Factors Affecting the Performance of Stock Investment in Jakarta

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Abstract

The purpose of this study is to explore the effect of Overconfidence Bias on Risk Taking Behaviour, Overconfidence Bias on Investment Decision Making Behaviour, Risk Taking Behaviour on Investment Decision Making Behaviour, Overconfidence Bias on Investment Decision Making Behaviour mediated by Risk Taking Behaviour, Investment Knowledge on Risk Taking Behaviour, Investment Knowledge on Investment Decision Making Behaviour, Investment Knowledge on Investment Decision Making Behaviour mediated by Risk Taking Behaviour by using or applying quantitative methods using non-probability sampling techniques with purposive sampling type, and the SEM PLS 3.0 analysis method. Respondents in the study were 464 people. Tests have proven that all hypotheses are accepted. Where self-confidence has a positive effect on decision-making behaviour either directly or indirectly, namely through the existing risks. Knowledge investment has also been shown to have a positive effect on investment decision behaviour, either directly or indirectly, namely through risk first. The biggest influence overall is on the Investment Knowledge variable, so the need for good knowledge in investing in stocks is very important.

Keywords
Overconfidence Bias, Investment Knowledge, Risk Taking Behaviour, Investment Decision Making Behaviour

1. Introduction
The outbreak of the Covid-19 pandemic is not only a threat to human health but also has an impact on economic growth in a country, especially Indonesia, the decline in the economic system is felt in the tourism, transportation, investment and other sectors. We cannot avoid this because positive cases of Covid-19 are also increasing and have an impact on the stock exchange. However, based on the 2020 Indonesia Stock Exchange report, there has been an increase in transactions by millennial stock investors in a number of transactions in the online capital market even though the Covid-19 case is rife (Ekonomi Bisnis Report, 2020). The rise of investor behavior during COVID-19, many millennial investors have an Overconfidence bias, so this can be a problem if it is not balanced with prudent behavior to bypass risks in making investment decisions in their shares.

According to Gill et al (2018) Overconfidence Bias refers to a biased way of looking at a situation that can be applied to stock investment decisions. In the midst of this up-and-coming stock investment activity, there are some people who have a negative perception of stock investment so that they need to have a fairly broad knowledge of stock investment, therefore investors should continue to increase their Investment Knowledge. Because as a good stock investor, it is certainly very good if you have good knowledge about stock investment knowledge. While investment is investing a certain amount of capital now for future profits (Syahyunan, 2015).

Biased behaviour is often found in millennials because of their relatively young age, so they tend to have a high level of emotion and lack of control, which can make them make investment decisions quickly. One of them is the Overconfidence Bias, this is a high level of confidence in the forecasts and information available to investors when making investment decisions.

There are several previous studies that discuss the influence of various elements or the influence of various factors on stock investment actors which are discussed in Behavioural Finance (Gill et all, 2018) which also discusses the influence of various elements on investment behaviour related to Behavioural Finance, namely the effects of different psychological biases. on everyone involved in the decision to invest in stocks. The existence of a strong influence between knowledge and investment decisions is in line with research conducted by Hamonangan (2007). This is different from the results of Ahmad Dahlan Malik's research (2017) where knowledge has no significant effect on investment decisions. The trigger for this lack of influence is the lack of investors to study and seek information about investing. The difference in the results of the two studies indicates a gap and bias between knowledge and investment decisions. There are still many inconsistent or contradictory findings or unresolved arguments related to the topic in question, such as the absence of influence between overconfidence and investment decision making in the research of Kengatharan & Kengatharan (2014).

Realizing this gap, this study aims to examine how Overconfidence Bias (Gill et all, 2018), Investment Knowledge (investor knowledge) (Nguyen, 2017) (Muktapa Leelapamornkit, Thananporn Sethjinda, 2020), Risk Taking Behaviour (tendency to take risks) (Faisal Abbas et.all, 2021); in influencing the choice of investment decisions (Investment Decision Making Behaviour) on millennial investors in Jakarta. Building a better understanding of influencing the investment decision making behaviour of millennial investors in Jakarta can certainly provide insight for policy makers and practitioners.

2. Literature Review

Behavioural Financial

Behavioural finance theory (Behavioural Finance Theory) has grown and adapted to the contradictions caused by its relationship to the Efficient Market Hypothesis (EMH), as well as to the phenomenal situation in the financial sector. With the support of several researchers, namely those who have pioneered the birth of the behavioural financial concept, it is revealed that the Efficient Market Hypothesis (EMH), which is a standard financial theory has limited ability to provide an explanation of stock price movements with anomalous nature and other phenomena that contradict the concept. tradition that has been built for quite a long time.

Barberies and Thaler (2003) put forward another concept that views financial behaviour as a new approach in understanding phenomena in the capital market as a response or response to dealing with difficulties by the traditional paradigm so that it can explain the anomalous events that exist. In a broad sense, some financial phenomena are in fact better projected with an irrational approach model and the things that underlie the irrational investment behaviour. There are several uniqueness or characteristics for individuals with their financial behaviour, namely investors usually behave normally but not rationally, investors have limits to control themselves, there is an influence of bias in investors that can make cognitive errors and result in wrong decisions.

