

## **The influence of financial literacy and psychological factors on money market mutual fund investment decisions**

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### **ABSTRACT**

Indonesia has experienced economic growth after the Covid-19 pandemic, which was accompanied by an increase in the number of first-time investors, especially the millennial and z generations. However, the lack of financial and psychological literacy of each investor, especially beginners who are not mature enough, will affect investment decisions that are not optimal. This study aims to examine the effect of financial literacy and psychological factors on money market mutual fund investment decisions. This research is a type of quantitative research. Methods of data collection by distributing questionnaires to 395 respondents who meet the criteria. The method used is Structural Equation Model - Partial Least Square. From the results of the study it was found that the T test on the independent variable Financial Literacy was 3,455 with a significance of 0.001, which means it has a significant effect on investment decisions, Emotion is 1,487 with a significance of 0.137, which means it does not have a significant effect on investment decisions, Social Interaction is 0.890 with a significance of 0.374, which means it is not significant effect on investment decisions, Considering The Past of 2.769 with a significance of 0.006, which means a significant effect on investment decisions. It is hoped that this research will provide insight to respondents that investment decisions can be measured using the level of financial literacy and psychological factors such as emotions, social interaction and considering the past.

Keywords: financial literacy, emotions, social interaction, considering the past, investment decisions

### **1. Introduction**

2020 was the year when Indonesia was shocked by the outbreak of the Covid-19 virus which at that time paralyzed all activities and disrupted various sectors in Indonesia. This has led to many industrial economic sectors being affected. The Central Statistics Agency (*BPS*) said Indonesia experienced an economic decline from the worst Gross Domestic Product (GDP) of -5.32% in the second quarter of 2020. Economic growth can be supported due to investment and investment that helps economic recovery after the Covid-19 pandemic. The Financial Services Authority (*OJK*) said that the number of newly invested investors with an average age under 30 years reached 58.74% of the total investors with total assets of 80.97 trillion rupiah. Mutual funds are an investment instrument that is in demand in Indonesia and offers various conveniences. Money market mutual funds are the mutual funds with the highest number of investors at 2.47 million.

Education about the capital market is related to Financial Literacy. Based on a survey conducted by the Financial Services Authority (*OJK*) to 14,634 respondents, it is stated that the financial literacy index of the Indonesian people in 2022 is 49.68% and is a factor in investment decisions. Standard Finance Theory assumes that investors are always rational, with the ability and processing information quickly and precisely so as to obtain an optimal portfolio [1]. In

[2], Financial Literacy affects Investment Decisions, while [3] stated that Financial Literacy does not affect Investment Decisions.

Investment decisions are also related to psychological factors. The psychic possessed by each individual investor has its own characteristics and ways of making investment decisions [4]. The psychological factors that each investor has are closely related to Behavioral finance theory which says that investors make investment actions based on their cognitive psychology [5]. It is not uncommon for novice investors to make irrational investment decisions. In this case, the factors that are suspected to be psychological biases are Emotions, Social Interaction and Considering the Past. Emotions in [6] and [7] mentioned having an influence on Investment Decisions meanwhile [8] said that emotions have a significant negative effect on Investment Decision Making. Some respondents do not have enough experience in investing and do not involve emotions in every investment decision. Social Interaction in [6] has an influence on Investment Decisions, while [7] said that Social Interaction has no influence on Investment Decisions. It is said that the lack of interaction between fellow investors and brokers. In Considering the Past, [7] said that Considering the Past affects Investment Decisions.

