

## **CHAPTER I**

### **INTRODUCTION**

#### **1.1. Background**

Investing in the capital market, in particular, has always been a hot topic of discussion in the era of globalization as it is now. Any country's economic fundamentals, developed or developing, now include capital market investments, including Indonesia. Even though the capital market in Indonesia has developed rapidly in recent times, Investors are driving the expansion of this industry with the aim of generating a beneficial impact on the Indonesian economy. Based on this assessment, the Composite Stock Price Index (IHSG) of the Indonesian Stock Exchange is being monitored.

Investment is one of the needs today. Tandelilin (2010) it is stated that speculation is the liability of a certain amount of money or assets at this time in order to make a profit from now. To benefit from financial backers must make wise business choices. Financial backers need to take pains to think about the profits being made and the economists' ongoing bets Jogiyanto (2010) This expresses that return and chance are decidedly related to the end goal that the more prominent the normal return, the more important the gamble looked at by financial backers. Higher dangers increase the probability that speculation will fall flat.

Basically, someone investing has the goal of getting a future with a decent life. Every investor will maximize their wealth as well as possible so as to produce higher expected returns compared to other investments. This is what a good thought must do

in order to get a good profit. So the decisions taken really must be good because they can determine the future.

In relation to investors investing through securities, investment decision making will be carried out. We call decision making in this investment as investment decision, where investor decision making should be rational. A rational investment decision means that an investor makes a decision by considering all information related to the chosen investment instrument, and knowing the risks and potential benefits behind the investment decision. Keswani et al (2019) explained He understands that traditional monetary science has long been used as a driver of speculative decision making by financial proponents, arguing that most conventional monetary hypotheses depict financial proponents as sane leaders. The sensible design is for financial backers to obtain, rotate, and utilize accessible data in their speculative choices. These findings align with the assertion made by Natapura (2009) that investors should use logical reasoning while forming their opinions. Daniel Kahneman, a clinician, and Vernon Smith, an economist, are recognised as distinguished scholars in the field of behavioural finance and recipients of the Nobel Prize where many believe that some investors are irrational in their investment decisions, because of the inability to process information as in traditional finance, and instead tend to find a way to find a way shortcuts in taking investment decisions. Virlics (2013) explains that to get a good investment decision, investors need to fully and truly understand the opportunities that exist, and these decisions should not be made hastily. Investors who are trapped into

irrationality in making investment decisions are allegedly influenced by behavioral finance.

Decision-making theory has undergone a long evolution in recent decades. The assumption of rationality expected utility theory that has been used in explaining decision-making theory began to be criticized. Some empirical research shows that economic agents not only use their rationality in making decisions, but are also influenced by behavioral factors (Tversky & Kahneman, 1988; Gill, Khurshid, Mahmood, & Ali, 2018; Cartwright, 1998). The findings suggest that economic agents can provide emotional responses when making investment decisions, potentially causing a number of psychological biases that lead to irrational behavior.

The terms rational and irrational behavior in the realm of financial science can be explained as follows. When an economic agent makes investment decisions based on the laws of positive finance by promoting comprehensive quantitative analysis and simulations based on decision trees to choose the best decision (highest utility), then the economic agent can be said to be rational. Conversely, when individuals allow their emotions to influence their financial decisions, it might result in irrational conduct influenced by psychological prejudices. (herding, overconfidence, disposition effect, conservatism, to availability). This contention is in accordance with the exploration discoveries (Bakar & Yi, 2016) which shows that investment decisions can be influenced by various behavioural biases, various havioral biases themselves, namely *herding bias*, *overconfidence bias* and *disposition effecct*

According to Ricciardi (2000) Undertake financial efforts to understand and attempt to understand examples of financial enablers' reasoning, including the deep cycles involved and the extent of their impact on dynamic cycles. In general, social money seeks to understand the what, why and how of financial support and planning, based on a human perspective. The research in the field of finance at this time is increasingly numerous and interesting because actors in the financial sector (investors, traders, financial managers, investment managers) are individuals who have certain biases. *Behavioral finance* gained international recognition after Daniel Kahneman and Vernon Smith won the Nobel Prize in Economics in 2002 for their years of dedication to developing a fusion of psychology that explores human behavior with finance uses mathematical and statistical calculations

*Herding Behavior is unreasonable way ofl behavior of investors* who emulate this behavior of other investors in determining the choice to invest rather than doing their own analysis in their investment decisions. Investor decisions that are followed are investors who have more information so that they are considered more appropriate. While crowding conduct happens, stock costs in the securities exchange don't reflect the real state of the economy so that there can be stock pricing errors due to bias In pursuing the option to contribute. When wise dynamic behavior patterns are disrupted, very high costs can develop. Therefore, introducing crowd behavior on financial exchanges is important to find out how objective financial supporters are in making speculation choices so as not to make the economic situation wasteful and lead to an emergency. According to Lintner, (1998) Monetary way of behaving is the

investigation of how people decide and follow up on data to pursue informed venture choices. Hence, data flowing in the capital market can also impact financial backers' speculation choices.

Then *overconfidence* is a category of psychological bias where a person believes he has knowledge, His capacities are better than expected, and lead to misleading assumptions. Nofsinger and Hirschey (2005), state that a person is said to be overconfident when he has an overestimate of his abilities and actual knowledge. Overconfidence is one of the cognitive biases in financial behavior, where a person's tendency to make decisions unwittingly gives excessive weight to the assessment of knowledge, accuracy of information held and ignores publicly available information (Fischhoff et al., 1977). In addition, (Barber & Odean, (2001) said because male investors tend to behave more overconfidence then they tend to trade more compared to female investors. However, empirical research conducted by Bradford De Long et al (1990), shows that overconfidence behavior does not always end in harm.

After that, behavioural bias also includes disposition bias, where Ploner & Nada (2020) conducted research to determine the level of disposition bias by conducting experiments by asking all research subjects to choose investment decision actions. All options have the same probability of "profit/loss". The investment decisions of the subjects regarding when to sell and when to buy are based on the characteristics of the investment type of the research subjects – in the assumption of utilization of maximum risk aversion, the tendency of investment decisions to "hold" investment instruments owned must be observed from the first investment decision. The result is based on the

disposition effect, the tendency of investor investment decisions is that when they are losing, investors tend not to sell, and keep their shares compared to when the investor's position is in a profit position, where the after effects of this study in the disposition bias behavior. In addition, Pangeran (2007) He also led research into the trend of attitudes towards speculative options, and found that investment direction, namely the specific process of holding stocks when they are confused and selling productive offers quickly, has been proven correct, using exploratory techniques and contextual analysis. in Indonesia.

The existence of bias in investor investment decisions has been proven through many studies and researches. In this research proposal, researchers took 3 biases to be studied, namely Herding bias, overconfidence bias, and disposition bias as the object of research on investment decisions because the author sees many incidents of investors who are trapped and harmed by investment decisions caused by these three biases. In this study, researchers sampled individual investors in the Semarang Investor Community such as KSPM FEB Undip, KSPM Unimus and other Stock Communities, because the communit centered into individual segments. Panic selling that caused the IHSG to fall, Very high level of trust of financial backers or investor, and propensity of investors' investment decisions to hold stocks that lost money and realized profits too quickly when the stocks held were in a profitable position were the reasons why researchers took this research topic. *Disposition effect* is a behavior of an investor which according to some studies that indeed the behavior can be found in an investor in the capital market. Where these investors have their own behavior. Financial

behavior that seeks to explain and understand how investors behave by involving emotional processes when making decisions or as we know behavioral finance (Ricciardi , 2000). Behavioral finance can make sense of the mental collaboration between conduct rehearses and investors (Shefrin & Statman, 1985).

