JURNAL ILMIAH MANAJEMEN BISNIS DAN INOVASI UNIVERSITAS SAM RATULANGI (JMBI UNSRAT)

ANALYSIS OF FACTORS THAT ARE CONSIDERED BY INVESTORS IN STOCKS INVESTMENT DECISION MAKING IN BATAM CITY

Fendy Cuandra & Helen Tan
Universitas Internasional Batam

A R T I C L E I N F O

Keywords: *Investment Decisions, Availability Bias, Representative Bias, Locus of Control, Batam City*

Kata kunci: *Keputusan Investasi, Bias Ketersediaan, Bias Representatif, Locus of Control, Kota Batam.*

Corresponding author:
Fendy Cuandra
Email: fendy.cuandra@uib.ac.id

Abstract:*The purpose of this research is to analyze the factors that investors should consider in stock investment decision making. This research was conducted to assess the interest in investing and consideration when investing which is influenced by representative bias, availability bias, and locus of control. This research was tested using Smart PLS application. Data collection from this study was conducted by distributing questionnaires as many as 353 people in Batam city. Representative bias significantly positively affects investment decision making, availability bias significantly and positively in investment decisions, availability bias moderated locus of control has no effect on investment decision making, and representative bias moderated locus of control has no effect on investment decision making. This research facilitates investors in making investment decisions in Batam city, judging from several factors that influence the decision making helps investors in determining investment and considering every factor that influences Decision making.*

Abstrak: *Tujuan dari penelitian ini adalah untuk menganalisa faktor yang harus dipertimbangkan investor dalam pengambilan keputusan investasi Saham. Penelitian ini dilakukan untuk menilai ketertarikan dalam melakukan investasi dan pertimbangan saat berinvestasi yang dipengaruhi oleh representative bias, availability bias, dan locus of control. Penelitian ini di uji dengan menggunakan aplikasi Smart PLS. Pengumpulan data dari penelitian ini dilakukan dengan cara menyebarkan kuesioner sebanyak 353 orang yang berada kota Batam. Representative bias secara signifikan positif mempengaruhi investment desicion making, availability bias secara signifikan dan positif dalam keputusan investasi, availability bias yang dimoderasi locus of control tidak berpengaruh terhadap investment decision making, dan representative bias yang dimoderasi locus of control tidak berpengaruh terhadap investment decision making. Penelitian ini memberi kemudahan investor dalam mengambil keputusan investasi di kota Batam, dilihat dari beberapa faktor yang mempengaruhi pengambilan keputusan ini membantu para investor dalam menentukan investasi dan mempertimbangkan setiap faktor yang mempengaruhi Decision making.*

INTRODUCTION

Capital markets are a component that can be said to be important in today's world economy. The Company also utilizes the capital market as an effort to strengthen its financial position. A capital market or financial device that trades securities such as bonds and equity or shares in the long term issued by the government or private companies. The activity was carried out at the exchange where brokers could meet on behalf of investors (Hadijah, 2017).

Capital market is one of the safe investment targets and can benefit an investor because all activities ranging from transactions and current systems can be studied and there are clear rules. A very safe and legal means of investing for investors is the capital market (Hadijah, 2017).

Investment is one of the efforts to increase the amount of money or property that is now owned. Investments can be trusted to provide returns or returns that exceed expectations over a long period of time. This view convinces investors to deposit their funds into investment instruments. One of the options for investors is stock investment.

Stock Investment is a securities that show the ownership part of a company. If we buy shares we have purchased a portion of ownership of the company, and are entitled to the company's profits in the form of dividends, if a company booked its profit.

The advantage in investing shares is having the right to participate in the General Meeting of Shareholders (GMS) and recognized by the owner of the company, where as the owner of a company's shares has an obligation in determining the company's leadership and strategy at the time of the meeting. In addition, having the right to receive dividends from each share that has been owned, dividends are distributed equally to all shareholders so that the more shares owned, the more dividends obtained (IndoPremier, 2018).

Through Tribun Batam (2018) it is known that the number of investors from Kepri in the stock market continues to increase. In 2016 there was an increase of 0.48%, the first three months of 2018 the number of investors from
Kepri origin increased by 7.03% from the number last year. This states that investors in Riau Islands are increasingly due to the increase every year. There are about 9,800 investors in Kepri, where investors who play in shares there are 51%, invest in mutual funds 40%, and the remaining 7% in state letters.

All people certainly know the importance of saving money for the future, not only saving but also investing it. Although so many people have not dared to invest their money into stock investments even to learn about investing, people are not willing to do so. There are several reasons that people do not dare to invest in stocks. One reason is that people feel they have nothing. Most people after earning from the salary they get instead pay the necessities of daily life such as home installments and others, so it is not thought to invest some of their income. In addition, the capital market is also quite confusing for people who do not know the capital market. There are a lot of terms that need to be understood, analysis that needs to be done and so on, so that makes most people find it difficult to learn and not invest in stocks.

Some of the risks that can be experienced in investing in shares are the indity of dividends, if a company gets a large loss then the shareholders do not get the slightest dividend. Losses are not shared by shareholders as is dividends. In addition, the risks that will be obtained if a company goes bankrupt. Bankruptcy is the worst risk for shareholders, as shareholders have the most recent rights after the company is liquidated and the proceeds are used to pay taxes and employee salaries (IndoPremier, 2018).

The case that occurred in the stock investment is the disclosure of a case of manipulation of the share price of PT Sekawan Intipratama Tbk (SIAP) which became a slap to the credibility of the Financial Services Authority (OJK) as a capital market referee. Indications that SIAP was going to manipulate stocks have

been predictable for a long time, the first is that in the past year IDX has repeatedly stopped the SIAP transaction shares due to unnatural prices, thus not supported by corporate action and solid financial fundamentals. The authorities did not know this so there was a default of Rp 100 billion from one of the securities companies that facilitated the transaction of SIAP shares. There are 8 securities companies involved in this SIAP transaction. The existence of this case proves the suspicions that have occurred so far (Silitonga, 2016).

Such an event can be anticipated taking into account factors that could be detrimental to stock investment. Investment decisions are also very important when making investments. The definition of investment decision is where management policy in using funds available on an asset that is expected to benefit the company. Decisions in investing cannot be made with origin because it can cause large losses. The investment decision-making process relates to how people make investments. Investment decisions must be wise, especially in making investment decisions about the type of securities, how big the investment amount is and when the investment is made.

The development of investors who are in the city of Batam lately and the number of options to invest does not cover the possibility of failure to invest and harm all parties, so investors must also know what factors are considered at the time of investment decision making, so as to minimize unwanted events.

The cause of the failure to invest shares in the capital market is not finding out information about the investment properly and correctly. Some Indonesians fall into Availability bias, a bias where people who make decisions rely on clearly available information rather than examining alternatives and other procedures (Rasheed *et al*., 2018).

Over the past few years, researchers have tried to highlight several factors of investor representation behavior so that something like this causes investors to argue irrationally. Modern-era investors are deeply seduced by the reputation and celebrity effects of a company. A frequent recurring phenomenon is looking back rather than looking ahead, but investors fail to realize that future results can vary from previous experience. Representative Bias can occur where determining investment decisions is based on the past experience of an investment so as to make financial decisions that do not benefit (Rasheed *et al*., 2018).

There are investors who are unaware of their abilities and become too risk a avoidance and there are also investors who overesti plan and believe it can change market conditions. When the public believes that the expected results occur if done with their own abilities, it can be said internal locus of control and if the public thinks positive results as luck, fate, and so on then it can be said External Locus of Control. The research suggests that the presence of Internal Locus of Control will lead investors to biased and unreasonable decisions (Rasheed *et al*., 2018).

Based on previous problems, researchers are interested to know and carry out research with the title **"Analysis of Factors that are Considered by Investors in Stock Investment Decision Making in Batam City".**

The problems that are the focus of this research are outlined in several short points that will be developed in the research. Some of these points include:

1. The number of investors who err in making decisions resulting in less confidence to invest and investors do not dare to make investments such as stock investments.
2. The number of investors who do not seek information in advance in making investments. This can cause investors to lose money due to investment because they do not know the background of the stock investment to be made.
3. The number of investors who think that future market conditions may change without the correct forecast so that the risk of investment failure can occur due to biased and irrational decisions.