This study seeks to fill the gap in research that combines rational investor factors based on Standard Financial Theory and irrational investor factors based on Behavioral Finance Theory. In contrast to previous research, this research focuses on money market mutual fund investors, which are the financial investment instruments most suitable for beginner investors, namely the millennial generation and Generation Z. This study also expands the research object throughout Indonesia, unlike previous research, which focused on one region specifically in one city or one province in Indonesia. By expanding the scope of research respondents, it is hoped to provide new insights to readers who are interested in seeing a comparison of the influence of rational and irrational factors on money market mutual fund investors in Indonesia. Based on the background previously described, researchers want to know the influence of Financial Literacy and Psychological Factors on the decision to invest in money market mutual funds of the millennial generation and generation z in Indonesia. Researchers want to find answers through questions that arise in this study. How does each variable of Financial Literacy, Emotion, Social Interaction and Considering the Past affect money market mutual fund investment decisions in millennials and generation Z in Indonesia?

## 2. Method

This research uses quantitative research types and data sources use primary data. The object of research is Financial Literacy (X1), Emotions (X2), Social Interaction (X3), Considering The Past (X4), Investment Decisions (Y). The subjects in this study are millennials and generation z in Indonesia. The data collection method uses questionnaires to respondents with respondent criteria, namely having invested in money market mutual funds and investors in money market mutual funds between the ages of 17 – 43 years. The questionnaire consisted of 40 questions for all four variables on a likert scale of 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree) and 5 (strongly agree). Researchers use the Smartpls ver4.0 application to process respondent data obtained by data analysis using the Structural Equation Modeling (SEM) Test which contains inner and outer tests.

### Minimum Sampling

$$n = (Z_{B,CL}) \left( \frac{P \times Q}{E^2} \right) \dots \dots \dots (1)$$

Source: Hair, et al (2017)

**Figure 1.** Sampling formula

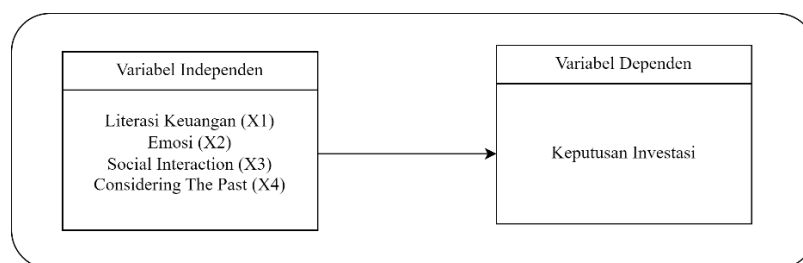
Z = Z score in this study is 1.96.

P = Estimated proportion of the population expected to have desired characteristics based on intuition or prior information.

Q = [1 – P], or the estimated proportion of the population expected to have no characteristics of interest. e = Acceptable fault tolerance rate of 5%.

Figure 1 is a sampling formula according to [9]. From these results, the minimum sampling according to hair is 384 samples and in this study 395 respondents have been collected with a probability level of 95%, the Z value obtained is 1.96 (two-tail curve) and an error rate of 5%.

## Conceptual Framework



Source: processed data (2023)

**Figure 2.** Conceptual Framework

## Research Hypothesis

### The Relationship of Financial Literacy with Investment Decisions

Research by [2] and [10] states that Financial Literacy has a significant influence on Investment Decisions. From both studies, Financial Literacy has a positive and significant influence on investment decisions. So that the higher the level of investor knowledge, namely financial literacy, the higher the decision in. So that the first hypothesis can be developed, namely:

H1 = Financial Literacy has a significant effect on Investment Decisions in Money Market Mutual Funds.

### Emotional relationship with investment decisions

Research by [6], [7], and [11] states that emotions can have a significant effect on investment decisions. In this study, the indicators used for the Emotion variable were primary emotions which included happiness, sadness, anger, or fear. Secondary emotions that include euphoria, melancholy, panic. Researcher's primary emotional indicators include happiness, sadness, anger, or fear. Therefore, researchers developed a second hypothesis, namely:

H2 = Emotions have a significant effect on Investment Decisions in Money Market Mutual Funds.