According to Hermalin & Isen (2000), the decision-making process carried out by investors must involve their emotions. The influence of emotions on investment decisions often causes investors to behave irrationally. Anggirani (2017) Financial backers are separated into two kinds, in particular normal financial backers and silly financial backers, where the sane financial backer is the kind of financial backer who pursues speculation choices in light of information on the accessible data, the pace of return, and the venture gambles. While the kind of financial backer who is silly in going with his speculation choices is impacted by different elements, such as mental and segment factors.

Meanwhile, errors in stock valuation can cause an investor to behave in a disposition effect, which tends to sell profitable stocks quickly and hold stocks that are losing or falling in price for quite a while, trusting that the stock cost will rise in the future later on. Investors will hope in uncertainty, because the stocks they hold will not necessarily rise quickly. They are also quickly satisfied with the profits they have achieved. So many investors feel a loss when they see the price of the shares they sell soaring up.

The above phenomenon can be explained through the research of (Hermalin and Isen, 2000) which says that in every decision-making process an investor will definitely involve his emotions. Emotional involvement in the dynamic cycle frequently makes the investor become less sane (unreasonable). Investors who are less rational will often only participate in business or deposit capital by (only) guided by instinct, jumping on the bandwagon, not accustomed to analyzing the details of the situation and conditions of their business sector, even believing in the mystical aspects of the investment offered (Natapura, 2009).

Putting resources into stocks in the Indonesian capital market is one of the significant venture choices on the planet, this is because of the expansion in the BEI (Indonesian Stock Trade) list and the Indonesian capital market which is shown by the exhibition of the Composite Stock Value Record (IHSG) throughout the course of recent years in correlation with worldwide stock trades. Essentially, the expansion in venture movement is positively connected to the choices made by financial backers. A speculation choice is an activity or strategy taken while putting resources into a resource with the desire for creating productive gains from here on out (Pradikasari, 2018). Overall, the principal motivation behind an individual financial planning is, in all honesty, to boost utility to expand their fulfillment (Riaz, 2015)

In the same way, economic decision making by financial proponents is delegated wisely, as they invest resources into demand to increase utility. Financial backers primarily use financial bookkeeping data as considerations in their investment choices without including their sentiments and excitement. (Riaz, 2015). The idea of reasonable

investor in choice hypothesis implies that while pursuing a choice, the activity picked is the activity that will create the most noteworthy anticipated utility. However, research conducted throughout the course of recent many years shows that Investors frequently act unreasonably and found phenomena in capital markets and financial markets that contradict standard financial theory (traditional financial theory).

Decision making that is only based on irrational considerations will produce irrational results as well, then, at that point, whether investors in the Indonesian Capital Market community are sane or rational in making investment decisions, taking into account company fundamentals and economic conditions in making investment decisions. Or do investors tend to be less irrational in their decision making, by highlighting aspects of investor psychology such as experience and high trust in other reference groups. Based on the previous description, researchers are interested in conducting research entitled "**The Effect of Herding Bias, Overconfidence Bias and Disposition Bias in Investment Decisions: A Study of Individual Investors in the Semarang Capital Market Community**".

## **1.2. Problem Formulation**

Based on the background of the problem described above, the formulation of the problem in this study:

1. Does *herding bias* affect the Investment decisions of individual investors in the Semarang capital market community?

2. Does *overconfidence bias* affect the Investment decisions of individual investors in the Semarang capital market community?
3. Does *disposition bias* affect the Investment decisions of individual investors in the Semarang capital market community?

### **1.3. Research Objectives**

Based on the formulation of the problem described above, the objectives in this study are:

1. Understand the effect of *herding bias* on the Investment decisions of individual investors in the Semarang capital market community
2. Understand the effect of *overconfidence bias* on the Investment decisions of individual investors in the Semarang capital market community
3. Understand the effect of *disposition bias* on the Investment decisions of individual investors in the Semarang capital market community

### **1.4. Benefits Of Research**

The results of this study are expected to provide the following benefits:

#### **1. Theoretical Benefits**

The outcomes of this study are expected to provide supplemental references that will enrich future research on investor behaviour and capital market investment decision-making.

#### **2. Practical Benefits**

Strategic investors intending to invest in the stock market may expect to get valuable insights from this research.

### 3. Benefits For Researchers

This research is expected to enhance the understanding of investor behaviour in selection of capital market investments.

## **1.5. Theoretical Framework**

### **1.5.1. Investor Behaviour**

This examination analyzes how crowding inclination, presumptuousness predisposition, and dispositional inclination influence speculation choices. These three free factors will be factors that impact conduct like exploring the choice to buy or not buy an item or administration, including speculation items.

The theory of this study is the theory investor behavior (investor behavior), investor behavior is a study that understands that investor decision making is by combining psychological factors and micro-level investments (individual decision processes of groups and macro perspectives) and macro perspectives (the role of financial markets), with decision making combining quantitative (objective) and qualitative (subjective) aspects based on specific features of financial products, Investor behavior also assesses cognitive and affective factors revealed By individualist, investors, and brokers during monetary preparation and speculation, the executives, where society ultimately completes its own practice, arrive at conclusions

and establish conclusions about the activity, and have confidence in its character and tendencies (Baker, 2014).

Broadly speaking, stock investors can be analogous to buying and selling transactions of consumer goods where there are producers of the stock instruments themselves, namely issuers who are interested in selling agents, are securities companies that can act as brokers to investors or underwriters and underwriters of the issuance of shares of an issuer. Investing is a decision making that will involve psychological elements in it. This is in line where Investors will tend to be irrational when conducting stock trading transactions in the capital market because Investor decisions are unconsciously influenced by their own psychological behavior (Nareswari et al., 2021).

So it can be concluded that investor behavior in making transactions is actually influenced by psychological factors which include affective, emotional and cognitive aspects (knowledge) and this is inseparable.

### **1.5.2 Understanding Investment**

Investment is a sacrifice in the form of postponing spending now to obtain better *returns* in the future (Jogiyanto, 2010). Investment is fundamentally putting various assets right now in the desire for acquiring benefits from here on out (Halim, 2005). According to Gumanti (2011) Investment is the use of financial capital as an effort to create more money. So, investment is an attempt by investors to release consumption today in an effort to get a better level of consumption in the future.

### 1.5.2.1. Investment Process

In order to make an investment decision, a series of investment processes are needed in decision making, so that the decision has considered other variables such as the ratio between the rate of return and the level of loss that will be experienced. According to Tandelilin (2010), Investment decision-making is a continuous and iterative process. Gumanti (2011) defined the investment process as consisting of five main stages:

#### 1) Investor Nature

First-time investors should establish their investment policy where the policy will be better if it can describe in detail the objectives and limits of the investment

#### 2) Investment Vehicle: Risk and Return Considerations

Profit and loss on various securities related to risk and return is an absolute concern for an investor, because by paying attention to the high and low level of risk and *return* potential losses and also profits can be controlled.

#### 3) Strategy Development

At the stage of strategy development, some investors will try to avoid the risks contained therein. Investors usually look for a strategy that is able to provide maximum expected return. This concept is known as asset allocation. Asset allocation is an effort to proportionally place funds owned in an investment portfolio.

#### 4) Strategy Implementation

The strategy implementation stage is carried out after the allocation or selection of assets is disconnected. Investors must decide on the best application of the strategy,

which is the strategy that is able to provide the most cost effective to acquire or obtain the desired financial asset.

#### 5) Monitoring Strategy

Monitoring strategy performance is an effort to always pay close attention to the implementation of a predetermined strategy. In this case, investors are required to continue to periodically evaluate their investments. This needs to be done because changes in events can affect investment objectives.

So it can be concluded that investors must behave cautiously and need to be wise in making clear investment decisions. Consider the risks and returns important to control profits and losses. Development strategy involves proportional asset allocation. Implementation of periodic monitoring is required for event-appropriate evaluation.