Definition of Millennials

Generation Y or millennial generation is a term that became known and applied to the editorial companies of leading newspapers in the United States in August 1993. The millennial generation is used to refer to the generation born in 1981 to 1996. So that currently the average age of the millennial generation is 25 to 41 years (Katadata, 2020). Characteristics of Millennial Investors Millennial investors can be distinguished from previous generations by looking at the way millennial investors play stocks, according to Black Rock (2020) the way millennial investors play stocks is the millennial generation who can save as much as 18% of their income, millennials tend not to trust professionals finance and leverage a variety of high-tech tools and social media that allow them to leverage their wealth into the investment vehicle of their choice to determine financial planning, and millennials dedicate up to seven hours per month to reviewing their investments.

Definition of Investment Decision Making Behaviour

Investment Decision Making Behavior is categorized as a part of economics that affects individual behavior in decision making, such as including financial management in the present in order to get the benefits of financial behavior in the future. Decision making according to Siegel and Marconi (1989) is related to the mindset process, governance power and problem solving or finding solutions so that the individual's decision-making process can be influenced by the level of experience that the individual gains.

Stock investors should revise difficult judgments into easy decisions, which are easy when the complex decisions have been analyzed by investors, so investors should choose simplified options and choose those that have more value among others (Kahneman and Tversky, 2013). Anthony and Joseph (2017) consider investment decision making as a cognitive process because investors make decisions based on many available options. Investors usually carry out investment analysis using fundamental analysis, technical analysis, and valuation. This psychological principle is based on a cognitive bias that deviates from the norm or rationality in making investment decisions by investors. (Annu Anthony, 2017).

Definition of Overconfidence Bias

The bias of overconfidence, which is an excess of self-confidence, is referred to as a way of having bad prejudice in dealing with a situation, because it doesn't really care about the financial risks, it says that overconfidence is not a negative phenomenon. Different opinions from experts about the effect of overconfidence bias on market efficiency have made this bias controversial and interesting for further research (Gill et all 2018). This study determines the effect of overconfidence on investment decision-making behavior and its relationship to information seeking. According to Shiller 2015 (in Abul 2019), investors believe that they have more knowledge than other investors. The phenomenon of overconfidence has been studied by many researchers, including Hirshleifer and Luo (2001), Scheinkman and Xiong (2003), Wang (2001), Barber and Odean (2001), Ton and Dao (2014) and Daniel and Hirshleifer (2015).

Ton and Dao (2014) argue that investors who are overconfident then they can gain more from the market by using their emotions, although this is unlikely. Longjie an Anfeng (2017) found a positive correlation between overconfidence and the level of investment in the China Stock Market. Scheinkman and Xiong (2003) find that overconfidence causes a speculative bubble. Recent research by Riaz and Iqbal (2015) found that overconfidence has a very influential impact, which tends to be positive in relation to investment decisions on the Karachi Stock Exchange. In addition, a study from Antony et all (2017) also supports that the overconfidence bias is a cognitive bias. This is a tendency to overestimate one's skills and predictions for success. Referring to the statement of Kahneman and Tversky (1979), a person or organization is not always rational in assessing and choosing alternative decisions.

Definition of Investment Knowledge

Referring to Baihaqi (2016), knowledge means a group of data that has been managed by the mind which will later become the parts that make up a structured information system. Each learning activity that occurs will add information to each individual regarding cognitive, affective and psychomotor and ultimately result in changes in habits/behavior. Additional information can be obtained through various types of activities, including: teaching and learning activities in schools/campus; seminars held by private and paid parties, as well as those facilitated by the campus and the state. An example of a seminar that often attracts the interest of the younger generation is managing finances for investment. The information obtained will later be processed by each individual and form an interest which ultimately makes someone to do an activity.

Arifin (2007) defines investment as delaying consumption activities in the present in order to increase the value of consumption in the future. This is different from the statement by Syahyunan (2015) which states that investment is a tangible form of a commitment to allocate funds and time in the present to get returns in the future. An individual or organization that invests is an investor. Investors who buy shares have a desire to get a return from the distribution of dividends or the difference in share prices as a reward for the risk and time borne by investors.

Definition of Risk-Taking Behaviour

Risk is an important factor that is considered by stock investment players and everyone according to Tandia & Widanaptra (2016) where there are differences for some people who are able to accept the risks they face, some investors make investment decisions by choosing a risk that is not too high, and others choose to make quick profits by ignoring the risks involved. In the research of Gill.et.all (2018), there is Prospect Theory, which is an economic theory that shows individual behavior in explaining the decision to invest in their shares in risky circumstances.

Understanding risk implies anomalous circumstances that occur when expectations are not met. Uncertainty indicates the value of returns obtained by investors is not fixed in the future. Factors that must be considered by investors are not only the rate of return, but also the risks that may be experienced. Because risk and rate of return cannot be separated, there is a trade-off term in investment that requires investment decisions to be based on these two factors. According to Susilowati, 2017 where returns have a significant influence on risk, the greater the risk borne, the high risk faced is directly proportional to the high return to be obtained.