### Social Interaction relationship with investment decisions

Research by [6] states that Social Interaction has an influence on investment decisions. Humans are social creatures and are not separated from others, humans also interact and are influenced by other people and the outside environment as well as investors. So, the researcher developed a third hypothesis, namely:

H3 = Social Interaction has a significant effect on Investment Decisions in Money Market Mutual Funds.

### Considering the Past's Relationship with Investment Decisions

In the research of [6] and [7] Considering the Past affects Investment Decisions. From the two studies above, Considering the Past has a positive and significant influence on Investment Decisions. Considering The Past makes the investors past a lesson and the future to make improvements. Uncertainty that is an experience for every investor, makes investors more vigilant in making Investment Decisions. So, the researcher developed a third hypothesis, namely:

H4 = Considering the Past has a significant effect on Investment Decisions in Money Market Mutual Funds.

### 3. Results and Discussion

#### Statistic Descriptive Analysis

**Table 1.** Statistic Descriptive

Variable	Average index value	Category	Explanation
Financial Literacy (X1)	87%	High	High financial literacy in investors
Emotions (X2)	66%	Middle	Indications of high emotions in investors
Social Interaction (X3)	71%	Middle	High Social Interaction indication in investors
Considering the Past (X4)	87%	High	Considering The Past is high on investors
Investment Decisions (Y)	80%	High	High Investment Decisions in investors

Source: processed data (2023)

The questionnaire in this study managed to get as many as 395 respondents spread throughout Indonesia. This study used descriptive statistical analysis using the three-box method proposed by [12].

#### Identity of the respondent

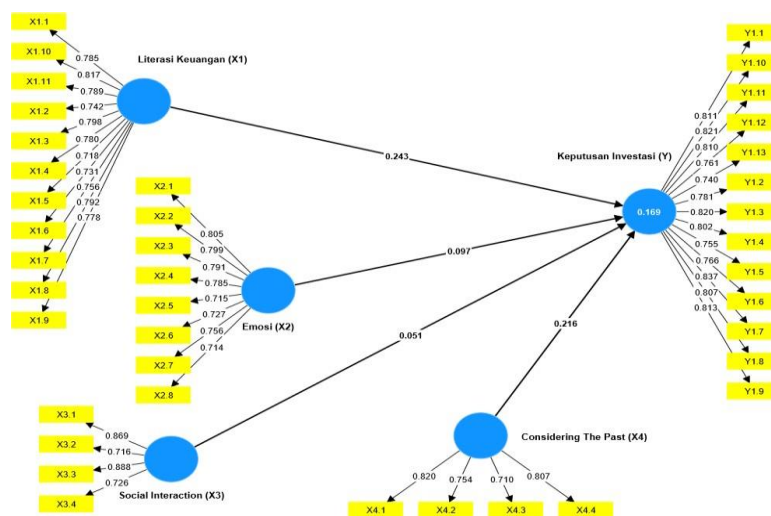
**Table 2.** Identity of the respondent

Identity of the respondent	Majority of respondents (395 respondents)
Gender	male investors 62.53%
Age	Generation z (17 - 26) years 59%
Domicile	Jabodetabek 57%
Work	Students 46%
Education	Bachelor (S1) 47%
Income	Rp 1 - 3 million 27%
Invested capital	Rp 1 - 3 million 42%
Long time investing	1 - 2 years at 29%

Source: processed data (2023)

#### Outter Model Test

##### Convergent Validity Test



Source: processed data (2023)