#### **1.5.2.2. Investment Objectives**

According to Manan (2009) there are several goals or reasons for someone to invest, namely:

- A. Get a more decent life in the future than the present.
- B. Reducing inflationary pressures. Inflation itself is inherent in economic life. So people tend to invest in certain instruments to be able to minimize the risks that arise due to inflation.
- C. Numerous countries have legislation that provide tax incentives to investors in order to get them to contribute more funds to their communities, so tax savings programmes are not novel.

So it can be concluded that the general goal that investors want to achieve is to get future profits that give them a decent life in the future, including other things such as securing asset value from inflation.

### **1.5.2.3. Types of Investment**

After knowing the necessary process, investors or potential investors will begin to determine what investment instruments will be chosen to achieve predetermined investment goals. According to Susilowati (2017) investment is defined as an activity in the form of commitment in terms of exchanging money in other forms of wealth in the hope that it can be held for a certain period of time as a form of income which is divided into two, namely:

A. Financial asset investment, is the allocation of money made in the money market in the form of certificates of deposit, securities, and can also be done in the capital market, in the form of purchasing stocks, bonds and others.

B. Investment in real assets, can be done by purchasing productive assets such as the establishment of factories, opening mines, plantations, and so on.

Furthermore, Isnawan (2012) divided the types of investments based on the time period, namely:

A. Short-term investment, i.e. investment made not more than 12 months.

B. Medium-term investment, which is an investment with a time span of 1 to 5 years.

C. Long-term investment, with a span of more than 5 years.

Of the several types of investments that exist, stocks are one of the investment options that can be chosen because they include the type of financial asset investment where the advantages include liquid to be transacted as an investment instrument. Stock investment can be found in the capital market, where the executor of the Indonesian capital market is the Indonesia Stock Exchange.

### **1.5.3 Investment Decision**

Investment decision is a decision (sell, buy, or maintain) taken by investors related to investing in shares owned (Puspitaningtyas, 2012). Sharpe (1964) states that every investor wants to get the desired rate of return from their investments by making optimal investment decisions. In making investment decisions, an investor can make decisions rationally or irrationally. Both of these things will be discussed further in the following points. according Khan (2017) put forward two indicators in Investment decision, which are as follows:

- 1) Investment choices
- 2) Management capital
- 3) Future investment expectations

#### **1.5.3.1. Rational**

In making decisions, an investor needs to use logic in order to make decisions rationally. Markowitz (1952) stated that according to conventional financial theory,

investors are very rational and act to maximize wealth in financial decisions. In making investment decisions, investors who have sufficient knowledge can make rational investment decisions. This is supported by Merton (1987) who states that the more a person has knowledge about finance, the more rational the decisions he will make. In making investment decisions, investors need to do an analysis first. This is supported by stating that investors must collect data and analyze existing information before making stock transactions (Natapura, 2009).

### **1.5.3.2. Irrational**

Investment decision making that should be done rationally can occur for irrational reasons. Rational behavior that should be supported by logic can be influenced by the psychic of the investor himself. This is supported by the statement of Kahneman & Tversky (1979) that the emotions, feelings, and intuitions of investors can influence their decisions and can result in irrational behavior. Previous research describes the reasons why supposedly rational investors make mistakes in investment decisions through the "cognitive unconscious" associated with perception, memory, and mind without awareness (Hilton, 2001). Zaidi & Tauni (2012) The irrational conduct of investors may be partly attributed to the substantial influence of their cognitive processes on their financial choices. Baker (2014) suggest that the emotional and mental conditions of investors might lead to irrational behaviours in their decision-making.

The theories of irrationality and rationality describe how cognitive limitations and information availability impede optimal decision-making. There is a certain time frame within which individuals must make decisions. Furthermore, many following theories of decision-making are based on this initial concept.

#### **1.5.4 Factors Influence Investment Decision**

According to Suprasta and Nuryasman (2020), their research implies that the factors that influence investment decisions, namely:

1. Financial literacy

Financial literacy refers to the conceptual comprehension of financial concepts that enables individuals to make informed assessments about their financial planning and management. The results suggest that there is a favourable correlation between an individual's degree of financial literacy and their capacity to make prudent investment decisions.

2. Financial experience

Financial experience is a process in which a person organizes and manages his finances to consider and prepare for the future. Based on these research, the degree of financial knowledge possessed by a person is a reliable indicator of their investment decisions the better it is at determining investment decisions

3. Locus of control

The locus of control is a person's beliefs about the extent to which they believe that there is or is no connection between the effort made and the results received, so that they can control the events that affect their lives. This research shows that the locus of control factor has a positive influence on investment decisions, meaning that the higher the individual in controlling an event, the individual can also overcome investment problems.

In conclusion, the factors that influence investment decisions are financial literacy, financial experience, and locus of control which play a major role in investment decisions. Studies show that behavioural finance, knowledge, emotions and good financial experience, as well as confidence in control of positive events on investment decisions.

#### **1.5.4.1. Investment Decision Process**

First and foremost, the process of making investment decisions is continuous and uninterrupted. The investment decision-making process, as outlined by Tandelilin (2012), consists of five sequential stages that persist until the most advantageous investment choice is achieved. The investment decision-making process consists of five distinct phases:

- a. Determine of investment objectives

In this case, the first stage in the investment decision process is setting investment goals. These goals vary depending on the type of investor. For example,

pension funds want to ensure their customers pension funds with more stable mutual fund investments, while banks seek high returns through stock investments or high-risk lending.

b. Determination of investment policy

The second stage is about planning ways to achieve these investment goals starting with allocating funds to different types of assets, such as stocks, bonds, real estate, or overseas investments. Investors also consider Limitations, such as the amount of funds available, the distribution of funds, and tax and reporting liabilities.

c. Portfolio strategy selection

The third stage is to determine the portfolio strategy, at this stage there are two strategies that can be chosen, namely the active strategy and the passive strategy, the active strategy involves using information and forecasting to find a better portfolio, while the passive strategy is to invest according to the performance of the market index because it considers the market to have reflected all the information.

d. Asset selection and portfolio formation

Once the portfolio strategy is determined, the next step is to select the assets to include in the portfolio. It involves valuing each security to look for the portfolio combination that provides the best returns according to the desired level of risk. The goal is to create an efficient portfolio, with a high rate of return for a certain risk or a low risk for a certain rate of return.

e. Portfolio performance measurement and evaluation

This stage is the last stage in the investment decision process, but it is important to remember that this process is continuous. If the results of performance measurement and evaluation are not satisfactory, we must return to the initial stage and start the investment decision process again. This stage involves measuring the performance of the portfolio and comparing it to other portfolios, especially with market indices, to assess how well our portfolio compares to others.

### **1.5.5 Investor Definition**

Here are some definitions of investors in Tristantyo (2014):

- 1) According to Law No. 25 of 2007, An investor, whether an individual or a business entity, is an external party who contributes funds to a firm, either domestically or internationally.
- 2) According to BAPEPAM (2008), Investors are parties who carry out investment activities. In the financial world, investors are classified into several types of investors, namely foreign investors and domestic investors, there are still types of investors classified based on individuals (retail investors) and institutional (institutional investors). Another kind of investor is institutional investor, including entity like insurance of companies, mutual and pension fundamental, investment businesses, and fund depository bodies (e.g., banks and savings and loan associations).

- 3) According to Wikipedia terms (2013), investors are individuals or institutions either domestic or non-domestic who make an investment in long or short term with the aim of getting profits.

#### **1.5.5.1. Types Of Investor**

According to Halim (2014), based on its nature, investors can also be categorized into three levels, namely:

- 1) Risk-seeking investors are those who are inclined to assume greater levels of risk in their investments. Individuals of this kind tend to exhibit audacity and speculative behaviour while selecting assets.
- 2) Risk neutrality investors refer to investors that want a consistent rate of return irrespective of the degree of risk they assume. When making investment decisions, this particular investor type is frequently characterised by a high degree of adaptability and caution.
- 3) Investors that choose investment instruments with lower risk are referred to as risk averters due to their aversion to uncertainty. A prudent investor is renowned for meticulously considering and planning all of his financial decisions.