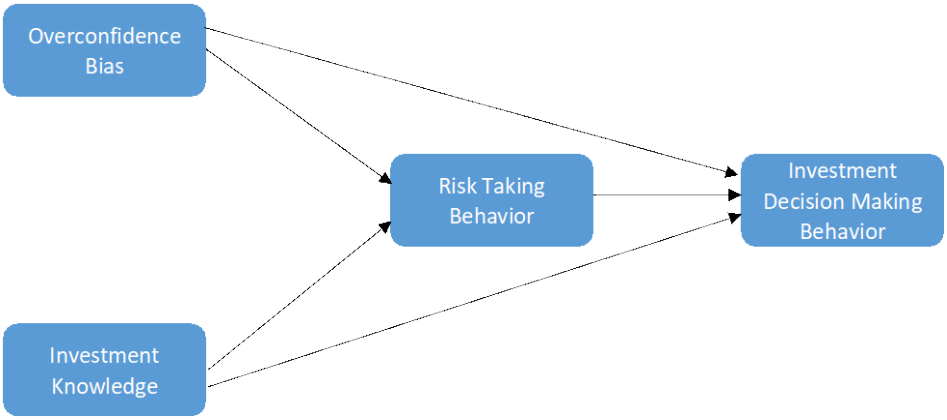

Figure 1. Research Model

Hypothesis Development

Relationship of Overconfidence Bias to Risk Taking Behavior

According to the results of the analysis from Nosic and Weber (2010), Damayanti (2019) states that someone who is overconfident has a positive influence on risk taking. Gill et all (2018), found that overconfidence is the behavior of individuals who are too confident or optimistic about something. Actually, a higher level of overconfidence means that the knowledge and abilities possessed are better than other individuals. Indicators in measuring the overconfidence variable should be owned in controlling investment returns from confidence in past success. Risk-taking behavior is the potential for behavior that results in negative actions (health risk behavior) and positive actions (exploratory risk behavior) (Skaar, 2009). Good overconfidence based on the experience of investors in investing in stocks is needed so that there is courage to buy a dream in the future even though there are many challenges or risks. Real stock investors don't need to be afraid of risk, because the bigger the risk, the bigger the compensation, the bigger the compensation. Actually, a higher level of overconfidence means that the knowledge and abilities possessed are better than other individuals. Indicators in measuring the overconfidence variable should be owned in controlling investment returns from confidence in past success. The link between the confidence bias seems to be in the same direction or in line with the risk behavior taken by millennial investors, where with a confident bias there is courage that can pass the risks that all stock investors will surely face, the size of the risks faced will certainly be passed well with confidence. biased self (Deb et al, 2018). Based on these studies, the following hypothesis can be built Overconfidence Bias has a positive effect on Risk Taking Behavior

Relationship between Investment Knowledge and Risk-Taking Behavior

In accordance with research from Dinc Aydemir et al (2017) that Investment Knowledge (Financial Literacy) has a positive effect on Risk Taking. Because with financial knowledge capital that exceeds the standard limit or is included in the high category ability, it can direct individuals to enter the world with stock investing activities. According to Muktapa Leelapamornkit Thananporn Sethjinda (2020), Investment Knowledge is the main capital or ability that a person must have regarding various aspects of investment starting from basic knowledge of investment assessment, risk level and return (investment). Risk-taking behavior is behavior that has the potential to produce negative actions (health risk behavior) and positive actions (exploratory risk behavior) (Faisal Abbas et.all, 2021) & (Fatina Akhtar et all, 2017). To avoid these existing risks, stock investors need to have knowledge in investing in their shares in order to minimize the risks they will face, because every stock investor certainly wants maximum profit which is a reward for the time and risk associated with the stock investment he chooses. Based on this, training on stock investment is necessary to minimize risk. Good Investment Knowledge needs to be homed in every professional stock investor to get the results of an analysis of all risks that will occur. The results of this risk analysis are considered by stock investors in facing the risk challenges. Armed with good knowledge will minimize the risks that exist even though these risks are unavoidable for millennial stock investors. So, Investment Knowledge has a positive effect on Risk Taking Behavior. There is a link between good knowledge investment and risk-taking behavior in investing in shares among millennials, of course, it is very helpful to minimize risk because every decision making is always a risk (Asfira et al, 2019). Based on these studies, the following hypothesis can be built Investment Knowledge has a positive effect on Risk Taking Behavior

H1: Overconfidence Bias has a positive effect on Risk Taking Behavior.

Relationship between Risk Taking Behavior and Investment Decision Making Behavior

According to Farooq et al., (2015) it is explained that Risk Taking Behavior has a positive and significant effect on Investment Decision Making Behavior. Through risk-taking behavior, such as the nature of millennials themselves, this risk is actually one of the important factors that are taken into consideration by stock investment players from all existing uncertain situations. Without risk taking behavior, an investment decision will not occur. The effect of this risk greatly affects investors in making a stock investment decision. so Risk Taking Behavior has a positive effect on Investment Decision Making Behavior. The emergence of the link between risk and decision making has the same direction where risk-taking behavior will determine the decision making of millennial investors (Asfira et al, 2019). Based on these studies, the following hypothesis can be built Risk Taking Behavior has a positive effect on Investment Decision Making Behavior.

H2: Investment Knowledge has a positive effect on Risk Taking Behavior.

Relationship of Overconfidence Bias with Investment Decision Making Behavior

Overconfidence bias has a positive effect on Investment Decision according to Gill et all (2018). Having high or excessive self-confidence has a positive impact in making decisions to invest in shares in the JCI on the IDX. The behavior of stock investors who are too confident can get many advantages in the capital market. Longjie Anfeng (2017) found a positive correlation between Overconfidence and the level of investment in the stock market. The existence of advantages derived from the overconfidence behavior of a stock investor often occurs because this courage can produce an investment decision that is expected by stock investors. Lambert et al. (2012) stated that each person has a level of confidence that is more daring to make investment decisions. So the relationship between Overconfidence Bias and Investment Decision Making Behavior has a significant relationship. It can be seen from this that the behavior of self-confidence biased has a direct relationship with the decision making of millennial investors. Based on these studies, the following hypothesis can be built: the relationship between Overconfidence Bias and Investment Decision Making Behavior has a significant relationship.