**Figure 3.** Loading Factor Diagram

**Table 3.** Outer Loading Value

	Financial Literacy (X1)	Emotions (X2)	Social Interaction (X3)	Considering the Past (X4)	Investments Decisions (Y)
X1.1	0.785				
X1.2	0.742				
X1.3	0.798				
X1.4	0.780				
X1.5	0.718				
X1.6	0.731				
X1.7	0.756				
X1.8	0.792				
X1.9	0.778				
X1.10	0.817				
X1.11	0.789				
X2.1		0.805			
X2.2		0.799			
X2.3		0.791			
X2.4		0.785			
X2.5		0.715			
X2.6		0.727			
X2.7		0.756			
X2.8		0.714			
X3.1			0.869		
X3.2			0.716		
X3.3			0.888		
X3.4			0.726		
X4.1				0.820	
X4.2				0.754	
X4.3				0.710	
X4.4				0.807	
Y1.1					0.811
Y1.2					0.781
Y1.3					0.820
Y1.4					0.802
Y1.5					0.755
Y1.6					0.766
Y1.7					0.837
Y1.8					0.807
Y1.9					0.813
Y1.10					0.821
Y1.11					0.810
Y1.12					0.761
Y1.13					0.740

Source: processed data (2023)

[Table 3](#) shows that all variables and their question indicators have a value of more than 0.7. It can be concluded that all indicator questions on each research variable tested on 395 respondents have met the requirements on outer loading.

**Table 4.** Average variance extracted (AVE)

Variable	Average variance extracted (AVE)
Financial Literacy (X1)	0.596
Emotions (X2)	0.581
Social Interaction (X3)	0.646
Considering the Past (X4)	0.599
Investment Decisions (Y)	0.632

Source: processed data (2023)

[Table 4](#) is the value of Average Variance Expected Return (AVE) which shows all variables have a value greater than 0.5. So, it can be concluded that all variables seen from the outer loading value and Average Variance Expected Return (AVE) have values above the minimum limit and can be declared to pass the convergent validity test.

#### **Discriminant Validity Test**

**Table 5.** Cross Loading

	Financial Literacy (X1)	Emotions (X2)	Social Interaction (X3)	Considering the Past (X4)	Investments Decisions (Y)
X1.1	<b>0.785</b>	-0.006	0.143	0.264	0.245
X1.2	<b>0.742</b>	0.091	0.045	0.198	0.245
X1.3	<b>0.798</b>	-0.002	-0.024	0.161	0.213
X1.4	<b>0.780</b>	0.058	0.005	0.220	0.199
X1.5	<b>0.718</b>	0.152	0.057	0.215	0.270
X1.6	<b>0.731</b>	0.100	0.132	0.183	0.221
X1.7	<b>0.756</b>	0.013	0.062	0.217	0.237
X1.8	<b>0.792</b>	0.065	0.039	0.222	0.239
X1.9	<b>0.778</b>	0.041	0.095	0.257	0.244
X1.10	<b>0.817</b>	0.048	0.109	0.342	0.316
X1.11	<b>0.789</b>	0.093	0.083	0.292	0.264
X2.1	0.085	<b>0.805</b>	0.048	0.212	0.204
X2.2	0.099	<b>0.799</b>	0.155	0.173	0.166
X2.3	0.056	<b>0.791</b>	0.113	0.208	0.115
X2.4	0.023	<b>0.785</b>	0.236	0.144	0.080
X2.5	-0.002	<b>0.715</b>	0.313	0.062	-0.002
X2.6	-0.010	<b>0.727</b>	0.288	0.093	0.034
X2.7	0.025	<b>0.756</b>	0.364	0.084	0.087
X2.8	0.036	<b>0.714</b>	0.353	0.090	0.071
X3.1	0.108	0.163	<b>0.869</b>	0.126	0.099
X3.2	0.029	0.286	<b>0.716</b>	0.074	0.075
X3.3	0.086	0.143	<b>0.888</b>	0.072	0.122
X3.4	-0.009	0.258	<b>0.726</b>	0.044	0.011
X4.1	0.255	0.210	0.087	<b>0.820</b>	0.260
X4.2	0.254	0.178	0.134	<b>0.754</b>	0.248
X4.3	0.182	0.140	-0.002	<b>0.710</b>	0.185
X4.4	0.253	0.122	0.091	<b>0.807</b>	0.273
Y1.1	0.248	0.119	0.129	0.275	<b>0.811</b>
Y1.2	0.234	0.142	0.073	0.277	<b>0.781</b>
Y1.3	0.298	0.116	0.089	0.215	<b>0.820</b>
Y1.4	0.256	0.093	0.108	0.219	<b>0.802</b>
Y1.5	0.193	0.141	0.072	0.257	<b>0.755</b>
Y1.6	0.215	0.119	0.123	0.210	<b>0.766</b>