Individuals who invest their funds in the stock market do it in a variety of distinct ways. Multiple variables, such as investment objectives, available funds, knowledge, and investment practices, contribute to this diversity. Investors exhibit a range of

confidence, anticipation, and risk levels due to the diversity across individuals. This is where the importance of understanding financial behavior among investors during stock transactions.

### **1.5.6 Understanding Capital Market**

The capital market is a platform where individuals willing to purchase and sell financial assets that have a maturity period beyond one year may intersect. The law defines the capital market as "activities related to public offerings and trading of securities, public companies related to the securities they issue, and institutions and professions related to securities" (Samsul, 2006).

1) The capital market consists of two principal marketplaces, namely the primary and the secondary markets. Initial public offerings of stocks or bonds by corporations may be conducted via the primary market, which is a marketplace specifically designed for newly issued securities. Both investors and issuers enhance the market's liquidity by introducing new securities into circulation. In contrast, the secondary market facilitates the buying and selling of securities at prices determined by securities intermediaries. It serves as a marketplace for assets that have been previously exchanged on the stock exchange, sometimes known as old securities. Based on Samsul's (2006) analysis, the funds that were formerly allocated to firms engaged in securities issuance are now being directed towards individuals who possess different securities.

2) The capital market is the regulatory framework established by Law No. 8 of 1995, which governs the public issuing and trading of securities, as well as the securities of public corporations and associated organisations and professions.

3) In the context of a nation's economy, the capital market fulfils two essential functions. First and foremost, it enables enterprises to get funds from investors. Furthermore, it facilitates the connection between investors and firms. Beyond serving as a platform for enterprises to generate cash for the purpose of developing and expanding, the capital market also enables people to acquire a diverse range of financial instruments such as equities, bonds, mutual funds, and similar derivatives. Through this approach, the community may allocate its funds in a manner that considers the age, prospective yield, and level of risk associated with each asset (Mawardi, 2009).

4) Furthermore, the capital market is an alternative for groups seeking to get financial support from investors. Market players in the capital market operate with the awareness that their future financial outcomes are contingent upon their decisions. In order for the capital market to function, it must exhibit efficiency and a substantial presence of both buyers and sellers. The liquidity of the capital market is determined by the ability of buyers and sellers to engage in rapid transactions. By contrast, a well-functioning capital market would exhibit prices and securities that accurately reflect the value of a firm.

5) Thus, it can be concluded that investing in the capital market is an investment activity where the mechanism such as buying and selling trading in general with

commodities is securities that are part of financial instruments that can bring profits and have their own risks.

#### **1.5.6.1. Capital Market Functions**

In accordance with Mawardi (2009), the capital market facilitates the connection between lenders, who possess surplus funds, and borrowers, who want long-term financing. The capital market served 2 primary needs such as financial and economic, This is also an economic service that facilitates the transfer of funds from lenders to borrowers. By investing their funds, lenders expect a reward or return from the delivery of these funds. As for borrowers, external funds can be used for business development without waiting for funds from the results of their company's operations. In finance, by providing funds needed by borrowers and lenders without being implicated in real asset ownership.

In addition, the capital market also has the following functions (Martalena & Maya Malinda, 2011):

##### 1) Saving Function

This can be a way to people who can evade the scad declines due to the inflation.

##### 2) Wealth Function

People able to build the wealth value by invested in many capital matkett thing which will not experience the decrease like jewel and house

##### 3) Liquidity Function

Capital market components are easy to spend, making it more easy to recovery people from the funds compared to land and house.

#### 4) Loan Function

Capital market is loans source of company and government to financial activities.

### **1.5.6.2. Capital Market Instruments**

Definition of securities Per Rhode Island Law No. 8 of 1995, the asset classes that are classified as securities include letters of recognition of debt, commercial securities, bond shares, evidence of debt, debt participation units, units for collective investment contracts, derivatives of securities, and futures contracts on securities.

Presented below are examples of financial market instruments:

#### a. Shares

Shareholders are granted the privilege to participate in the earnings and assets of a firm when they own shares, which act as proof of ownership. Within the pair of stocks, you will encounter:

- 1) Exclusive ownership of shares When soliciting funds from the general public, issuers often rely on ordinary shares, which are the most prevalent and extensively traded product in the capital market.
- 2) Preferred stock is a type of stock that has the right in advance to receive profit and has the right to cumulative profit. A cumulative right is the right to profit that is not distributed in a year that has suffered a loss, but will be paid in the year that has experienced a profit, so that preferred

stock receives profit twice. This privilege is given to preferred shareholders because they are the ones who supply funds to the company when it experiences financial difficulties.

b. Bonds and bond convertible

An investor or bondholder provides a loan to a company in return for a certificate that specifies the loan amount and contractual conditions. Corporate entities that issue bonds have a legal obligation to reimburse the loan amount along with accrued interest at the completion of the loan's duration, as explicitly stated in the bond. The values of bonds exhibit an inverse relationship with fluctuations in interest rates. As investors actively pursue bond investments, bond prices often increase in reaction to general trends of declining interest rates. In the event of a widespread increase in interest rates, the value or price of bonds will decline as investors are more inclined to allocate their funds into banks. Convertible bonds, bonds that can be converted into bond shares (bonds) are securities that indicate that the bond issuer borrowed some funds to the public and has the obligation to pay interest periodically, and the obligation to paid off the principle by the predetermined time for the buyer of the bond.

c. Deriatives of securities

- 1) Right Right shows proof of preemptive rights attached to shares that allow existed shareholders to buy new shared to be issued from, before the shares are offered to other parties.

- 2) Warrants are securities issued by an issuer that entitle shareholders to order shares of the issuer at a specified price, generally for 6 months to 5 years. Investment Manager as a fund manager to invest either in the capital market or money market.
- 3) Allocation of Equity Proceeds A dividend refers to a fraction of a corporation's profits that is allocated to its shareholder base. The distribution of cash dividends by a firm indicates that shareholders get a new sum of rupiah for every stock. Or it also may be on the form by a share dividend that means ever shareholders was given from a share number that owned by the investor that will intensify the stock distribution.

#### d. Mutual Fund

If you are a conservative investor with a keen interest in investing but limited resources (both regarding time and knowledge), it might be prudent to contemplate a certificate mutual fund as a viable alternative. (Martalena & Maya Melinda, 2011)

Can be concluded that the benefits of investing in the stock exchange will benefit all related parties which can provide profit opportunities for investors while providing financial capital for issuers or related companies.

#### **1.5.6.3. Capital Market Efficiency**

The overall efficiency of the market is influenced by both the amount and quality of information available to market participants, as well as their ability to utilise this data to shape their decision-making. Optimal market efficiency is achieved when

all relevant information is reflected in the price of securities. (Martalena, 2011). Relevant information can be classified into three types, namely information in the form of price changes in the past, information that is publicly available (public information), and information that is available both to the public and not (public and private information). There are three forms or levels to express capital market efficiency, namely (Martalena, 2011):

- 1) *Weak form efficiency*: A market in which the present price incorporates all the data captured in past price records.
- 2) A market in which all publicly accessible information, including past prices, is included into the pricing.
- 3) Prices in this manner reflect both publicly accessible information and data obtained from fundamental assessments of the company and the economy.