H3: Risk Taking Behavior has a positive effect on Investment Decision Making Behavior.

Sarwar and Afaf (2016) suggest that overconfidence behavior can mean a sense of confidence in each individual when taking a policy by considering various available information to make investment decisions. In his research, overconfidence has a positive effect on investment decisions. It can be concluded that if an investor has high overconfidence, then the investor tends to take a larger investment as well. Lambert et al. (2012) stated that each person has a level of confidence that is more daring to make investment decisions. In addition, according to Farooq et al., (2015) explained that Risk Taking Behavior has a positive and significant effect on Investment Decision. There is a relationship between Overconfidence Bias and Risk-Taking Behavior and there is a link between Risk Taking Behavior and Investment Decision Making Behavior, so that every investor always goes through risks to make decisions in investing in stocks. With the mediation of Risk-Taking Behavior, millennial stock investors who have Overconfidence behavior are expected to be able to pass the risk by making good decisions. Based on these studies, the following hypothesis can be built Overconfidence Bias relationship has a positive effect on Investment Decision Making Behavior which is mediated through Risk Taking Behavior.

H4: Overconfidence Bias has a positive effect on Investment Decision Making Behavior.

Relationship between Investment Knowledge and Investment Decision Making Behavior

Huston (2010) suggests that financial knowledge consists of additional application dimensions, meaning that a person must have the ability and confidence to use financial knowledge which ultimately must make these financial decisions. Having good knowledge for an investor is certainly very necessary in making the right decision. Therefore, the relationship between Investment Knowledge and Investment Decision is positive. Decision making is vital for stock investors so that Investment Knowledge is needed as capital for stock investors before making their decisions. The need to learn science about prospect theory so that investors can revise complex valuations into easy decisions after going through several stages with the final stage choosing a higher value than others (Kahneman and Tversky, 2013). Adequate knowledge can certainly determine a good decision, like an investor who is reliable in making decisions in investing in stocks. The relationship between knowledge and decision making seems to be unidirectional, meaning that if knowledge investment improves, it is hoped that the decisions taken by millennial investors will also improve. So the relationship between Investment Knowledge has a positive effect on Investment Decision Making Behavior. Based on these studies, the following hypothesis can be built: Investment Knowledge has a positive effect on Investment Decision Making Behavior.

H4a: Overconfidence Bias has a positive effect on Investment Decision Making Behavior which is mediated through Risk Taking Behavior.

Financial literacy is closely related to investment decisions because the higher the literacy or knowledge of finance (Investment Knowledge), the better in making investment decisions. This shows that financial literacy has a significant positive effect on investment decisions (Islamoğlu et al., 2015). Financial literacy has a significant positive effect on investment decisions because an investor's knowledge shows the more information he knows, the more appropriate a decision will be made according to the investor's wishes (Garg & Singh, 2018a). In addition, according to Farooq et al., (2015) explained that Risk Taking Behavior has a positive and significant effect on Investment Decision. The existence of a link between knowledge and risk, as well as a unidirectional relationship between risk and decision making, mediation of Risk-Taking Behavior is needed by millennial stock investors in training their ability to overcome unavoidable risks and be able to make good stock investment decisions. Based on these studies, the following hypothesis can be built Investment Knowledge has a positive effect on Investment Decision Making Behavior which is mediated through Risk Taking Behavior.

H5: Investment Knowledge has a positive effect on Investment Decision Making Behavior.
H5a: Investment Knowledge has a positive effect on Investment Decision Making Behavior which is mediated through Risk Taking Behavior.

3. Methods

Research Design
The subjects in this study are millennial stock investors (aged 25 - 41 years) who live in Jakarta and have invested in stocks for at least the last 1 year. The research location is in Jakarta because as has been discussed in Chapter I, the highest penetration of share investors is in the Jakarta area during the Covid-19 pandemic.

Data Source
Sekaran and Bougie (2016) divide the types of data sources into two, namely primary data and secondary data. In this study, primary data was obtained and collected directly by researchers through informant sources, namely individuals who could be the results of filling out online questionnaires distributed through google forms and interviews with millennial stock investors. While secondary data was obtained by researchers through literature and previous studies related to topics related to the variables Overconfidence Bias, Investment Knowledge, Risk taking Behavior, Investment Decision Making Behavior. The form of the literature can be in the form of previous research, government publications, laws and regulations, as well as from the internet.

Research Variable
According to Saunders et al., (2016), several types of variables used in this study are the independent variables in this study are Overconfidence Bias and Investment Knowledge, the dependent variable in this study is Investment Decision Making Behavior, and the mediating variable in this study is Risk Taking Behavior.

