all students of the 2019 Jakarta State University Education Economics Study Program. The sample in this study was 100 students from the 2019 Jakarta State University Cooperative Economics Study Program. The method of data collection is done by spreading the scale on the subjects that have been determined according to the variable to be measured. This study includes three variables, namely Financial Knowledge (X), Financial Behavior (Z), and Investment Decision (Y)

The research instrument used by researchers is a questionnaire or questionnaire (scale). Researchers distributed questionnaires online, namely using the Google Form. Questionnaires or questionnaires are data collection techniques that are carried out by giving a set of questions or written statements to respondents to answer (Sugiyono, 2008). The data analysis method used in this study is a quantitative data analysis method using the SPSS version 25 measuring instrument to test the data.

RESULT

1. Descriptive Statistical Analysis

Descriptive statistics provide an overview or description of a data seen through the average value (mean), standard deviation, variance, maximum, minimum. This test was conducted to simplify and provide a description of the research variables, namely securities investment decisions, financial literacy and financial behavior. The results of the descriptive statistical test are presented in the table below:

Table 1.
Descriptive Statistical Test Results
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Financial Literacy	87	7.00	12.00	8.6437	1.09944
Financial Behavior	87	7.00	12.00	8.5977	1.07249
Investment decisions	87	6.00	11.00	8.2414	1.22916
Valid N (listwise)	87				

Source: SPSS Output 21, 2022

From the table above it can be explained several things as follows:

1. The Financial Literacy Variable (X1) has a maximum value of 12, a minimum value of 7 with an average value of 8.6437 and a standard deviation value of 1.09944 with a total sample of 100 samples or $n=100$.
2. The Financial Behavior Variable (X2) has a maximum value of 12, a minimum value of 7 with an average value of 8.5977 and a standard deviation value of 1.07249 with a total sample of 100 samples or $n=87$.



3. The securities investment decision variable (Y) has a maximum value of 11, a minimum value of 6 with an average value of 8.2414 and a standard deviation value of 1.22916 with a total sample of 100 samples or n=87.

2. Multiple Linear Regression Analysis

The multiple linear regression test in this study aims to show the relationship between financial literacy and financial behavior as independent variables with securities investment decisions as the dependent variable. The results of multiple linear regression tests are presented in the table below:

Table 2.
Multiple Linear Regression Test Results
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.605	.975		1.646	.104
Financial Literacy	.408	.117	.365	3.493	.001
Financial Behavior	.362	.120	.316	3.025	.003

a. Dependent Variable: Investment decisions

Source: SPSS Output 21, 2022

The results of the multiple linear regression test in the table above form the regression equation as follows:

$$Y = 1.605 + 0.408 X_1 + 0.362 X_2 + e$$

The regression equation above can be interpreted as follows:

1. The constant is worth 2.185. This means that if Financial Literacy and Financial Behavior is 0, then the value of investment decisions on securities is 2.185
2. The regression coefficient value of the Financial Literacy variable is 0.219, which means that if there is an increase in Financial Literacy by 1 unit, it will increase investment decisions in securities by 0.219 units or by 21.9%.
3. The regression coefficient value of the Financial Behavior variable is 0.477, which means that if there is an increase in Financial Behavior by 1 unit, it will increase the Securities investment decision by 0.477 units or 47.7%.



3. Classical Assumption Test

a. Normality Test

The normality test was carried out with the aim of knowing whether the research data was normally distributed or not. One of the conditions for a good regression model is that the data to be tested is normally distributed. The normality test in this study used the One-Sample Kolmogorov-Smirnov test, provided that if the significance level is greater than 5% or 0.05, the data is normally distributed. Meanwhile, if the significance level is less than 5% or 0.05, the data is not normally distributed. The results of the Kolmogorov-Smirnov One-Sample normality test are presented in the table below:

Table 3.
One-Sample Kolmogorov-Smirnov normality test results
One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		87
Normal Parameters ^a	Mean	.0000000
	Std. Deviation	.98416947
Most Extreme Differences	Absolute	.125
	Positive	.125
	Negative	-.109
Kolmogorov-Smirnov Z		1.167
Asymp. Sig. (2-tailed)		.131

a. Test distribution is Normal.