The purpose of this research is to find out the solution to the problem that is happening among investors in investing in stocks. The related problem is the lack of information obtained before investing in

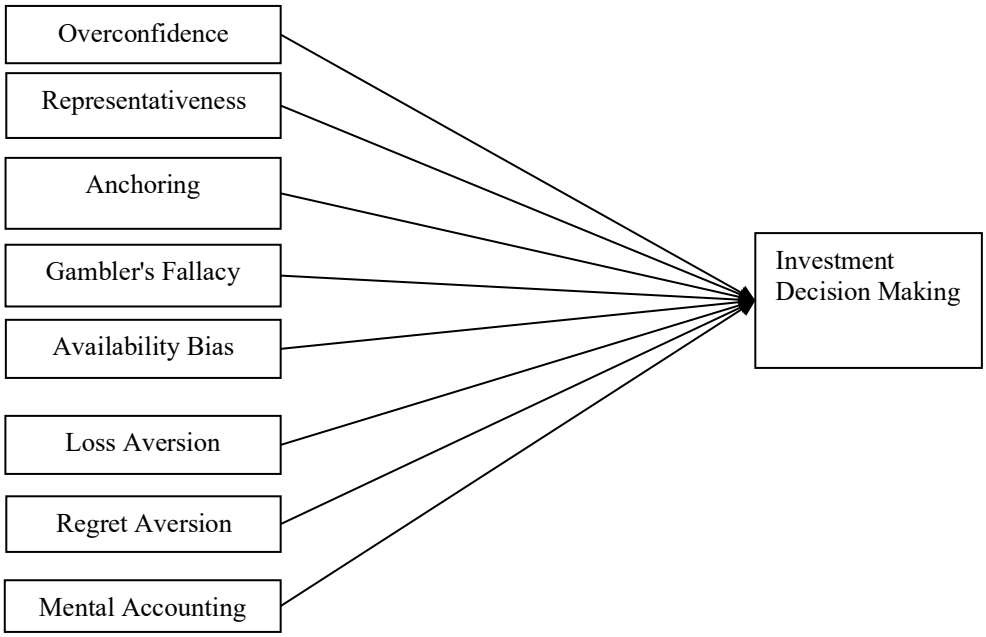
stocks, so that failure to make investments can occur. Investors are often mistaken in taking investments and think that market conditions can change in the future. This incident makes investors not find out about the stock investment that will be made, so there can be failure in making stock investments. This research focuses on finding solutions to the research problems discussed.

The benefits of research that can be taken are as follows:

1. Theoretical benefits
   The results of this research can expand knowledge and insights for academics or students and provide a broader assessment of decision-making made by investors.
2. Academic benefits
   As a learning material and gain knowledge about decision making.
3. Benefits for the company
   As additional information about factors that can be considered in determining investment decisions.
4. Benefits for Investors
   The results of this research are expected to share information with investors to be more vigilant in conducting investment activities and decision making.

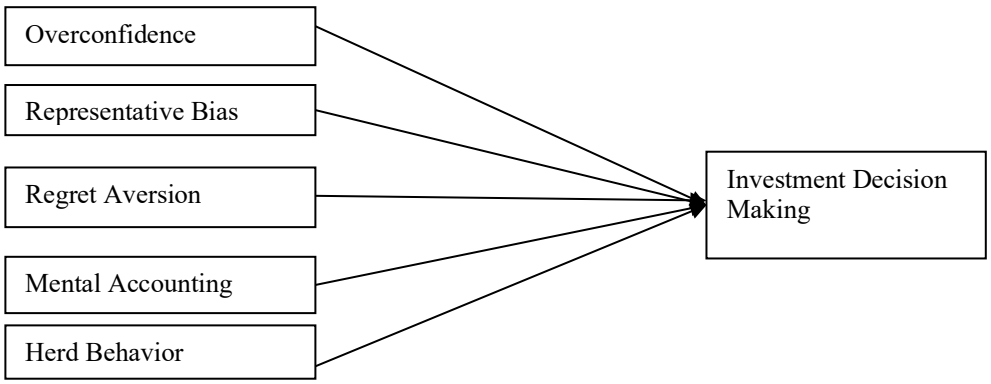
LITERATURE REVIEW

Aziz and Khan (2016) compiled this research with the aim of knowing the factors that can be influenced by decisions in investing in the Stock Market in Pakistan. There are several factors used in this study, namely availability bias, loss aversion, overconfidence, representativeness, anchoring, gambler's fallacy, regret aversion, and mental accounting that affect dependent variables in this study namely investment decision making.



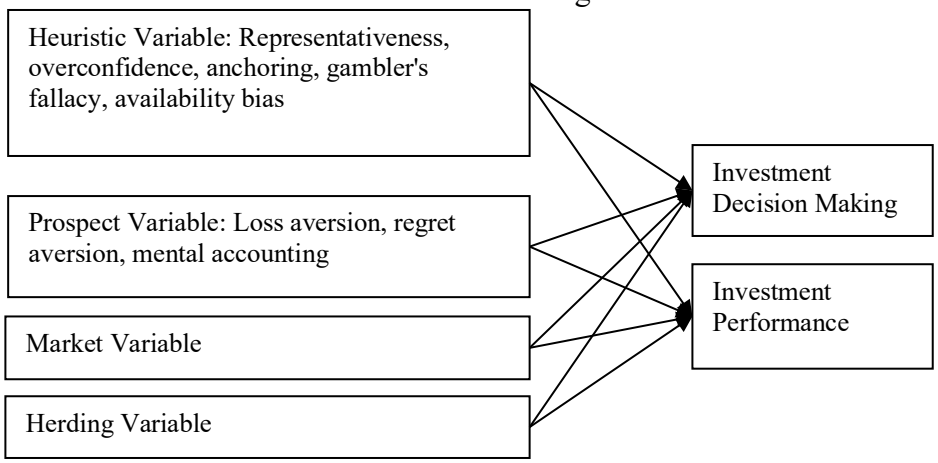
Picture 2.1 Behavioral Factors Influencing Individual Investor's Investment Decison and Performance Research Model, Evidence from Pakistan Stock Exchange. Source: Aziz and Khan (2016).

Antony & Joseph (2017) examines behavioral factors to investment decisions implemented by investors. Some 916 questionnaires have been distributed. Representativenes bias, Overconfidence bias, regret aversion, mental accounting, and herd behavior are independent variables. The dependent variable in this study is Investment decision making.



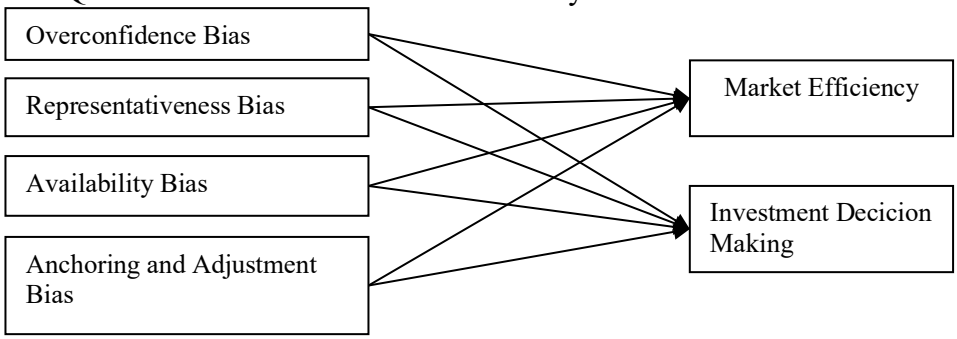
Picture 2.2 Influence of Behavioural Factors Affecting Investment Decision Research Model—An AHP Analysis. Source: Antony and Joseph (2017).

Anum *et al.,* (2017) analyzes aspects of behavior that can influence decisions in investing. The data generated and collected in this study uses SPSS application. Independent variables in this study include, Heuristic Variable and Prospect Variable. Herding Variable and Market Variable while dependent variables used in this research are Investment decision making and Stock Performance.



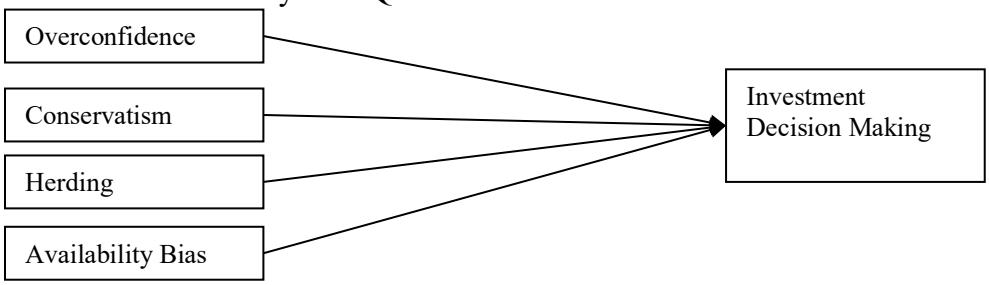
Picture 2.3 Research Model Behavioral Factor and Their Impact on Individual Investors' Decision making and Investment Performance: Empirical Investgation from Pakistan Stock Market. Source: Anum *et al.,* (2017).