Variable Operation
The variables in this study are Overconfidence Bias, Investment Knowledge, Risk taking Behavior, and Investment Decision Making Behavior. The operationalization of variables is presented as follows (Table 1)

Table 1 Table of Operational Variables

Variable	Indicator
Overconfident Bias (Gill, Khurshid, Mahmood., & Ali, 2018) & (Anu.Antony, 2017)	1. I am confident in my ability to do better than others in choosing stock investment products 2. I believe that the stock investment product I chose will provide higher returns than other non-stock investment products. 3. I feel that my ability to predict the price of stock investment products is better than other people 4. I invest in riskier stock investment products with the aim of maximizing profit 5. I feel that the stock investment product that I run is the right one

	6. I am sure that the stock investment product I chose will give positive results 7. I believe that my ability to invest in stocks is above the average for other investors. 8. I believe that I have a better stock investment experience than other investors.
Investment Knowledge (Muktapa Leelapamornkit Thananporn..Sethjinda ,2020)	1. I have good knowledge and understanding of stock investing 2. I do a calculation analysis to find out the return that will be obtained before choosing a company to invest in 3. I understand that in stock investing, high risk will result in high profits and viceversa. 4. I study the related information & data in detail before investing in stocks. 5. I am very satisfied with my current stock investment. 6. My current stock investment can meet all my financial goals. 7. I am confident with my current stock investment. 8. I allow financial experts to manage my stock investments 9. I understand the types of stock investment products 10. I understand the risks and benefits of investing in stocks
Risk Taking Behavior (Faisal Abbass et.all, 2021) & (Fatina Akhtar et all,2017) & (AF Rindorindo, 2020)	1. I prefer to invest in stock instruments from large and reputable companies 2. I don't hesitate to invest in stock instruments with high returns even though they have a high level of risk 3. Investing in stock instruments is a part of my life 4. I take the time to analyze my stock investment 5. I spend a lot of time managing my stock investments 6. By investing in stocks, my social activities are limited
Investment Decision Making Behavior (Gill, Khurshid, Mahmood., & Ali, 2018)	1. I consider the level of risk associated with a particular stock before investing in the stock market 2. I make sure that my investment in stocks has a safe level of investment decision making 3. Usually I get the expected return on stock investment decisions 4. I want to get the expected return on all my stock investments. 5. Usually I invest in stocks at the right period 6. Usually the stock investment product that I choose, the results can be as expected.

4. Data Collection

In the questionnaire, researchers used closed questions so that respondents could answer quickly, making it easier for researchers to analyze data and tabulate the results of all the results of the questionnaire that had been collected. Here closed questions are questions that direct respondents to predetermined alternative answers.

This data collection was carried out by conducting field research, namely by distributing questionnaires distributed to respondents with the criteria of being stock investment players who are millennial stock investors who live in Jakarta and have invested in stocks for at least 1 year. Primary data collection through surveys to respondents was carried out in the period from March to May 2022.

The sample of this study was taken from millennial stock investors who have at least made stock transactions during the last 1 year who are domiciled in the Jakarta area. the sample used in this study is a minimum or at least 340 samples.

The type of sampling design is divided into probability sampling and non-probability sampling, where probability sampling is that elements in the population have an equal chance of being selected as research subjects and non-probability sampling, which is where elements do not have the same chance of being re-elected as subjects. research (Sekaran & Bougie, 2016). According to Notoatmodjo (2010) purposive sampling is sampling based on certain considerations such as population characteristics or previously known characteristics. So, in this study, sampling will be carried out using a non-probability sampling technique with purposive sampling.

Data Analysis Method

The hypothesis testing of this research was carried out by analyzing data using PLS-SEM (Partial Least Square Structural Equation Modeling) with SmartPLS version 3.0 software to validate measurements and test hypotheses. In PLS-SEM there are two processes that must be met when testing data, namely the measurement model and the structural model (Hair et al., 2016). The measurement of the model can be seen from the results of testing the validity and reliability.

5. Results And Discussion

Demographic

The questionnaires were distributed through messenger platforms such as Line and WhatsApp as well as several social media platforms such as Facebook, Twitter, & Instagram. The results of the questionnaire collected as many as 464 respondents who meet the criteria and have filled in this study. The following are some classifications of respondent identity profiles as supporting data in this study (Table 2)

Table 2. Respondent Profile

Profile Respondent	Characteristics	Amount Respondent	Percentage
By Gender	Male	271	58 %
	Female	193	42 %
By Age	25 years – 30 years	178	38 %
	31 years – 36 years	169	37 %
	37 years – 41 years	117	25 %
By Domicille	Central Jakarta	90	19 %
	North Jakarta	125	27 %
	South Jakarta	129	28 %
	West Jakarta	90	19 %
	East Jakarta	30	7 %
By Last Education	Senior High School	5	1 %
	Associate Degree	51	11 %
	Bachelor Degree	185	40 %
	Master Degree	162	35 %
	Doctoral Degree	61	13 %
By Job	Student	107	23 %
	Part – Time	78	17 %
	Employee	111	24 %
	Professional	61	13 %
	Enterpreneur	107	23 %
By Monthly Cost	1 – 5 million	222	48 %
	6 – 10 million	66	14 %
	11 – 15 million	40	9 %
	16 – 20 million	33	7 %
	21 – 25 million	33	7 %
	26 – 30 million	33	7 %
	> 30 million	37	8 %
By the Length of Investing in Stocks	1 – 3 years	240	52 %
	3 – 5 years	141	30 %
	>5 years	83	18 %

By Per-Transaction Share Investment	1 – 15 million	275	59 %
	15 – 30 million	88	19 %
	30 – 45 million	54	12 %
	45 – 60 million	26	6 %
	>60 million	21	4 %
Based on the Intensity of Monthly Stock Investment Transactions	1 – 5 times	197	43 %
	6 – 10 times	173	37 %
	> 10 times	94	20 %

Actual Study Test Results

This study will use 464 samples of data from which validity and reliability tests will be carried out to determine whether the questionnaire items held are appropriate to measure the research objectives to be achieved, as well as to measure the consistency of respondents' answers. In this test, it will be declared valid when the value of factor loading is above 0.5 and the value of Average Variance Extracted (AVE) is above 0.5. While this test can be declared reliable when the value of Cronbach's alpha and composite reliability has a value above 0.6. The test results for the Overconfidence Bias, Investment Knowledge, Risk Taking Behaviour, and Investment Decision Making Behavior variables can be seen in Table 3.