### **1.5.7 Herding Bias**

Keynes (Baddeley. 2012) in his theory of herding behavior states that under uncertain circumstances, It would be more reasonable to accept that other people are more knowledgeable than us and should do what they have done if we come to terms with the fact that our judgement is incorrect. Bikhchandani (1992) state that herding occurs because of the uncertainty of circumstances and the logical actions taken by others. If both conditions are met, then there is a possibility of herding. Furthermore, Banerjee (Baddeley et al., 2012) states that in making decisions, including financial

decisions, herding behavior will produce rational outcomes. This is because this decision is followed by many people, so it can cause wrong decisions to be rational and cause private but relevant information to have no meaningful influence and become inefficient, resulting in inappropriate outcomes.

In the stock market, herding behavior encourages an investor to imitate other investors' moves or market movements rather than trusting his own strategy or information. Luong & Ha (2011) stated that individual investors have a higher tendency to follow the decisions of other investors compared to institutional investors. There are several investment decisions that are widely followed by investors in herding behavior, namely the decision to: buy, sell, choose shares, the period of time to hold shares and the number of shares to be bought or sold (Waweru et al., 2008: 32 quoted Luong & Ha. 2011). After having understood the basics of herding bias behavior, writer want to explain by looking at indicators that can help identify and measure this phenomenon. According to Kengathran (2014) and Baker et al (2019), there are four indicators in herding bias behavior, namely:

- 1) Following the decisions to buy or sell shares of other investors
- 2) Stock selection is based on other people's choices
- 3) Stock selection is based on the volume of other people's shares
- 4) Speed of herding behavior

### **1.5.8 Overconfidence Bias**

Overconfidence bias can be defined as irrational beliefs in thought as well as ability, which have emotional and cognitive factors. An overconfident investor believes that investors have an above-average knack for determining which stocks to take, when some research suggests these statements are likely false. Pompian (2012). Another definition of overconfidence is excessive confidence in knowledge and insight possessed when making an investment (Budiarto, 2017). According to Kartini and Nugraha (2015), it also explains that overconfidence is a feeling of overconfidence.

According to Ton & Dao (2014), excessive optimism indicates confidence that the future will be better, which helps investors in having positive emotions. With optimistic investors will encourage increased interest in investing (Gervais, 2008), Optimistic investors have positive expectations for their investments, regardless of the efforts and skills possessed by these investors (Agrawal, 2012). Investors who get investment returns that are in line with their expectations will be more optimistic in the future. This is in accordance with the opinion (Bracha & Brown, 2012) which states that investors who experience optimism bias because these investors are accustomed to and have had similar experiences before, so that it affects them in making investment decisions.

Excessive optimism behavior can have a bad impact on investors. With investors who have excessive optimism, investors are less careful in making decisions and pay less attention to the risk or NPV of their investments, which can reduce the performance of their investment portfolio. On the other hand, excessive optimism can

also give good returns to investors. Optimism behavior increases with time and investment experience (Hoffman & Post, 2012). Investors who receive profits in accordance with their expectations will be more optimistic in investing, so they believe that future conditions will improve. This encourages investors to be bolder to invest at uncertain times.

The high and low level of investor confidence will affect investment decision making. According to (Anggirani, 2017), overconfidence is a condition in which an investor feels capable, overconfident and has optimistic thoughts to predict the future. While Baker, et al. (2019) argues that overconfidence can be measured by one indicators, namely:

- 1) Perception of self-ability in investing
- 2) Perception of personal portfolio performance capabilities
- 3) Perception will have good decision making ability
- 4) Perception has more capabilities than financial advisors
- 5) Perception of having excessive trading skills
- 6) Perception of having ability in the capital market

### **1.5.9 Disposition Bias**

The disposition effect is an instance of atypical stock market behavioural patterns. In contrast, investors who participate in this disposition impact choose not to sell their assets when stock prices decrease. Rather, it is advisable to retain the stock,

anticipating a future increase in its price. The capital market exhibits inefficiency due to the selective choices made by some investors (Ervina Sutanto, 2015).

The notion of the disposition effect was introduced by Shefrin and Statman in 1985, therefore advancing the prospect theory first proposed by Kahneman and Tversky in 1979. Shefrin and Statman (1985) found a tendency for investors to continue to own stocks that provide losses for them (lossing stocks) and a tendency to sell stocks that provide benefits for them (winner stocks). Disposition effect is the behavior of investors who rush to realize profits and hold losses for too long that may occur. Or in other words, investors are irrational, Prudent when confronted with prospective profits and audacious when confronted with prospective losses. Formulated a constructive explanation of financial gains and losses, positing that investors tend to prematurely sell high-performing assets and endure losses for an extended period.

Shefrin and Statman (1985) found that disposition effects occur year-round except in December. They argue that with tax-loss selling becoming more apparent in December, it will be easy for investors to sell stocks that bring losses to them. (Shefrin and Statman, 1985) assumed that individual investors would more often realize their losses in December. According to Baker, et al. (2019) & Goo et al (2019) put forward 5 indicators in Disposition bias, which are as follows:

- 1) The tendency to withhold responding to excessive stock information
- 2) Tendency to admit losses

- 3) The perception that share prices will fall again
- 4) Tendency to losing holding stock
- 5) Tendency to place importance on losses

### **1.5.9.1 Factors Affecting the Disposition Effect**

#### 1) Trading Volume

Analysis of trading volume, a metric of the quantity of shares exchanged on a market, allows one to see the reaction of the capital market to news. Trading volume refers to the quantity of shares that are traded within a certain period. Daily share trading volume is a metric that quantifies the level of activity in the stock market. (Magdalena, 2004)

According to Halim and Hidayat (2010) trading volume ( $V_t$ ) as shares traded on day  $t$ . Stock trading volume is a measuring tool used by technical analysts to assess the worth of stock prices by observing the reaction of the capital market to information via the movement of stock trading volume activity in the market. Therefore, a potentially growing company can serve as good news and the market should react positively.

A stock's level of trading activity is directly proportional to its trading volume. Brokers often do not retain shares of a heavily traded firm for an extended period before divesting them. It follows that the bid-ask spread becomes narrower. The bid-ask spread is reduced during periods of high stock market activity. (Magdalena, 2004).

The study's result by Islamiyahya (2012) and Akhmad (2013) maintained by there was a significant difference in trading volume due to the company's stock price that was easily accessible to investors. The cause of the emergence of trading volume can be caused by two things, namely stock prices that are too high and the shares number of circulate on the market is is too small. So with the share split, the stock price becomes not too high so that more investors will be able to transact (Rusteliana, 2014). Trading volume is how many shares are traded in a given period. The greater the demand and supply of the stock, the greater the fluctuation in the stock price on the exchange.

In general, trading volume can be formulated as follows:

$$V_t = \frac{\text{Number Of Shares Traded}}{\text{Number Of Share Outstanding}}$$

## 2) Volatility

According to Wawan (2016), Volatility is a quantitative measure that monitors the fluctuations in the prices of a security or commodity within a certain given period. Given that standard deviation quantifies volatility, the general body perceives volatility as a kind of risk. The amount of volatility is directly linked to the degree of uncertainty in possible stock returns. One of the 10 principles of financial management is that investors will be hesitant to assume further risk unless there is a guarantee of possibly profitable high-risk return (Keown et al in Ervina, 2015).

the volatility of an investment is determined by the spread around its average yield. Standard deviation is a statistical measure used to characterise the degree of dispersion of a stock's price around a mean or moving average. A modest standard deviation suggests that price fluctuations are tightly concentrated in distinct clusters. Extremely large standard deviations suggest highly dispersed price fluctuations ([www.ipotnews.com](http://www.ipotnews.com)).

Investors encounter an elevated level of risk and a broader spectrum of returns when operating with assets characterised by a greater standard deviation. The degree for which returns diverge from their mean is a metric of volatility, which presents a potential hazard as per contemporary portfolio theory. In other words, an investment is considered more risky when there is a greater likelihood that the return would be lower than first anticipated.