	Financial Literacy (X1)	Emotions (X2)	Social Interaction (X3)	Considering the Past (X4)	Investments Decisions (Y)
Y1.7	0.288	0.152	0.084	0.300	<b>0.837</b>
Y1.8	0.300	0.125	0.091	0.242	<b>0.807</b>
Y1.9	0.266	0.151	0.099	0.262	<b>0.813</b>
Y1.10	0.247	0.146	0.097	0.288	<b>0.821</b>

Source: processed data (2023)

Table 5 is the cross loading value tested with Smart PLS ver 4.0, which shows each variable has a greater value or correlation in its original variable compared to other variables. In other words, all variables in this study have validly met the requirements and met the criteria of the discriminant validity test.

### Reliability Test

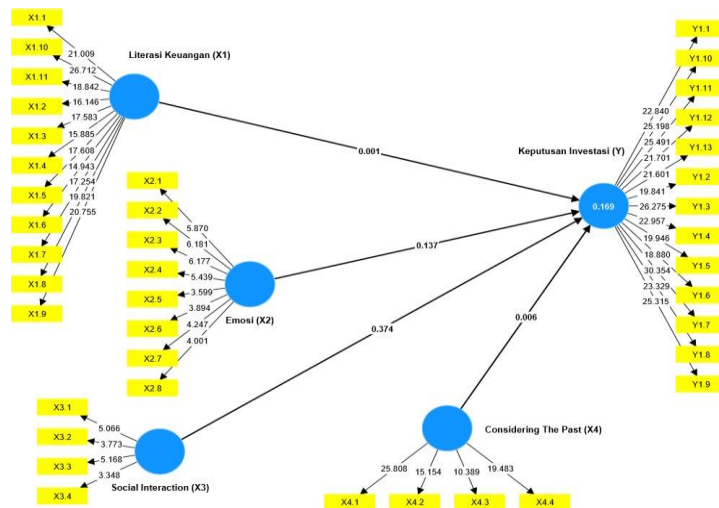
Table 6. Reliability Test

Variabel	Cronbach's alpha	Composite reliability (rho_c)
Financial Literacy (X1)	0.932	0.942
Emotions (X2)	0.914	0.917
Social Interaction (X3)	0.837	0.878
Considering the Past (X4)	0.778	0.856
Investment Decisions (Y)	0.951	0.953

Source: processed data (2023)

From Table 6 it can be concluded that the variable items on each question item can be reused and respondents have consistent and stable answers. All variables have Cronbach's Alpha and Composite reliability values of more than 0.70, which means they have qualified drinking reliability testing. Therefore, the measuring instruments on each variable used are precise and have good and reliable results.

### Inner Model Test



Source: Data processed from SmartPLS 4 (2023)

Figure 4. Diagram Bootstrapping

## Coefficient of Determination

**Table 7.** R-square Value

	R-square	R-square adjusted
Investment Decisions (Y)	0.169	0.161

Source: processed data (2023)

In [Table 7](#) the r-square result is 0.169 with an adjusted r-square of 0.161. These results are relatively weak, it can be said that the variation in variables Financial Literacy, Emotions, Social Interaction and Considering the Past is only able to explain the variation in investment decision variables by 17%.