Table 3 Convergent Validity and Reliability Test Results

Variable	Item	Loading Factor	Average Variance Extracted (AVE)	Cronbach's Alpha	Composite Reliability
Overconfidence Bias (OB)	OB1	0,888	0,777	0,959	0,965
	OB2	0,863			
	OB3	0,885			
	OB4	0,857			
	OB5	0,876			
	OB6	0,854			
	OB7	0,907			
	OB8	0,918			
Investment Knowledge (IK)	IK1	0,867	0,753	0,963	0,968
	IK2	0,881			
	IK3	0,883			
	IK4	0,881			
	IK5	0,903			
	IK6	0,886			
	IK7	0,908			
	IK8	0,774			
	IK9	0,813			
	IK10	0,872			
Risk Taking Behavior (RTB)	RTB1	0,866	0,740	0,929	0,945
	RTB2	0,877			
	RTB3	0,899			
	RTB4	0,891			
	RTB5	0,858			
	RTB6	0,764			
Investment Decision Making Behavior (IDMB)	IDMB1	0,907	0,815	0,954	0,963
	IDMB2	0,892			
	IDMB3	0,903			
	IDMB4	0,895			
	IDMB5	0,906			
	IDMB6	0,912			

In Table 3, it can be seen that 8 items for the Overconfidence Bias variable, 10 items for the Investment Knowledge variable and 6 items each for the Risk-Taking Behaviour variable and the Investment Decision Making Behavior

variable, all variables have met the requirements for testing convergent validity and reliability. This is because the value of the factor loading is above 0.5 and the average variance extracted (AVE) value is above 0.5 so that all question items are valid. Furthermore, for the value of Cronbach's alpha and composite reliability, the entire questionnaire item has a value above 0.7 so it can be concluded that the data is declared reliable. This test is also supported by discriminant validity which looks at the value of the Fornell-Larcker criterion as can be seen in Table 4.

Table 4 Fornell-Larcker Discriminant Validity Test Results

	IDMB (Investment Decision Making Behavior)	IK (Investment Knowledge)	OB (Overconfidence Bias)	RTB (Risk Taking Behavior)
IDMB	0,903			
IK	0,910	0,868		
OB	0,880	0,904	0,881	
RTB	0,835	0,845	0,818	0,860

Based on Table 5.3, the square root AVE value of each variable has the largest value in each construct so that it can be concluded that there is no problem with the Fornell-Larcker criteria.

Hypothesis Test

In this study, a hypothesis can be concluded to have a significant effect if the t-value is greater than 1.96, while if the t-value is less than 1.96, the hypothesis does not have a significant effect. In testing the hypothesis will use a 95% confidence level or with an error rate of 5%. The test was carried out using the bootstrapping technique with 5,000 subsamples in accordance with the recommendations of Hair et al. (2017).

Table 5 Direct Effect Test Results

	Original Sample (O)	**T Statistics (|O/STDEV|)**	**P Values**	**Conclusion**
OB → RTB	0,282	4,845	0.000	Significant
IK → RTB	0,588	10,517	0.000	Significant
RTB → IDMB	0,193	4,852	0.000	Significant
OB → IDMB	0,240	4,453	0.000	Significant
IK → IDMB	0,528	9,210	0.000	Significant
OB → IDMB by RTB	0,054	3,287	0.001	Accepted
IK → IDMB by RTB	0,113	4,386	0,000	Accepted

Evaluation of the path coefficient structural model can be seen from the results of each relationship between variables that can be declared significant if the t-statistics value is> 1.96 and the p-value is <0.05. It can be seen from Table 5 that the Overconfidence Bias (OB) variable on the Risk-Taking Behavior (RTB) variable has a t-statistics value of 4.845 which is greater than 1.96 and a p-value of 0.000 which is smaller than 0.05. With this it can be stated that H_1 is accepted, or it means that the Overconfidence Bias (OB) variable influences the Risk-Taking Behavior (RTB) variable. (Table 5)

The Investment Knowledge (IK) variable on the Risk Taking Behavior (RTB) variable has a t-statistics value of 10.517 which is greater than 1.96 and a p-value of 0.000 which is smaller than 0.05. With this it can be stated that H_2 is accepted or it means that the Investment Knowledge (IK) variable has an effect on the Risk Taking Behavior (RTB) variable.

The Risk Taking Behavior (RTB) variable on the Investment Decision Making Behavior (IDMB) variable has a t-statistics value of 4.852 which is greater than 1.96 and a p-value of 0.000 which is smaller than 0.05. With this it can be stated that H_3 is accepted or it means that the Risk Taking Behavior (RTB) variable affects the Investment Decision Making Behavior (IDMB) variable.