Shah *et al.,* (2018) compiled research by linking several factors that can be influenced by investment decisions. These factors are Overconfidence bias, Representativeness bias, Availability bias, and Anchoring and adjustment bias. Questionnaires were distributed as many as 143 focused on investors.



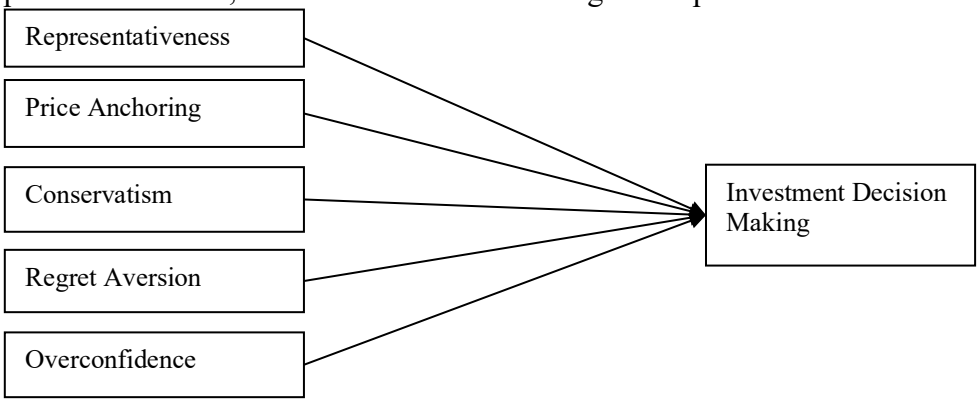
Picture 2.4 Research Model Heuristic Biases in Investment Decision Making and Perceived Market Efficiency. Source: Shah *et al*. (2018).

Bakar, Ng, and Yi (2016) analyzed research that aims to understand the factors that can be influenced by investment decisions. Independent variables contained in this study are herding, overconfidence, conservatism and availabilty bias. Questionnaires that have been distributed as many as 200 people.



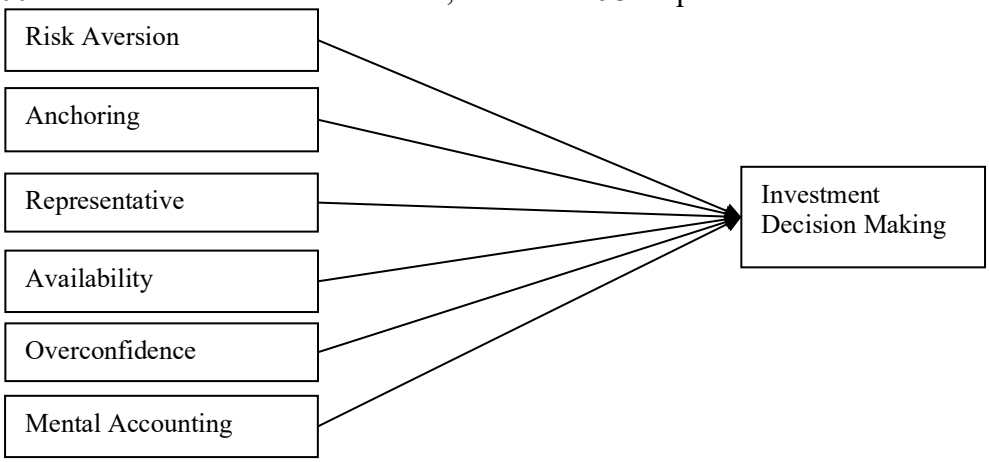
Picture 2.5 Research Model The Impact of Psychological Factors of Investors' Decision Making in Malaysian Stock Market: A Case of Klang Valley and Pahang. Source: Bakar and Yi (2016).

Chitra (2014) examines the attitude of investors in making decisions in investing. Data collected by 110 individual investors. Representativeness, price anchoring, conservatism and overconfidence are independent variables, investment decision making is a dependent variable in this study.



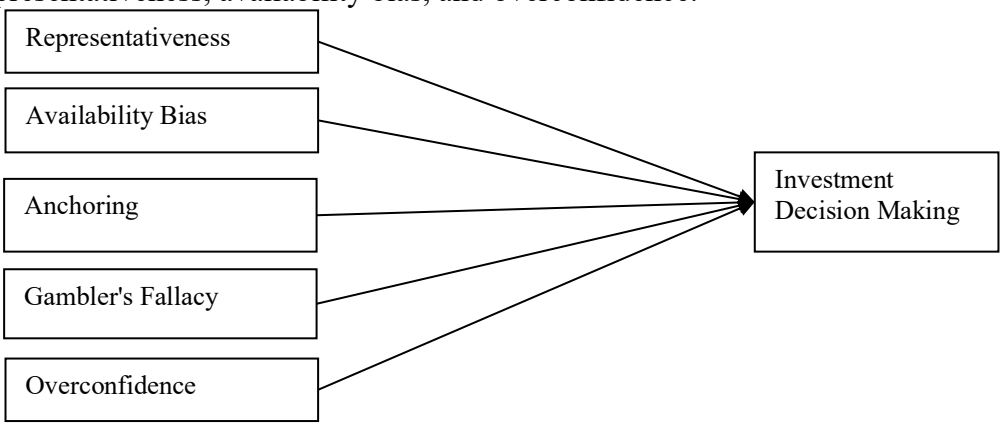
Picture 2.6 Research Model Does Demographic Profile Create a Different in the Investor Behavior?. Source: Chitra (2014).

Chaffai and Medhioub (2014) conducted research with the intention of knowing investor decision behavior with factors consisting of represntative, availability, risk aversion, anchoring, and mental accounting. Investment decision making is a dependent variable in this study. There were 32 questionnaires distributed to 300 Tunisian stock market investors, of which 193 responded.



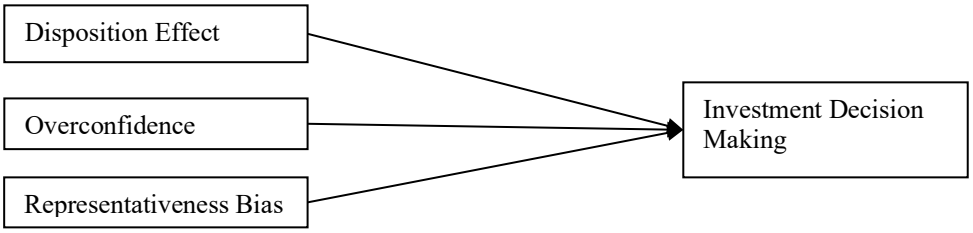
Picture 2.7 Research Model Behavioral Finance : An Empirical Study of the Tunisian Stock Market. Source: Chaffai and Medhioub (2014).

Fachrudin *et al.* (2017) analyzes the influence of factors that occur when making investment decisions that occur in the city of Medan. Questionnaires that have been distributed as many as 120 people centered on investors in the city of Medan. Independent variables include anchoring, gambler's fallacy, representativeness, availability bias, and overconfidence.



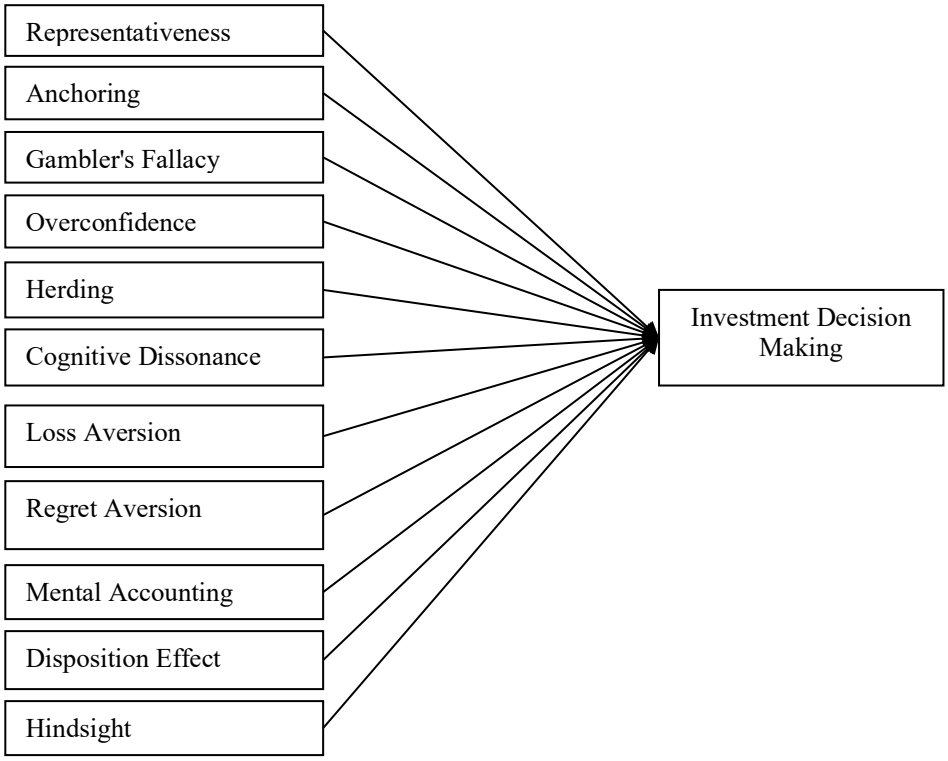
Picture 2.8 Research Model Analysis of Heuristic Behavior on Investment Decision. Source: Fachrudin *et al.* (2017).