## Hypothesis Testing

**Table 8.** Hypothesis Testing

Hypothesis	t-statistics	p-values	Explanation
Financial Literacy (X1) -> Investment Decisions (Y)	3.455	0.001	Significant
Emotions (X2) -> Investment Decisions (Y)	1.487	0.137	Not Significant
Social Interaction (X3) -> Investment Decisions (Y)	0.890	0.374	Not Significant
Considering the Past (X4) -> Investment Decisions (Y)	2.769	0.006	Significant

Source: processed data (2023)

### The Influence of Financial Literacy on Investment Decisions

Financial literacy has a significant influence on money market mutual fund investment decisions. Financial literacy as the initial concept of understanding and awareness of basic financial concepts such as the ability to calculate interest, basic financial capabilities in this case include: planning, allocating finances [13]. This is in line with Standard finance theory which explains the literacy possessed by a mutual fund investor such as financial knowledge and practice is a benchmark for investors' ability to choose rational investment decisions. So, it can be concluded that the higher the financial literacy owned by investors, the higher, better and more mature investment decisions.

### The Influence of Emotions on Investment Decisions

Emotions do not have a significant influence on money market mutual fund investment decisions. Emotions are related to investment decisions that have a high level of uncertainty [8]. Researchers assume that under any circumstances, the emotions of a money market mutual fund investor do not influence his investment decisions. This is because mutual funds are one of the investment instruments whose fluctuations are stable and tend to rise, therefore the majority of money market mutual fund investors tend not to worry about the capital to be invested so they invest with any emotion without worrying about the mutual funds invested going down. It can be concluded in this study; money market mutual fund investors do not involve any emotions when making investment decisions and investing in all emotions.

### The Influence of Social Interaction on Investment Decisions

Social Interaction does not have a significant influence on money market mutual fund investment decisions. Social Interaction is a relationship between individuals and individuals, individuals and groups, and groups and groups that influence or change the behavior and decisions of individuals or groups so that a reciprocal relationship occurs [14]. Millennial generation and Generation Z investors who invest in mutual funds tend to be independent and not influenced by the external environment and make investment decisions based on their conscience and own desires and do not involve other people such as fellow investors or brokers.

### The Influence of Considering the Past on Investment Decisions

Based on the results of the hypothesis test carried out, it can be concluded that Considering the Past has a significant influence on money market mutual fund investment decisions. Considering the Past is an event in the past that becomes a lesson and evaluation to determine



whether the event that has been experienced is desirable to return to or should be avoided in the future [15]. This is because Considering the Past is one of the most important factors that money market mutual fund investors have in investing, especially for the millennial generation and generation Z in Indonesia. These results are in line with the Behavioral Finance Theory which states that investors take investment actions based on their cognitive psychology [5]. Respondents invest by considering the past, such as if money market mutual funds have provided returns in the next period, then investors will be more confident in investing in the same mutual funds and will then increase their investment risk. If investors experience losses in certain mutual funds, then this will be a lesson and investors will tend to reduce the risk of investing in money market mutual funds. So, it can be concluded that the better the past in providing mutual fund investment returns, the better and more mature the investment decisions will be.

#### **4. Conclusion**

This study aims to analyze the influence of Financial Literacy, Emotions, Social Interaction and Considering the Past on money market mutual fund investment decisions (case studies of millennials and generation z in Indonesia). After testing the hypothesis, it can be concluded that the Financial Literacy Variable (X1) has a significant influence on Investment Decisions (Y). The emotion variable (X2) has no significant influence on investment decisions (Y). The Social Interaction variable (X3) does not have a significant influence on Investment Decisions (Y). The variable Considering the Past (X4) has a significant influence on Investment Decisions (Y). The suggestion in this study is that the next researcher to add variables beyond the psychological factors that have been discussed in this study. For investors in Indonesia who want to succeed in money market mutual fund investment, it is advisable to have adequate financial literacy, avoid psychological bias, should involve themselves in continuous learning, seek advice from experienced investors, and gather accurate information before making the right investment decisions. For the Indonesia Stock Exchange (IDX) as an organizer and investment provider to continue to collaborate with several brokers to continue to hold socialization and education about the introduction of the capital market and the importance of early investment in this case, not only theory but also practice.

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