Source: SPSS Output 21, 2022

The table above shows that the data used in this study fulfill the requirements as normally distributed data. This can be seen in the Asymp Sign value. (2-tailed) for the unstandardized residual of 0.131 which is greater than the required significance value of 0.05. This means that the normality test is fulfilled.

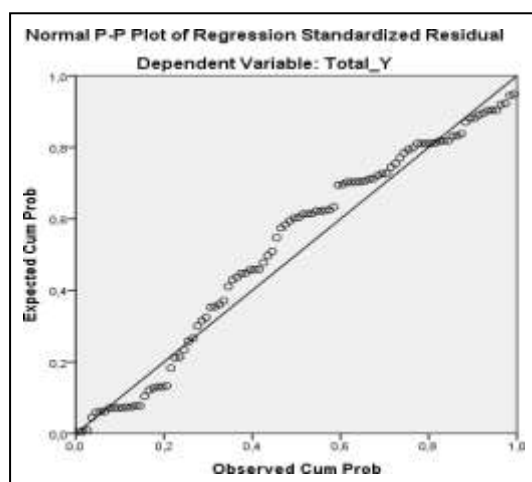


Figure 1. Normal Probability Plots



The Normal Probability Plot Normality Test aims to compare the cumulative distribution of the actual data with the cumulative distribution of normal distribution data. Based on the graph above, it can be concluded that the data is normally distributed because the residual distribution spreads around the diagonal line and follows the direction of the diagonal line. Researchers also use histograms as normality test results. Normal data will be seen through a balanced histogram graph and not skewed to the left or right.

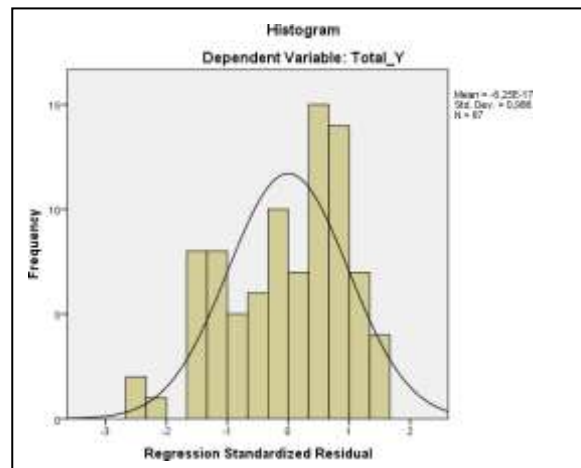


Figure 2. Histogram of Variable Y

Based on the histogram graph, it can be seen that the data is normally distributed because the bell-shaped curve is in the middle and is not skewed to the left or right.

b. Multicollinearity Test

The multicollinearity test aims to determine whether there is a correlation or not in the independent variables in the regression model. A good regression model is that there is no correlation between the independent variables. To detect it, a multicollinearity test can be carried out by looking at the Tolerance and Variance Inflation Factor (VIF) values with the stipulation that if the Tolerance value is > 0.1 and the VIF value is < 10 , the regression model is free from multicollinearity symptoms. The results of the multicollinearity test are presented in the table below:

Table 4.
Multicollinearity Test Results
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	1.605	.975		1.646	.104		
Financial Literacy	.408	.117	.365	3.493	.001	.700	1.428
Financial Behavior	.362	.120	.316	3.025	.003	.700	1.428

a. Dependent Variable: Investment decisions



The table above shows that in the research data used there are no symptoms of multicollinearity. This can be seen from the overall tolerance value of the independent variables, which is more than 0.1 and the VIF value is less than 10.

c. Heteroscedasticity Test

The heteroscedasticity test aims to test whether in the regression model there is an inequality of variance from one observation to another.

The heteroscedasticity test can be detected by looking at whether there is a certain pattern on the scatter plot graph between SRESID on the Y axis and ZPRED on the X axis. If there is no clear pattern and the dots spread above and below the number 0 on the Y axis, then nothing happens heteroscedasticity.