Chen *et al* (2007) examined three aspects that could be influenced by decisions to invest in China. Representativeness, overconfidence and disposition effect are independent variables used when conducting this research while the dependent variable is investment decision making.



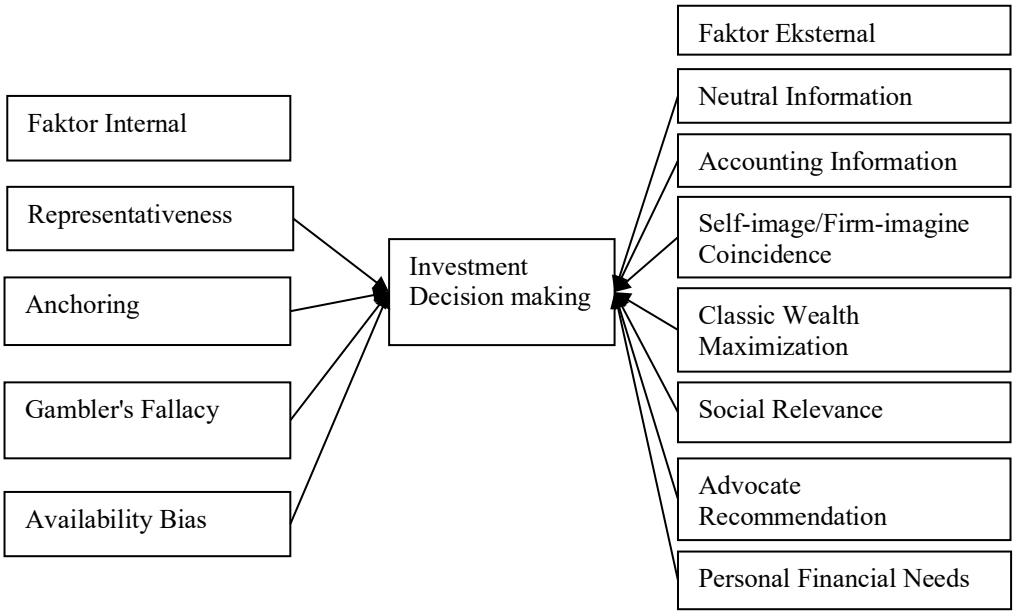
Picture 2.9 Research Model Trading Performance , Disposition Effect, Overconfidence, Representativeness Bias, and Experience of Emerging Market Investors. Source: Chen *et al* (2007)

Grover and Singh (2015) analyzed this research with the aim of finding out the influence gained by investors who make property investments in Udham Singh Negar. These factors are overconfidence, representativeness, anchoring, gambler's fallacy, loss aversion, regret aversion, herding, cognitive dissonance mental accounting, disposition effect and hindsight. The dependents used in this study are investment decision making.



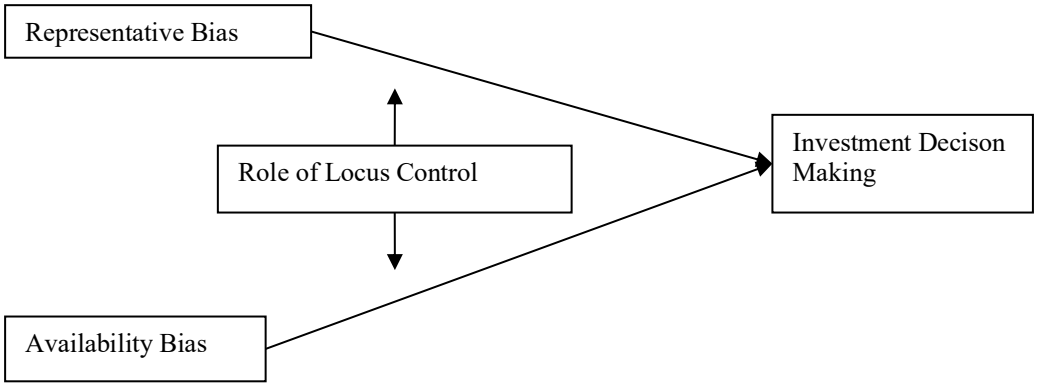
Picture 2.10 Research Model Study on Behavioural Factors Influencing Investment Decision in Real State: A Case Study of Udham Singh Nagar (Uttrakhand). Source: Grover and Singh (2015).

Christie & Isidore (2015) analyzes investors' indiviual behavior within the Indian sphere. There are factors of internal as well as external independent variables. The internal factor consists of gambler's fallacy, representativeness, anchoring, and availability bias. External factors are self-imagine/firm-imagine coincidence, neutral information, social relevance, advocate recommendation, accounting information, classic wealth maximization and personal financial needs. The dependent variable is investment decision making. Picture 2.11 Research Model Review of The Individual Equity Investor's Behavior in the Indian Context. Source: Isidore and Christie (2015).



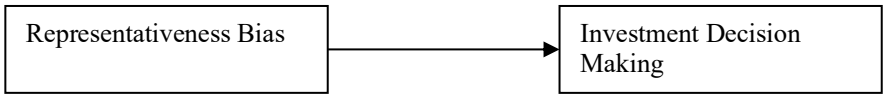
Picture 2.11 Research Model Review of The Individual Equity Investor's Behavior in the Indian Context. Source: Isidore and Christie (2015).

Ikram (2016) analyzes bias or suspicion of behavior in making decisions in investing. Factors that influence Investment Decision Making are Availability Bias and Representative Bias moderated by Locus of Control.



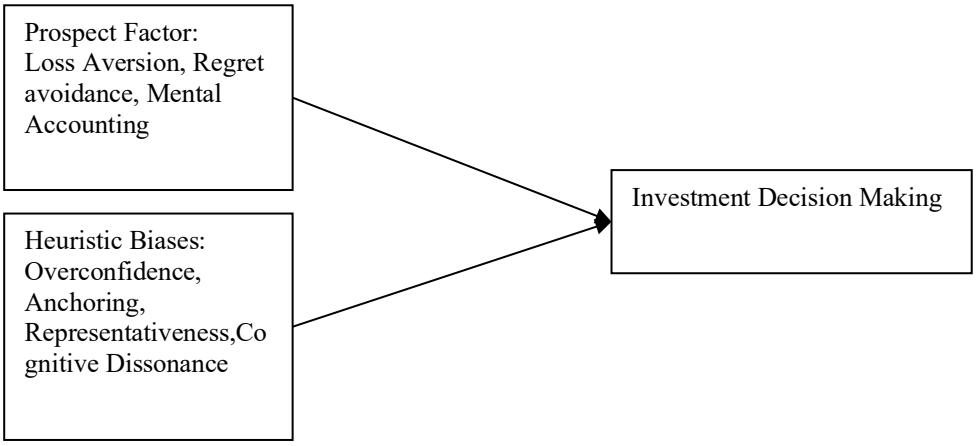
Picture 2.12 Research Model An Empirical Investigation on Behavioral Determinantson, Impact on Investment Decision Making, Moderating Role of Locus of Control. Source: Ikram (2016).

Irshad *et al.* (2016) examined the effect of representative bias on variables of dependent investment decisions. The questionnaire that was distributed during the research was 160 pieces focused on investors in Islamabad.