The Overconfidence Bias (OB) variable on the Investment Decision Making Behavior (IDMB) variable has a t-statistics value of 4.453 which is greater than 1.96 and a p-value of 0.000 which is smaller than 0.05. With this it can be stated that H_4 is accepted or it means that the Overconfidence Bias (OB) variable directly affects the Investment Decision Making Behavior (IDMB) variable.

The Investment Knowledge (IK) variable on the Investment Decision Making Behavior (IDMB) variable has a t-statistics value of 9.210 which is greater than 1.96 and a p-value of 0.000 which is smaller than 0.05. With this it can be stated that H_5 is accepted or it means that the Investment Knowledge (IK) variable directly affects the Investment Decision Making Behavior (IDMB) variable.

The Overconfidence Bias (OB) variable on the Investment Decision Making Behavior (IDMB) variable through the Risk-Taking Behavior (RTB) variable, which has a P-value of 0.001 less than 0.05 so it can be said that there is an influence which is indirectly significant, or in other words, the Risk-Taking Behavior (RTB) variable can significantly mediate the effect of the Overconfidence Bias (OB) variable on the Investment Decision Making Behavior (IDMB) variable. And the Investment Knowledge (IK) variable on the Investment Decision Making Behavior (IDMB) variable through the Risk-Taking Behavior (RTB) mediation variable, which has a P-value of 0.000 less than 0.05 so it can be said that there is a significant indirect effect, or in other words Another mediating variable is Risk Taking Behavior (RTB) which can significantly mediate the effect of Investment Knowledge (IK) on Investment Decision Making Behavior (IDMB). (Table 6)

Table 6 Summary of Hypothesis Test Results

Hypothesis	T - Statistic	P-Values	Results
H1. Overconfidence Bias has a positive effect on Risk Taking Behavior	4.845	0.000	**H1 Accepted**
H2. Investment Knowledge has a positive effect on Risk Taking Behavior	10.517	0.000	**H2 Accepted**
H3. Risk Taking Behavior has a positive effect on Investment Decision Making Behavior	4.852	0.000	**H3 Accepted**
H4. Overconfidence Bias has a positive effect on Investment Decision Making Behavior	4.453	0.000	**H4 Accepted**
H4.a Overconfidence Bias has a positive effect on Investment Decision Making Behavior mediated by Risk Taking Behavior	3.287	0.001	**H4.a Accepted**
H5. Investment Knowledge has a positive effect on Investment Decision Making Behavior	9.210	0.000	**H5 Accepted**
H5.a Investment Knowledge has a positive effect on Investment Decision Making Behavior mediated by Risk Taking Behavior	4.386	0.000	**H5.a Accepted**

The results of hypothesis testing will be described as follows:

1) Hypothesis 1: Overconfidence Bias has a positive effect on Risk Taking Behavior.

2) Hypothesis 2: Investment Knowledge has a positive effect on Risk Taking Behavior.
3) Hypothesis 3: Risk Taking Behavior has a positive effect on Investment Decision Making Behavior
4) Hypothesis 4: Overconfidence Bias has a positive effect on Investment Decision Making Behavior
5) Hypothesis 4 a: Overconfidence Bias has a positive effect on Investment Decision Making Behavior mediated through Risk Taking Behavior
6) Hypothesis 5: Investment Knowledge has a positive effect on Investment Decision Making Behavior
7) Hypothesis 5a: Investment Knowledge has a positive effect on Investment Decision Making Behavior mediated through Risk Taking Behavior

6. Conclusion

This study aims to analyze the factors that influence millennial stock investment in Jakarta during the Covid-19 pandemic. The variables contained in this study are exogenous variables, namely Overconfidence Bias and Investment Knowledge, mediating variables are Risk Taking Behavior, and endogenous variables are Investment Decision Making Behavior. After the test was carried out, the results obtained, there were seven hypotheses that were accepted, this happened because at the time of the study there was a trend of stock investment among millennials, especially in Jakarta. What we know is that there are some millennial stock investors during the Covid-19 pandemic who have not worked or are still students, some are working part time, working from home only during social distancing, so there is free time to invest in stocks that are worth investing in. provide more benefits than just sitting at home alone. All hypotheses in this study are accepted, namely Overconfidence Bias has a positive effect on Risk Taking Behavior, Investment Knowledge has a positive effect on Risk Taking Behavior, Risk Taking Behavior has a positive effect on Investment Decision Making Behavior, Overconfidence Bias has a positive effect on Investment Decision Making Behavior, Overconfidence Bias has a positive effect on Investment Decision Making Behavior mediated through Risk Taking Behavior, Investment Knowledge has a positive effect on Investment Decision Making Behavior, Investment Knowledge has a positive effect on Investment Decision Making Behavior mediated through Risk Taking Behavior.

Based on the results of the research above, the authors intend to provide suggestions for further researchers, with all the limitations in the scope of this research, namely the limited number and characteristics of the samples that have been studied. It is advisable for the next research to expand the coverage area not only in Jakarta, and wider age category as well. Further research can also examine other variables outside of Overconfidence Bias, Investment Knowledge, Risk Taking Behavior and Investment Decision Making Behavior such as the Herding Behavior, Investment Performance variables which are very interesting to explore so that further research can analyze more deeply about what factors only that can affect the Investment Decision Making Behavior of stock investors. Support from the Regulator/Government is needed to protect investors, especially related stock investors. Namely by applying Law Reinforcement, because the information needed by investors is accurate and adequate information, but usually the information conveyed by issuers is only information that still needs to be reanalyzed. Therefore, stock investors should seek advice from securities companies or investment advisors.