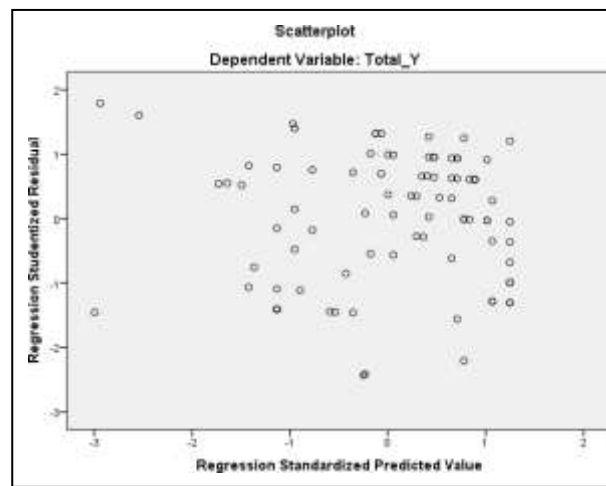


Figure 3. Scatterplot Variable Y

Based on the picture above, it can be concluded that the data does not experience heteroscedasticity because the points on the scatter plot do not form a clear pattern, and the points spread above and below the number 0 on the Y axis.

4. Hypothesis test

a. (Partial) t test

The t test is used to partially determine whether each independent variable has a significant effect on the dependent variable. The partial test uses a significance level of 5% or 0.05 where the independent variable is considered to have an effect on the dependent variable if the significance value (Sig.) is less than 5% or 0.05. The results of the t-test are presented in the table below. To find the t-table value, the following formula is used: $(\alpha/2) : (n-k-1)$

Information:

α : significance value 0.05 n : unit of analysis

k : the number of independent variables or can be written as follows:

$$\begin{aligned} \text{t table} &= (0.05/2) ; (87-3-1) \\ &= (0.025 ; 83) \\ &= 1.98896 \end{aligned}$$



Table 5.
Test Results – t
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.605	.975		1.646	.104
Financial Literacy	.408	.117	.365	3.493	.001
Financial behavior	.362	.120	.316	3.025	.003

a. Dependent Variable: Investment decisions

Source: SPSS Output 25, 2022

From table 4.8 above, the conclusions from the t-test results are as follows:

1. Financial Literacy Variable (X1) is known to have a value of Sig. 0.001 < 0.05 and t count = 3.493 > t table = 1.988. So it can be stated that Financial Literacy has a positive and significant effect on the securities investment decision variable.
2. Financial Behavior Variable (X2) is known to have a value of Sig. 0.003 < 0.05 and t count = 3.025 > t table = 1.988. So it can be stated that financial behavior has a positive and significant effect on the securities investment decision variable.

b. F Test (Simultaneous)

The F test aims to examine the effect of the dependent variable jointly on the independent variable. The results of the F test are presented in the table below:

Table 6.
Test Results – F
ANOVA^b

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	46.632	2	23.316	23.512	.000 ^a
Residual	83.299	84	.992		
Total	129.931	86			

a. Predictors: (Constant), Financial behavior, Financial literacy

b. Dependent Variable: Investment decisions

Source: SPSS Output 21, 2023



The table above shows the calculated F value of 23.512 and the Sig. 0.000. So it can be concluded that Financial Literacy and Financial Behavior jointly influence securities investment decisions.

5. Coefficient of Determination

The R square coefficient is used to measure the closeness of the relationship between the dependent variable and the independent variable. The coefficient of determination is 0 to 1. If R^2 is close to 1, it means that the independent variables provide almost all the information needed to predict the variation of the dependent variable and have a strong influence on the dependent variable. The results of the coefficient of determination are presented in the table below:

Table 7.
Determination Coefficient Results
Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.599 ^a	.359	.344	.99582

a. Predictors: (Constant), Financial behavior , Financial literacy

b. Dependent Variable: investment decisions

The table above shows the Adjust R Square value of 0.344 or 34.4%. This shows that 34.4% of the variable Securities investment decisions can already be explained by the independent variables in this study, namely Financial Literacy and Financial Behavior. While the remaining 0.656 or 65.6% is influenced by other variables not used in this study.

DISCUSSION

The results of the discussion regarding each variable regarding the hypothesis testing in this study can be explained as follows:

1. Financial literacy has an effect on securities investment decisions

Financial literacy has a significant effect on investment decisions in students of the Economics Study Program, Jakarta State University, this shows that the more students understand literacy finance so that they are more confident and courageous in making securities investment decisions because financial literacy includes knowledge and awareness where students have received learning about financial literacy and have understood related to investment in financial economics learning. This resulted in the emergence of confidence to make investments.