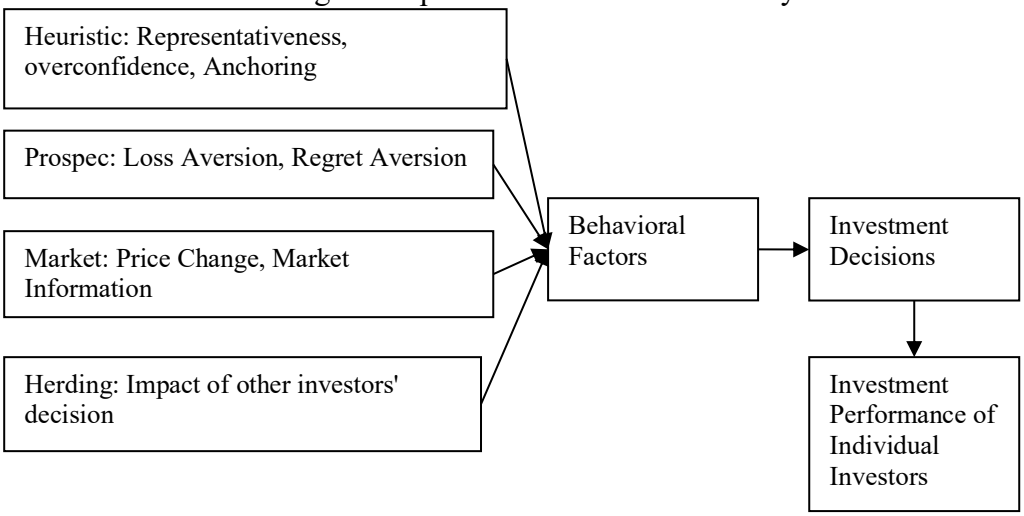
Picture 2.13 Research Model Effect of Representativeness Bias on Investment Decision Making. Source: Irshad *et al.* (2016).

Juliet (2017) develops about the behavior of people who want to invest in deciding to make investment decisions that want to be made. Independent variables used include, regret avoidance, mental accounting, loss aversion, overconfidence, anchoring, representativeness, and cognitive dissonance. The collected data will be managed using the SPSS program, as many as 60 questionnaires that have been distributed to investors. The dependent variable used is Investment Decison Making.



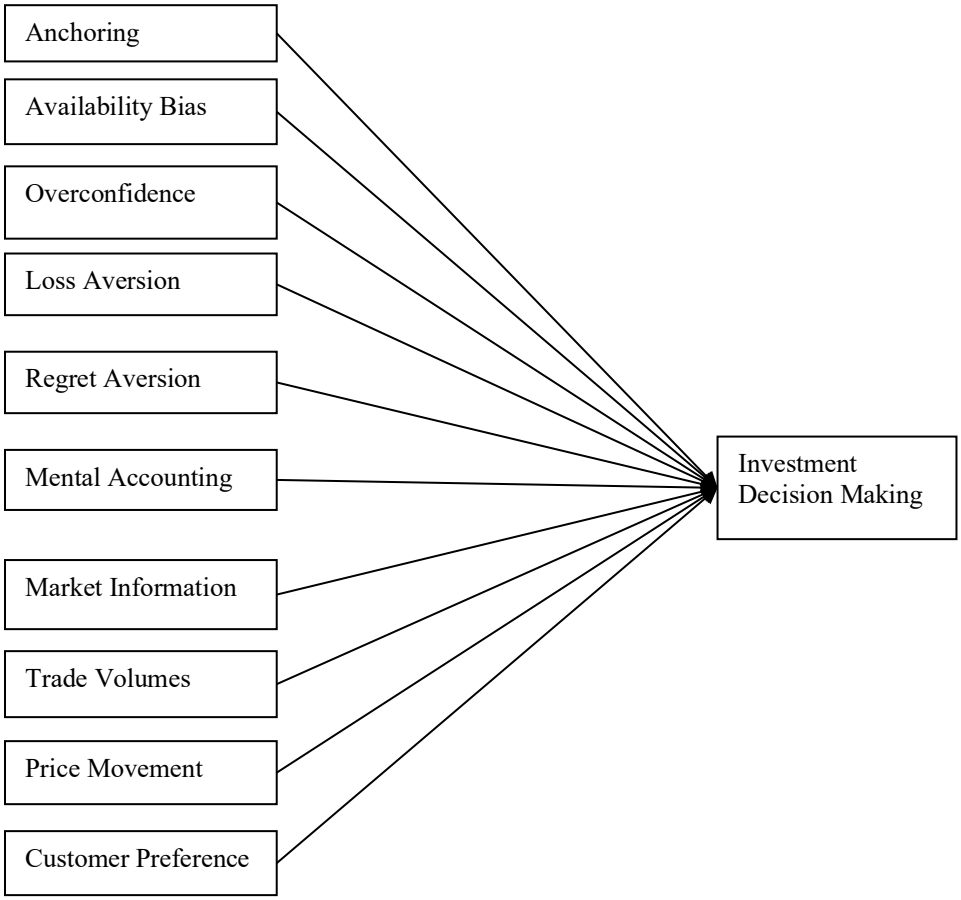
Picture 2.14 Research Model Behavioural Factors that Influence Individual Investment Decison at The Nairobi Securities Exchange. Source: Juliet (2017).

Kengatharan (2014) analyzes the behavior aspects of people who want to make stock investments in determining investment decisions located on the Colombo Stock Exchange. The data compiled in this study with the dissemination of questionnaires and processed using the SPSS program. Independent variables contained in this study are herding, overconfidence, availability bias, prospec factor and market. Investment decision making is a dependent variable in this study.



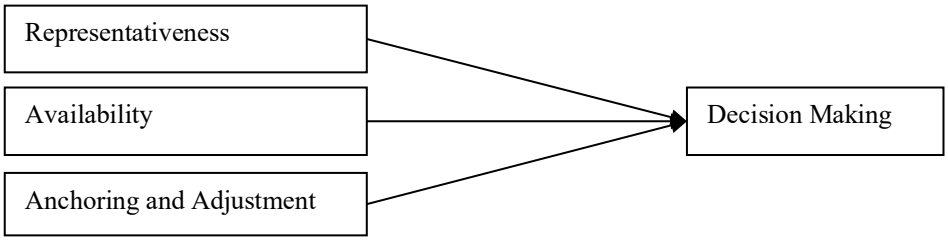
Picture 2.15 Research Model The Influence of Behavioral Factors in Making Investment Decision and Performance: Study of Investors of Colombo Stock Exchange, Sri Lanka. Source: Kengatharan (2014).

Kimeu *et al.* (2016) examined with a view to explaining aspects that could be influenced by investment decisions precisely in the Nairobi Stock Market relating to 80 responded people focusing on investors who were investing in stocks and bonds on the Nairobi Stock Market. Anchoring, regret aversion, availability, trade volumes, price movement, overconfidence, loss averison, mental accounting, market information, and customer preference are Independent variable.



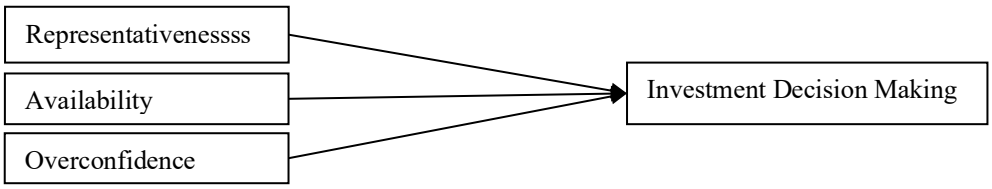
Picture 2.16 Research Model Behavioural Factors Influencing Investment Decision Among Individual Investors in Nairobi Securities Exchange. Source: Kimeu *et al.* (2016).

Kang and Park (2019) examined what types of heuristics are used in bank employee assessments and decision-making processes and the extent to which they prevent rational decision-making due to the systematic biases they generate.



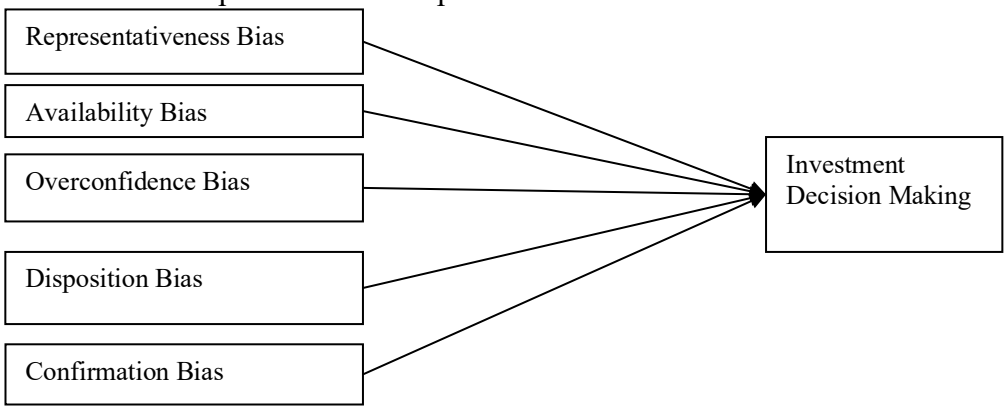
Picture 2.17 Research model Employees' judgment and decision making in the banking industry. Source: Kang and Park (2019).