References

Akhtar, F., & Das, N. Predictors of investment intention in Indian stock markets: Extending the theory of planned behaviour. International Journal of Bank Marketing, 37(1), 97–119. (2018) https://doi.org/10.1108/IJBM-08-2017-0167

Antony, A., & Joseph, A. I. Influence of Behavioural Factors Affecting Investment Decision—An AHP Analysis: Https://Doi.Org/10.1177/0972622517738833, 16(2), 107–114. (2017a). https://doi.org/10.1177/0972622517738833

Antony, A., & Joseph, A. I. Influence of Behavioural Factors Affecting Investment Decision—An AHP Analysis: Https://Doi.Org/10.1177/0972622517738833, 16(2), 107–114. (2017b). https://doi.org/10.1177/0972622517738833

Barber, B. M., & Odean, T. Trading is hazardous to your wealth: The common stock investment performance of individual investors. Journal of Finance, 55(2), 773–806. (2000). https://doi.org/10.1111/0022-1082.00226

Barber, B. M., & Odean, T. Boys will be Boys: Gender, Overconfidence, and Common Stock Investment. The Quarterly Journal of Economics, 116(1), 261–292. (2001). https://doi.org/10.1162/003355301556400

Daniel, K., & Hirshleifer, D. Overconfident Investors, Predictable Returns, and Excessive Trading. Journal of Economic Perspectives, 29(4), 61–88. (2015). https://doi.org/10.1257/JEP.29.4.61

Daniel, K., & Titman, S. Market Efficiency in an Irrational World. Https://Doi.Org/10.2469/Faj.V55.N6.2312, 55(6), 28–40. (2019). https://doi.org/10.2469/FAJ.V55.N6.2312

Ghozali, I. Aplikasi analisis multivariate dengan program IBM SPSS 25 edisi ke-9. In Badan Penerbit Universitas Diponegoro. Universitas Diponegoro. (2018).

Gill, S., Kashif Khurshid, M., Mahmood, S., & Ali, A. Factors Effecting Investment Decision Making Behavior: The Mediating Role of Information Searches. European Online Journal of Natural and Social Sciences, 7(4),

758–767. (2018).
Hair, J. F., Ringle, C. M., & Sarstedt, M. PLS-SEM: Indeed, a Silver Bullet. Https://Doi.Org/10.2753/MTP1069-6679190202, 19(2), 139–152. (2014). https://doi.org/10.2753/MTP1069-6679190202
Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. European Business Review, 26(2), 106–121. (2014). https://doi.org/10.1108/EBR-10-2013-0128/FULL/XML
Kahneman, D., & Tversky, A. Prospect Theory: An Analysis of Decision Under Risk. 99–127. (2013). https://doi.org/10.1142/9789814417358_0006
Longjie, X., & Anfeng, Z. The Impact of Managers Overconfidence on Corporate Investment. International Journal of Social Science and Humanity, 7(2), 109–114. (2017). https://doi.org/10.18178/IJSSH.2017.V7.804
Nosi'c, A., & Weber, M. How riskily do i invest? The role of risk attitudes, risk perceptions, and overconfidence. Decision Analysis, 7(3), 282–301. (2010). https://doi.org/10.1287/DECA.1100.0178
Riaz, L., & Imran Hunjra, A. Impact of Psychological Factors on Investment Decision Making Mediating by Risk Perception: A Conceptual Study. Middle East Journal of Scientific Research, 12(6), 789–795. (2012). https://doi.org/10.5829/idosi.mejsr.2012.12.6.1777 .
Sarwar, A., & Afaf, G. A Service of zbw Standard-Nutzungsbedingungen: A comparison between psychological and economic factors affecting individual investor's decision-making behavior ABOUT THE AUTHORS. https://doi.org/10.1080/23311975.2016.1232907 (2016)
Scheinkman, J. A., & Xiong, W. Overconfidence and Speculative Bubbles. Https://Doi.Org/10.1086/378531, 111(6), 1183–1219. (2015). https://doi.org/10.1086/378531
Ton, H. T. H., & Dao, T. K. The Effects of Psychology on Individual Investors' Behaviors: Evidence from the Vietnam Stock Exchange. Journal of Management and Sustainability, 4(3). (2014). https://doi.org/10.5539/JMS.V4N3P125
Tversky, A., & Kahneman, D. Judgment under Uncertainty: Heuristics and Biases. Science, 185(4157), 1124–1131. (1974). https://doi.org/10.1126/SCIENCE.185.4157.1124
Umar Sekaran & Roger Bougie. Research Methods for Business A Skill Building Approach - Uma Sekaran, Roger Bougie - Google Books. https://books.google.co.id/books?hl=en&lr=&id=Ko6bCgAAQBAJ&oi=fnd&pg=PA19&dq=research+methods+for+business&ots=2C-R_5HXpN&sig=IcO1sP8SM4Q_w4B4mGaJOXXT96U&redir_esc=y#v=onepage&q=research methods for business&f=false (2013).
Wang, F. A. Overconfidence, Investor Sentiment, and Evolution. Journal of Financial Intermediation, 10(2), 138–170. (2001). https://doi.org/10.1006/JFIN.2001.0311