Based on the statistical value of the t test obtained, it shows that the calculated t value of the Financial Literacy variable is 3.493. This value is greater than the t table value of 1.988 with a significance value of 0.001 which is less than the alpha value of 0.05, so the first hypothesis which states that Financial Literacy influences securities investment decisions is accepted.

In this study, it is known that the majority of economics students have good basic knowledge of finance, savings and loans, investments, and insurance. In accordance with



these results where the object of this study, followed by their knowledge of good finance. Therefore, financial literacy has a positive effect on investment decisions, meaning that the higher the financial literacy of lecturers, the better the securities investment decisions they make. The level of financial literacy is important because individuals may be involved in making a securities investment decision. By having a good level of financial literacy, individuals tend to be wiser and cleverer in managing their assets so that they can provide beneficial reciprocity in supporting individual finances.

Thus this is in line with the opinion (Mertha et al., 2018) that financial literacy has a positive and significant effect on investment decision behavior. This shows that the higher the level of financial literacy, the better the behavior of individual securities investment decisions. Financial literacy is the process of measuring a person's level of understanding in digesting financial information. Having financial literacy can make it easier for someone when faced with making investment decisions on the selected securities. Financial decisions based on good financial literacy depend on someone in facing financial problems (Huston, 2010).

2. Financial behavior influences the decision to invest in securities

Financial Behavior as a science that describes human behavior in taking an action based on psychological factors and information obtained in their environment. Someone who is effective and responsible in managing his personal finances, for example doing budgeting and recording income and expenses tends to have good financial behavior (Rikziana & Kartini, 2017).

Based on the statistical value of the t test obtained, it shows that the calculated t value of the Financial Behavior variable is 3.025. This value is greater than the t table value of 1.988 with a significance value of 0.003 which is less than the alpha value of 0.05, so that the second hypothesis which states that financial behavior influences securities investment decisions is accepted.

This explains that a person's knowledge of managing his personal finances is a major factor in determining an investment decision. The importance of this is a big task for educational institutions to students, especially students who already have a fixed income in the form of a salary per month. Students must have financial knowledge from an early age so that they can become smart students, can manage finances well, and can have a prosperous life, not experiencing financial difficulties and in the future.

The same results were also found in Baiq Fitriarianti's research, (2018) that a person's financial behavior can influence securities investment decisions. the same thing is also found in Aminatuzzahra's research results, (2014) which found that financial attitudes influence the decision making of securities investment for Master of Economics Diponegoro University students

3. Financial Literacy and Financial Behavior simultaneously influence securities investment decisions

Based on the calculation of the value of the F test statistic obtained, the calculated f value is 23.512. This value is greater than the f table value of 3.94 with a significance value of 0.000 which is less than the alpha value of 0.05, so that the third hypothesis which states that Financial Literacy and Financial Behavior have a simultaneous effect on Securities investment decisions is accepted.

This shows that it is very important considering that basically in determining an investment one should understand what product they are using in order to avoid the lure of lucrative profits without being aware of the risks that will be faced. By having adequate Financial Literacy and Financial Behavior, it is expected that students will understand and



be more careful about currently circulating financial information and be able to seize opportunities as well as see risks in making a securities investment decision.

Thus Financial Literacy and Financial Behavior have an influence on the level of investment decisions, in financial management which is influenced by individual attitudes and income, where the income of investors with low income tends to be used to fulfill the necessities of life rather than investing in several assets and studying how humans actually behave in making financial decisions (Landang et al., 2021).

CONCLUSION

Based on the results of the research and discussion that have been stated previously, the researchers can draw conclusions from research regarding the influence of Financial Literacy and Financial Behavior on Securities investment decisions in Students of the Economics Study Program. The conclusions of this study are as follows:

1. Partially Financial Literacy has a positive and significant effect on Securities investment decisions for Students of the Faculty of Economics, Jakarta State University. This shows that the better the level of financial literacy, the better the investment decision.
2. Partially, financial behavior has a positive and significant effect on securities investment decisions for students of the Faculty of Economics, Jakarta State University. This shows that the indicators contained in financial behavior, financial planning, financial budgeting, and financial storage make a major contribution in their role in influencing securities investment decisions.
3. Simultaneously Financial Literacy and Financial Behavior have a significant effect on Securities investment decisions for Students of the Faculty of Economics, Jakarta State University.

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