Gitau, Kiragu, and Kamau (2019) researched with the aim of explaining how people make decisions, come to judgment and solve problems when faced with complex situations or in cases where incomplete information is available. The study concluded that real estate investors in Embu County sometimes do not make rational investment decisions but are influenced by heuristic biased decisions.



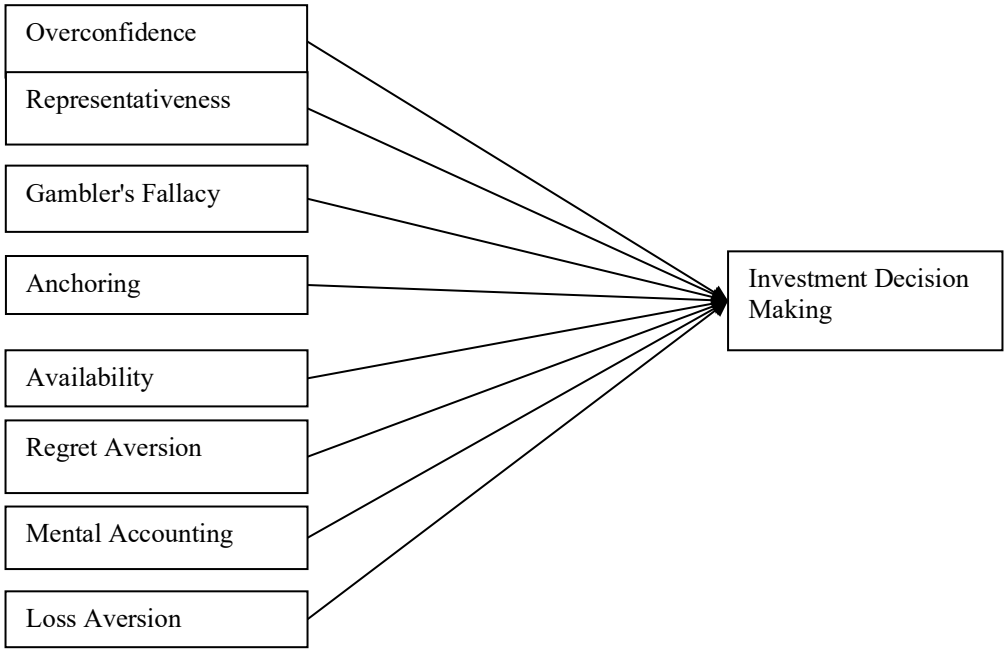
Picture 2.18 Research Model Effect of Heuristic Factors and Real Estate Investment in Embu County, Kenya. Source: Gitau, Kiragu, and Kamau (2019).

Onsomu (2014) aims to know the influence that can identify behavioral biases on investment decisions. In addition, to explain the relationship between the sexes to biased behavior. Questionnaires were distributed to 58 People in Kenya and the target was people who wanted to make an investment from the Nairobi Stock Exchange, Kenya. Representative bias, disposition bias availability bias, overconfidence bias, and confirmation bias are independent while dependent variables are investment decision making.



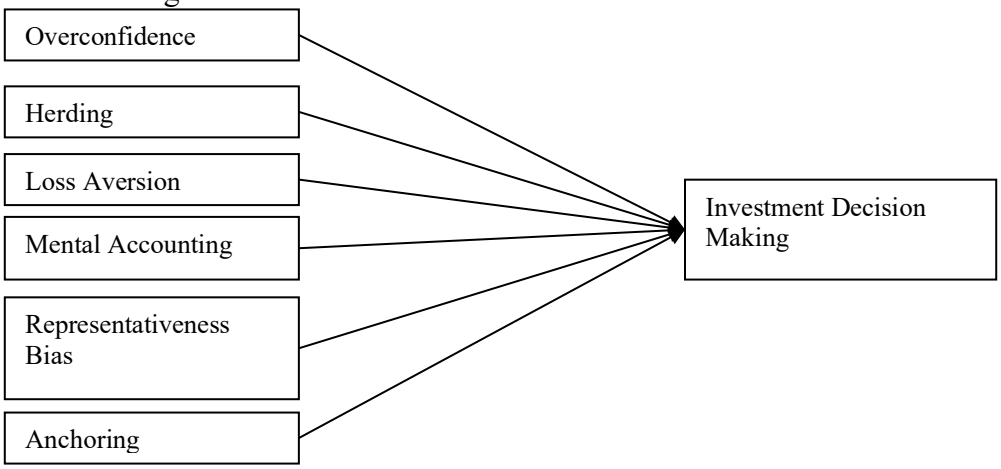
Picture 2.19 Research Model The Impact of Behavioral Biases on Investor Decison in Kenya: Male vs. Female. Source: Onsomu (2014).

Pandey and Jessica (2018) examined the relationship of behavior to decisions in the investment of property in India. The data collected involved 561 respondents who belonged to unprofessional investors. Investment decision making is a dependent variable in this study while mental accounting, loss aversion anchoring, availability, overconfidence, representative, gambler's fallacy, regret aversion is an independent variable.



Picture 2.20 Research Model Measuring Behavioural Biases Affecting Real Estate Investment Decision Making in India. Source: Pandey and Jessica (2018).

Rekik and Boujelbene (2013) conducted an analysis of this research and obtained several factors that influence the stock market in Tunisian, including mental accounting, overconfidence, herding, loss aversion, representativeness bias, and anchoring which are independent variables. The dependent variable is investment decision making.

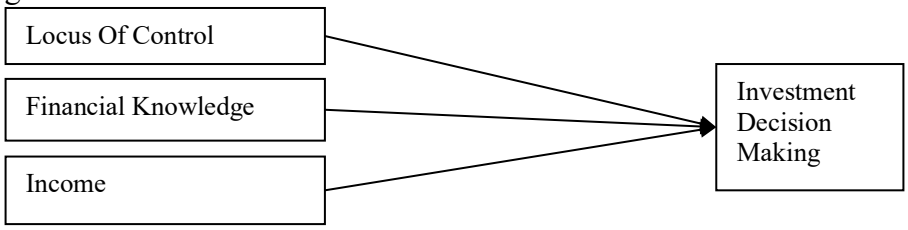


Picture 2.21 Research Model Determinants of Individual Investor Behaviors: Evidence from Tunisian Stock Market. Source: Rekik and Boujelbene (2013).

Ranjbar *et al.,* (2014) examined financial behavior factors in making investment decisions on the Teheran Stock Exchange. A total of 148 questionnaires have been distributed, to collect data from this study. Independent variables include availability bias, loss aversion, agency, overconfidence, anchoring, gambler's fallacy, regret aversion, mental accounting, selecting equity by other investors for exchange, other investors' decisions on selling and purchasing equity, volume of the selected equity by investors for exchange, volume of the selected equity by investors for exchange and considering speed. The dependent variable in this study is investment decision making.

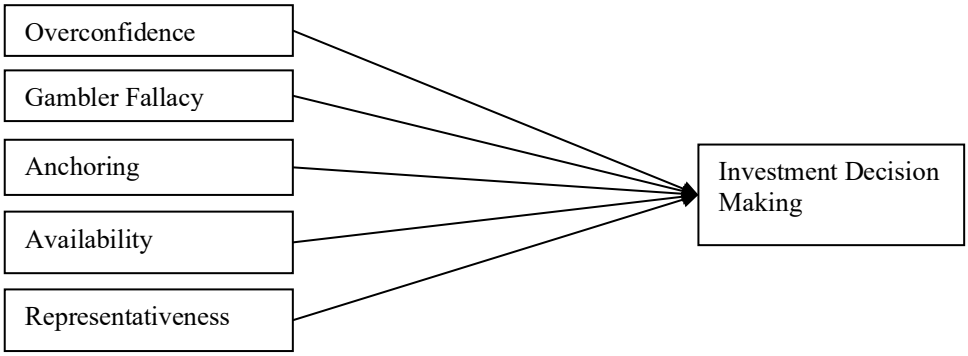
Picture 2.22 Research Model Analyzing the Effective Behavioral Factors on the Investors' Performance in Teheran Stock Exchange. Source: Ranjbar *et al.* (2014).

Rashid *et al.* (2018) analyze research to find out the influence of Income, Locus of Control, Financial Knowledge on Investment Decision Making. Distribute questionnaires to employees of PT. Pertamina (persero) located in one of the branches in Indonesia, Padang which is conducting investment activities is a way of collecting data used in this research.