Volatility occurs when the price of a stock or security experiences a fluctuating increase or decrease. The cause of volatility is due to certain news, important fundamental news releases or the actions of speculators who enter in large numbers when trading volumes are thin or liquidity is declining. High volatility values indicate that stock price change down and up with a wide range. While volatility is said to be low if stock prices rarely change or tend to be constant. And it is said to be fixed if the stock price does not experience any change, be it an increase in stock price or a decrease in stock price. There are two ways to estimate volatility, namely by using

historical data or historical volatility and using information on market volatility today or implied volatility.

Historical volatility is volatility calculated based on past stock prices, assuming that past stock price behavior may reflect future stock behavior. While implied volatility is market volatility that is seen as more realistic than historical volatility. To get this volatility value, a trial method can be used.

Calculating the mean range for each time period, ranging from a smaller to a larger value, is an alternative method to measure volatility. This range is then represented using a percentage relative to the commencement of the period. The level of volatility rises when a larger movement results in a broader range of prices. Reduction in volatility is anticipated due to a more limited pricing range, Based on research conducted by Parkinson in (Wawan, 2016), volatility can be measured by:

$$PV = \sqrt{\frac{1}{n} \sum \ln\left(\frac{H_t}{L_t}\right)^2}$$

Information:

PV= stock price volatility

Ln= natural logarithm

H<sub>t</sub>= highest share price in period t

L<sub>t</sub>= lowest share price in period t

N= number of observation

## 1.6. Previous Research

The researchers undertook this investigation by using previous research as a point of référence. Additional studies supporting this claim were conducted by various scholars, which are included below:

**Table 1.1 Previous Research**

No	Title/Author	Variable	Result
1.	“The Impact of Disposition Effect, Herding and Overconfidence on investment decision making moderated by financial literacy” /Priyo Prasetyo, Sumiati and Kusuma Ratnawati (2023)	Disposition Effect, Herding Bias and Overconfidence Bias on Investment Decision	Research on the effects of disposition, herd behavior, overconfidence, and financial literacy in making investment decisions between the Gen Z investors at Kediri, IndIndonesia, shows that overconfidence and character. Meanwhile, herd behavior is not significant. Financial literacy acts as a positive moderator on the disposition effect in investment decision making.
2.	“The Role of Risk Tolerance in Mediating the Effect of Overconfidence Bias, Representativeness Bias and Herding on Investment Decisions” / Ratih Sorya, Asep Risman, and Indra Siswanti (2023)	Herding Bias, Special Bias, Representativeness Bias on Investment Decisions	Experimental evidence has shown that behavioural biases like Overconfidence I, Herding and Representariceness prejudice have a favourable impact on investment decisions.
3.	“The Influence of Financial Literacy, Regret Aversion Bias, and Overvonfidence Bias on Invesment Decision” / Angela Tiffany and Ary Satria Pamungkas (2023)	Overconfidence bias Financial Literacy, Regret Aversion bias on investment decisions	Behavioral biases like Overconfidence I, Herding and Representariceness that shown have positive influence to the investment decisions

No	Title/Author	Variable	Result
4.	“The impact of overconfidence and herding bias on stock investment decisions mediated by risk perception”. / Muchammad Arie Wibowo, Nur Khusniyah, and Siti Aisyah (2022)	Herding Bias and Overconfidence Bias on Investment Decisions	The millennial and Gen Z cohorts in Malang City get advantages from the phenomenon of herd mentality and overconfidence in the context of stock investment. Consequently, the decision-making ability of investors tends to decline as their degrees of overconfidence and mass following bias increase.
5.	“The Effect Of Essential Information and Disposition Effect on Shifthing Decision Invesment.” / Sautma Ronni Basana and Zeplin Jiwa Husada Tarigan (2022)	Dispositon Effect and Essential Information on Invesment Decisions	Overconfidence Bias, Representativeness Bias Significant effect on the picking process Direct or indirect investment decisions

### 1.7 Research Position

Although this study is not the first, there are similar studies including those mentioned earlier. But what distinguishes this research is the object of research that focuses on community members, while previous research refers to investors who have invested in the capital market. Then the previous study had mediation variables. For example, using variables of risk perception value, savage representativeness, and financial literacy. And then what distinguishes previous research is the population of the research sample.

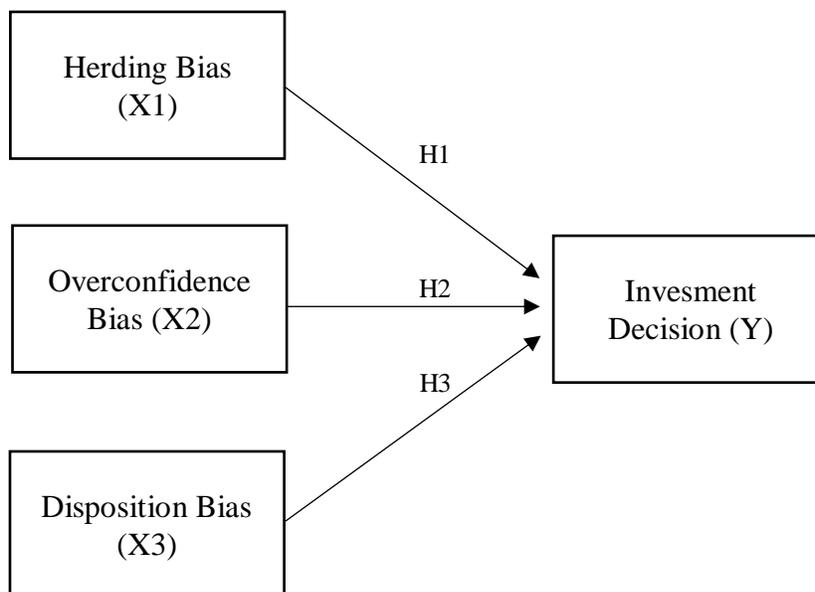
### 1.8 Hypothesis

A hypothesis is a solution to the formulation of a research issue that is derived from empirical facts obtained via data study. Hence, hypotheses are formulated based on

theoretical rather than actual reactions to study topic definitions. (Sugiyono, 2009).

The hypotheses proposed in this study are:

1. *Herding Bias* positively influence on investment decisions
2. *Overconfidence bias* positively affects on investment decisions
3. *Disposition bias* positively influence on investment decisions



**Picture 1.1 Hypothesis Model**

### **1.9 Conceptual Definition**

Concept definition is the stage of providing an explanation of the limitation of understanding of observed things. The definition by every variables concept here like:

### **1.9.1. Herding Bias**

Herding factors theory of states that under uncertain circumstances, It would be more reasonable to accept that other people are more knowledgeable than us and should do what they have done if we come to terms with the fact that our judgement is incorrect (Baddeley, 2012).

### **1.9.2. Overconfidence Bias**

*Overconfidence* is a cognitive bias that investors overestimating the skills also the predictions of them for success. Overconfidence bias indicates the irrational behavior of investors relying more on their own abilities and optimistic judgment (Antony and Joseph, 2017)

### **1.9.3. Disposition Bias**

This is defined as the investor's inclination to sell superior performing stocks early, and hold inferior performing stocks too long (Shefrin, 1985).