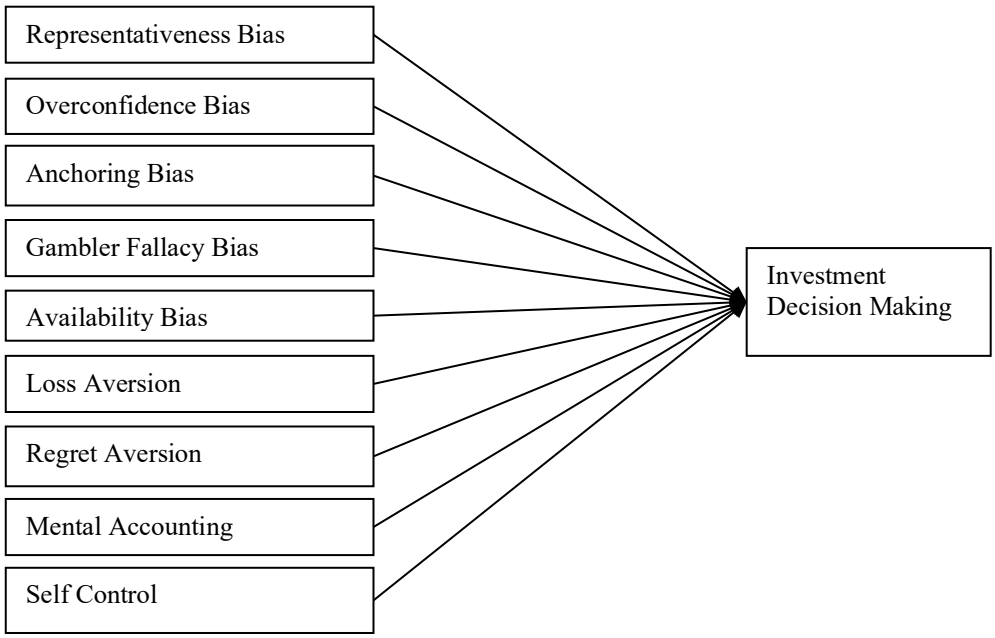
Picture 2.23 Research Model The Effect of the Locus of Control, Financial Knowledge and Income on Investment Decisions. Source: Rashid *et al*. (2018).

Kirera & Mburugu (2019) discusses the theory of behavioral finance where it is based on psychology. Strive to understand how emotions and cognitive errors affect each investor's decisions. The concept of investor decision making process informs the design and delivery of investment opportunities. The target group is individual investors living in Meru District with regular trading on the exchange. A total of 144 individual investors were given questionnaires.



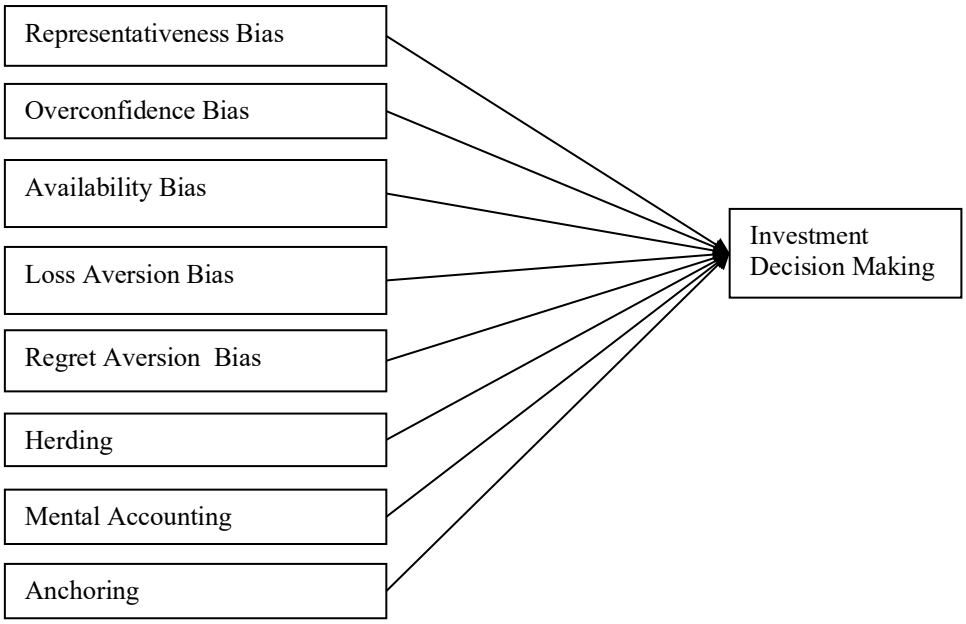
Picture 2.24 Research Model Impact of Heuristic Biases on Individual Investor Decision Making Process at Nairobi Securities Exchange: A survey of Individual Investors in Meru Country. Source: Kirera & Mburugu (2019).

Shabarisha (2015) discusses the role of investors in making decisions in investing. There are factors used in this study, among others, regret aversion, mental accounting, gambler fallacy, availability bias, representativeness, overconfidence, anchoring, loss aversion, and self control. A total of 30 questionnaires were distributed and focused on retail investors in Shimoga District. The dependent variable is Investment Decision Making.



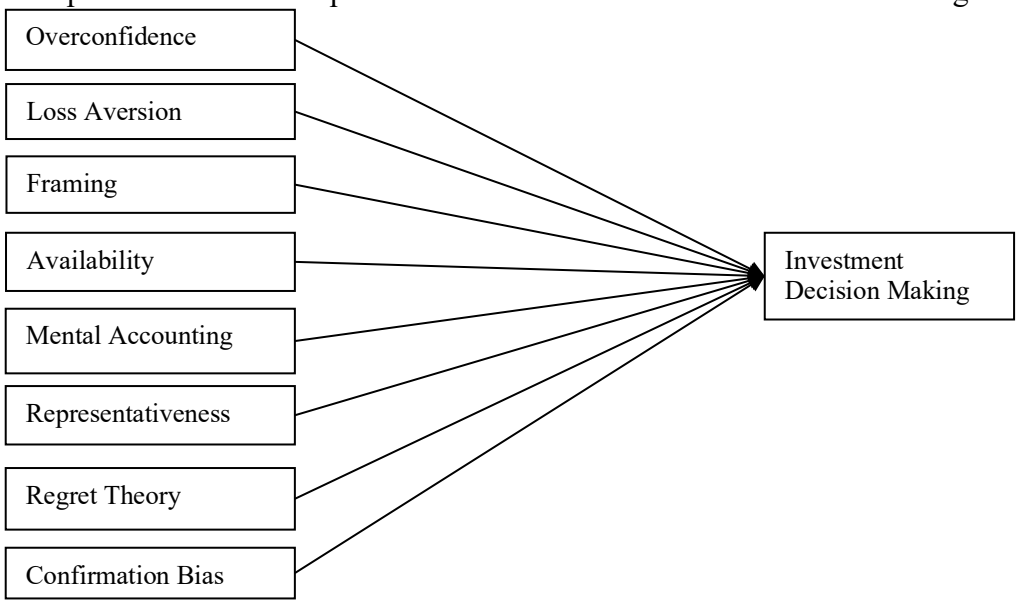
Picture 2.25 Research Model Heuristic and Biases Related to Financial Investment and The Role of Behavioral Finance in Investment Decision. Source: Shabarisha (2015).

Subramaniam (2017) discusses the behavioral aspects of investment decisions focusing on household investors participated by 1810 respondents in North Sri Lanka Province. Investment Decision Making is a dependent variable in this research. Representative, overconfidence, availability, loss aversion, regret aversion, herding, mental accounting, and anchoring are independent variables.



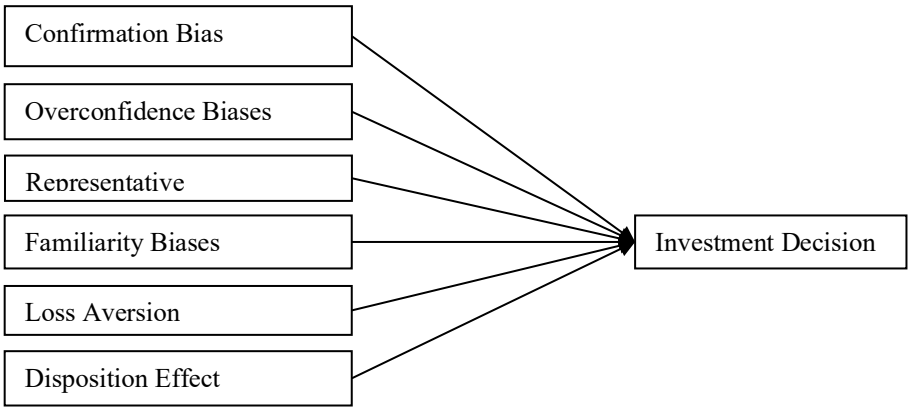
Picture 2.26 Research Model Heuristic and Biases Related to Financial Investment and The Role of Behavioral Finance in Investment Decision. Source: Subramaniam (2017).