### **1.9.4. Investment Decision**

investment decisions are the process of selecting stocks or stock portfolios that include fundamental and technical analysis, as well as consideration of investment objectives and risk tolerance. Investors need to understand their goals, how much risk they are prepared to take, and diversify their portfolio of stocks to achieve the desired results within a certain timeframe. Having a clear investment plan is also very important in making stock investment decisions. (Markowitz, 1952)

## **1.10 Operational Definition**

### **1.10.1. Herding Bias**

According to Kengathran (2014) and Baker et al (2019) put forward 4 indicators in herding bias, which are as follows:

- 1) Decision Following the decisions to buy or sell shares of other investors
- 2) Most decisions Stock selection is based on other people's choices
- 3) Lack of decions Stock selection is based on the volume of other people's shares
- 4) Speed of herding behavior

### **1.10.2. Overconfidence Bias**

*Overconfidence bias* is a cognitive bias, in which investors overestimate their skills and predictions for success. Overconfidence bias indicates the irrational behavior of investors relying more on their own abilities and optimistic judgment (Antony and Joseph, 2017). Overconfidence Bias Indicators according to Baker, at al. (2019)

- 1) Perception of self-ability in investing
- 2) Perception of personal portfolio performance capabilities
- 3) Perception will have good decision making ability
- 4) Perception has more capabilities than financial advisors
- 5) Perception of having excessive trading skills
- 6) Perception of having ability in the capital market

### **1.10.3. Disposition Bias**

Disposition effect is the tendency of investors to sell their investments whose performance is rising and hold the length of their investments whose performance is declining (Shefrin, 1985). This often According to Baker, at al. (2019) & Goo et al (2019) put forward 5 indicators in Disposition bias, which are as follows:

- 1) The tendency to withhold responding to excessive stock information
- 2) Tendency to admit losses
- 3) The perception that share prices will fall again
- 4) Tendency to hold losing stocks
- 5) Tendency to place importance on losses

#### **1.10.4. Investment Decision**

Khan (2017) explains that capital investment decisions is a long-term investment for gain profits in the future, which relates to the process planning, setting goals, funding arrangements, and using certain criteria to select long-term assets. Investment decision indicators according Khan (2017) put forward two indicators in Investment decision, which are as follows:

- 1) Investment choices
- 2) Management capital
- 3) Future investment expectations

## 1.2 Research Variable and Operational Table

Variable	Indicator	Items	Reference
<b>Herding Bias (X1)</b>	Following the decisions to buy or sell shares of other investors	The decision to purchase or selling shares influence from the the decisions of other investors	Kengathran., (2014); Baker, et al.,(2019)
	Stock selection is based on other people's choices	The decision to choose the type of stock is influenced by other people's choices	
	Stock selection is based on the volume of other people's shares	Share volume decisions are based on the share transaction volume of other investors	
	Speed of herding behavior	The speed of reaction to changes in investment decisions of other investors and following them	
<b>Overconfidence Bias (X2)</b>	Perception of self-ability in investing	I am an experienced investor	Baker, et al. (2019)
	Perception of personal portfolio performance capabilities	I feel about the average performance of my investment portofolio is way better from the stock market.	
	Perception will have good decision-making ability	I feel my actions and knowledge influence the action while i buy a superior investment	
	Perception has more capabilities than financial advisors	I think i'm confident more ih my own Investment opinion rather than on the financial analysts opinion.	
	Perception of having <i>excessive</i> trading skills	My past investment success is a result of the investment skills I have	

<b>Variable</b>	<b>Indicator</b>	<b>Items</b>	<b>Reference</b>
<b>Disposition Bias (X3)</b>	The tendency to withhold responding to excessive stock information	I tend to sell profitable stocks too soon <hr/> I tend to hold an adverse stock for too long	Baker, et al. (2019); Goo et al.,(2010)
	Tendency to admit losses	I tend not to want to admit losses	
	The perception that share prices will fall again	I sold profitable shares because I was afraid that the share price would fall again	
	Tendency to hold loss-making stocks	I don't lose stocks until I reach BEP	
	tendency to place importance on losses	Gains from multiple stock transactions cannot compensate for a single stock transaction loss	
<b>Investment Decision (Y)</b>	Investment choices	I feel satisfied when I can set aside some my income to invest in stock rather than saving	Khan, et., al. (2017)
	Management capital	I will invest a larger amount of money in shares	
	Future investment expectations	The uncertainty of whether the market will rise or fall keeps me from buying stocks  I prefer to save money because I'm never sure when something will collapse and I'll need money.	

## **1.11 Research Methods**

### **1.11.1. Research Type**

Scientific study use a quantitative methodology to provide an explanation. In order to ascertain the causality or contributing elements of a certain event, it is advisable to engage in explanatory research. Scientists have attempted to elucidate the phenomenon and its consequences, although they maintain scepticism over its empirical occurrence. This indicates that the researcher is endeavouring to elucidate the correlation among many variables. Researchers must first develop hypotheses, which are fundamentally first assumptions, to comprehend the relationship between the variables being investigated.

### **1.11.2. Population and Sample**

#### **1.11.2.1. Population**

Sugiyono (2009) A population is a comprehensive group of individuals or objects that has certain characteristics and numerical values, which researchers interpret to draw conclusions about their research. A comprehensive understanding of population dynamics is essential for researchers to establish limits when choosing study participants. In this study, the population is investors who have made investment decisions on stock market and members of Semarang capital markets community.

#### **1.11.2.2. Sample**

Sample defined as the part number from the characteristic that pushed from the population. This must be able to represent and reflect the ecistibg population. Sample

determination according to Cooper and Emory (1998) in the book *Business Research Methods* mentions sample size, that "the basic formula in determining sample size in non-probability sampling assumes that the population is infinite". Thus, a sample of 100 out of a population of 5000 is roughly the same accuracy as an estimate of 100 samples out of a population of 200 million. From the theory above, the sample of respondents in this study was 100 people from Semarang capital market Community.

### **1.11.3. Sampling Techniques**

Sampling defined as a mechanism by selecting a number of components by the population from the studying this sample by possibility to generalizing the type of the component.

In this study, the sampling technique uses *non-probability* sampling and implements the approach of purposive sampling, that is a sampling carried out on the basis of certain goals and considerations. In addition, it also uses an *accidental sampling* approach, namely the determination of samples based on chance, if a respondent encountered by the researcher has the appropriate criteria, it can be used as a respondent in this study. In this case, one of the considerations is Investors who have made investment decisions in the Capital Market. Researchers determine the sample by asking investors who fit the sample criteria or not. The types are:

1. Investor community members
2. Have made investment decision on stock
3. Willing to fill out questionnaires related to this study.

4. Semarang city domicile
5. Individual Investors

#### **1.11.4. Data Types and Sources**

This study uses primary data. Statistical data was collected by administering questionnaires to capital market investors located in Semarang.

#### **1.11.5. Measurement Scale**

The measurement scale is needed because each variable has more than one indicator, in this study what will be measured is a variable, each variable has an indicator that will later be used as a statement item. This study employed the Likert scale, a survey instrument that quantifies individuals' opinions, attitudes, and perceptions regarding social issues. (Sugiyono, 2009).

The scoring given to measure Consumer Interest using the Likert Scale, as follows:

1. Score 5 if Strongly Support Statement
2. Score 4 if Agree Supporting Statement
3. Score 3 if Neutral Supporting Statement
4. Score 2 if Disagree Supporting Statement
5. Score 1 if Strongly disagree Not Supporting Question

#### **1.11.6. Data Collection Technique**

1. Questionnaire

A questionnaire is a collection of questions that assess the research variables to be investigated. A widely used approach is to design questionnaires in a certain manner to streamline the process of receiving answers from participants where questions in the questionnaire include answer choices that can be chosen by respondents.

#### **1.11.7. Data Processing Technique**

After the data is obtained then processed and after that presented in the form of tables for the sake of analysis. The data processing includes:

##### 1. Editing

This process is done after the data is collected. The editing process is carried out to see if the answers on the questionnaire have been filled in correctly. In addition, the editing process also aims to get quality answers so that the answers to the conclusions are right.

##### 2. Coding

Assigning distinct codes to survey replies enables their later categorisation into pre-established groups. The objective of coding is to enhance the manageability of the respondents' answers for SPSS processing and analysis.

##### 3. Scoring

In giving skor or this assessment is used skala likert which is one way to determine the score. Scoring is necessary because each variable is measured using more than one indicator.

##### 4. Tabulating

Tabulation is a grouping of answers carefully and regularly, then calculated and added until they are realized in the form of useful tables. The existence of this grouping is expected to allow readers to see the results of the research clearly.

#### **1.11.8. Research Instruments**

A research instrument, as described by Sugiyono (2009), is a device used to quantify empirical social and natural phenomena. In this study, a questionnaire with questions for the research participants to respond to functions as the measuring instrument. The construction of the questionnaire began with an examination of established theoretical frameworks. The theoretical basis is elaborated upon to provide indicators, which are then developed into distinct question points assessed using a Likert scale.

#### **1.11.9. Analysis Techniques**

After the stages of data selection and collection, the analysis of research data is a crucial component of data testing (Indriantoro, Nur, & Supomo, 2016). Analysis of data may be structured based on factors and categories of respondents. Next, the data pertaining to these variables is presented and subjected to analysis. At last, computations are conducted to sign the problem form also evaluate the hyphoteses. This analysis technique uses quantitative analysis techniques using numbers that can be measured and calculated. Quantitative analysis uses statistical tools (SPSS) used to test hypotheses (Sugiarto, 2017).

### **1.11.9.1. Validity Test**

Indicators that have been translated into questionnaires require validity tests. This is taken out to size the validity from the questionnaire to be implemented. In this study, indicators derived from Herding Bias variables, Overconfidence Bias, Disposition bias, and Risk Investment decisions. If these variables can be measured then the questionnaire can be declared valid. However, Quantifying the scope of assessment will be difficult if the questionnaire lacks validity. A 5% as significance level is used in this one-sided test to carry out the validity measurement.

According to Ghazali (2013) states that a questionnaire is valid if:

- 1)  $r_{test} > r_{table}$  is positive, then variable is valid
- 2)  $r_{test} < r_{table}$  then variable is invalid

### **1.11.9.2. Reliability Test**

In addition to testing validity, questionnaires also require reliability tests as a measuring tool for variable indicators. The implementation of this test is useful to prove that the questionnaire used is reliable or not. If the respondent's answers are stable and always consistent, then the questionnaire can be declared reliable (Ghazali, 2013). Proving the truly questionnaire by the Cronbach Alpha statistical test. With conditions of more than 0.6 questionnaires can be said to be reliable. Variable indicators to be tested in this study include brand image, quality, price and purchasing decisions.

### **1.11.9.3. Classical Assumption Test**

To search and make sure that there would never be a significant and representaribe connection, the regression model must satisfy the classical assumptions used. To ensure the precision and impartiality of the estimator parameters, the classical assumption test is used. Conventional hypothesis tests used in this study include the tests for autocorrelation, heteroscedasticity, multicollinearity, and normality.

#### **a. Normality Test**

Ghozali (2017), the normality test in a regression model is used to ascertain if the residual or confounding variables adhere to a normal distribution. One crucial characteristic of a properly designed regression model is the presence of a normal or nearly normal distribution. This work used the Jarque Bera (JB) test along with the histogram-normalcy test as its statistical method to evaluate normality. The following criteria are used to determine the normal distribution of the data, with a significance level of 5%:

- 1) A dataset is said to be normally distributed if the probability value exceeds 0.05.
- 2) If the probability value is below 0.05, the data is not normally distributed.

#### **b. Multicollinearity Test**

In the context of this study, we explore the impact of Multicollinearity and its implications on Risk Investment Decisions, focusing the analysis on the Effects of Herding Bias, Overconfidence Bias, and Disposition Bias. Ghozali (2017) The objective of multicollinearity testing is to ascertain the presence of considerable

correlation among the independent variables in a regression model. In an ideal regression model, there should be no discernible correlation among the independent variables. A strong correlation among the independent variables complicates the interpretation of the beta coefficient, a regression coefficient, with regard to the dependent variable.

In order to measure the existence of Multicollinearity, Ghozali, (2017) stated that with a significance level of 90%, the analysis was carried out through examination of the correlation matrix with the following criteria:

- 1) If the correlation value between two independent variables exceeds ( $>$ ) 0.90, then Multicollinearity can be considered to exist.
- 2) Conversely, if the correlation value between two independent variables is less than ( $<$ ) 0.90, then it can be concluded that Multicollinearity is not detected."

### **c. Heteroscedasticity Test**

Heteroscedasticity test is carried out with the aim of testing the regression model for the equality of residual variance from observation to another observation (Ghozali, 2016). If the residual variance from one observation to another changes, it is called heteroscedasticity. The basis for taking the Glesjer test which is used as a measurement of heteroscedasticity (Ghozali, 2016):

- If  $t \text{ test} < t \text{ table}$  and significance value ( $\text{sig}$ )  $> 0.05$  then there is no Heteroscedasticity
- If  $t \text{ test} > t \text{ table}$  and significance value ( $\text{sig}$ )  $< 0.05$  then Heteroscedasticity occurs

#### 1.11.9.4. Significance Test

##### a. Simple Regression Analysis

According to Ghozali (2017), Basic regression analysis is implemented to gain the impact from given independent on a dependent one. The following equation is employed:

$$Y = \alpha + bX + e$$

##### b. Correlation Coefficient

The present study used a correlation test to determine the degree of effect between the independent and dependent variables. To ascertain the degree of correlation between the variables, it is necessary to examine the data using SPSS. The following table presents a compilation of the correlation coefficient and its determination methods:

**Table 1.3 Interpretation of correlation coefficient (r)**

Coefficient Interval	Relationship Level
0,00 - 0,199	Very Weak
> 0,20 - 0,399	Weak
> 0,40 - 0,599	Medium
> 0,60 - 0,799	Strong
> 0,80 - 1,000	Very Strong

### c. Coefficient of Determination

The coefficient of determination is a measure of how well the model can explain the dependent variables. Calculated coefficients of determination vary between 0 and 1. If the value approaches 1, it suggests that the independent variables of the research can almost completely account for the related variables.

$$KD = r^2 \times 100\%$$

### d. Test T

The t test is used to show the level on influence of each indepent variable separately on the dependent variable (Ghozali, 2016). the equation used is:

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

Description:

t = t distribution

r = partial correlation coefficient

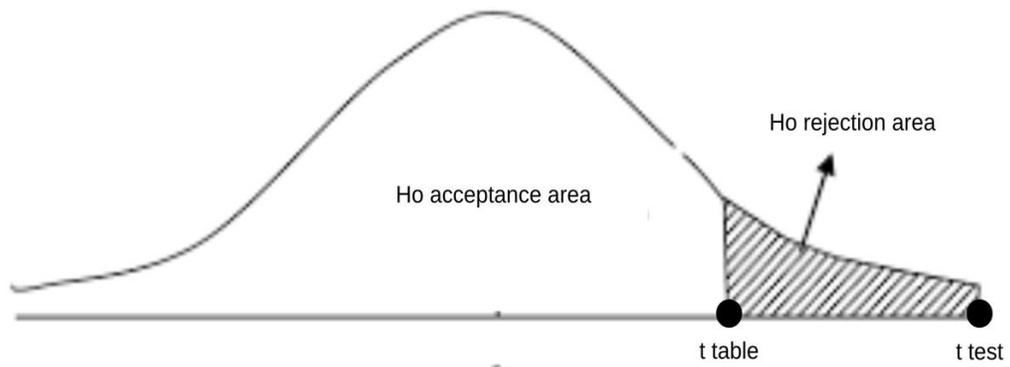
r<sup>2</sup>= coefficient of determination

n = amount of data

The provisions used to make decisions regarding the results of the t test are as follows:

a. if t test > t table, then H<sub>0</sub> is rejected and H<sub>a</sub> is accepted (the independent variable has a significant effect on the dependent variable).

a. if  $t_{\text{test}} < t_{\text{table}}$ , then  $H_0$  is accepted and  $H_a$  is rejected (the independent variable has no significant effect on the dependent variable).



**Figure 1.2 Curve t Test (One tails)**