Tripathy (2014) discusses the analysis of the biased character of psychologists in making decisions in investing by associating 128 investors who are in the City of Cuttack and Bhubaneshwar. Independent variables are overconfidence, loss aversion, anchoring, framing, confirmation bias, regret theory, mental accounting and representativeness. Dependent variables are investment decision making.



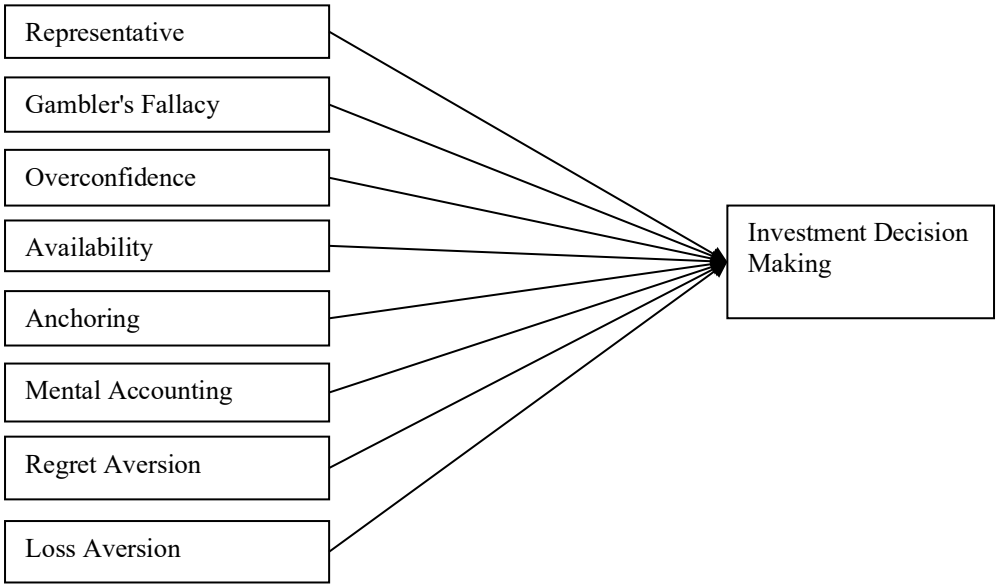
Picture 2.27 Research Model Role of Psychological Biases in the Cognitive Decision Making Process of Individual Investors. Source: Tripathy (2014).

Verma *et al*. (2016) discusses the factors influenced by investment decisions, namely, confirmation bias, overconfidence biases, representative, familiarity biases, loss aversion, disposition effect and investment decision are the factors influenced.



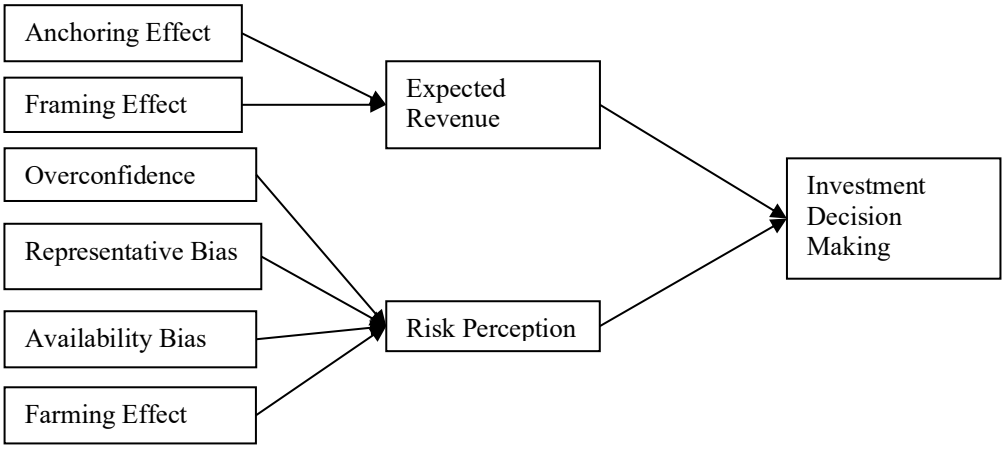
Picture 2.28 Research Model Impact of Behavioral Biases in Investment Decision and Strategies. Source: Verma (2016).

Waweru *et al.* (2014) discussed the purpose of the study, namely knowing several attitude factors that can influence decisions when investing in the Kenya property market. A total of 155 questionnaires were distributed and received by respondents. Investment decision making is a dependent variable in Waweru et al. research. Independent variables are representative, gambler's fallacy, overconfidence, availability, anchoring, mental accounting, regret aversion, and loss aversion.



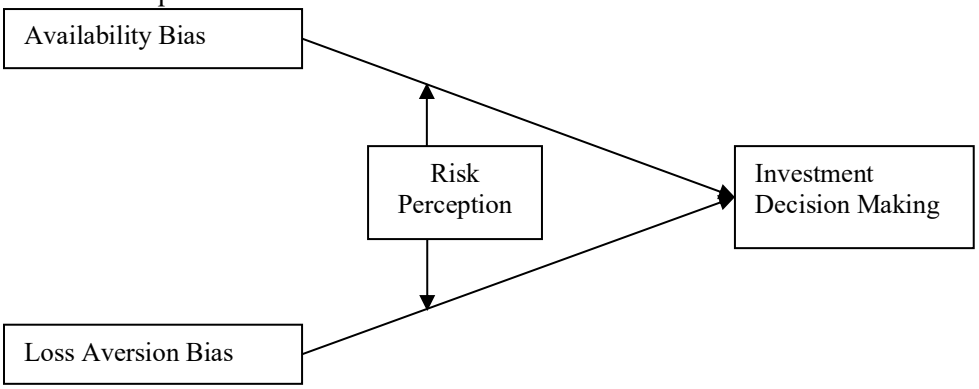
Picture 2.29 Research Model Behavioural Factors Influencing Investment Decisions in the Kenya Property Market. Source: Waweru *et al.* (2014).

Yaowen *&* Suqing (2015) discusses the influence of behavior on decision making when investing mediates Expected Revenue and Risk Perception. There are six independent variables used in this study consisting of Farming Effect, Anchoring, Overconfidence, Representative Bias, Framing Effect, Availabiliy Bias and Anchoring. The distribution of questionnaires has been carried out, there are 78 reponden focused on MBA students at the University of Science and Technology located in Taiyuan.



Picture 2.30 Research Model Impact of Cognitive Bias on Improvised Decison Makers' Risk Behavior: An Analysis Based on the Mediating Effect of Expected Revenue and Risk Perception. Source: Yaowen *et al*. (2015).

Zat & Khan (2017) examines the influence of loss aversion bias and availability bias on decisions in investing as its independent variables and with consideration of risk perception as a moderator of this researched model. A total of 230 people have filled out questionnaires that have been distributed.



Picture 2.31 Research Model Impact of Availability Bias and Loss Aversion Bias on Investment Decision Making, Moderating Role of Risk Perception. Source: Zat dan Khan (2015).

Dependent Variables used in research are investment decision making. Investment decision making is the act or process of planting money with the aim of obtaining profit in the future. Every investor wants the maximum return on their investment. (Rasheed, Rafique, Zahid, & Akhtar, 2018).

According to Ikram (2016), investing is a way of investing money with the aim of being able to benefit in the future. So, people who want to invest can see through research and with common sense without being influenced by circumstances can produce good results.

Representative Bias occurs due to doubtful financial decisions that are defined as financial decisions that do not provide profit due to consideration when decision making is based on the past experience of an investment. Modern-era investors are deeply seduced by the reputation and celebrity effects of a company. A good investment is always seen from a good experience, sometimes a good experience can occur losses in the future. This is because investors are more interested in taking an investment in an easier way regardless of other aspects (Rasheed *et al.,* 2018). According to Rekik and Boujelbene (2013), representative bias is the behavior of investors who consider past or recent takings to represent what they expect in the future. While Grover and Singh (2015) representative bias is a quick decision taking into account past experience to direct the decision-making process.

Investment decision based on representative bias is defined as an investor who wants to make a decision by looking at an investment from his reputation, looking at his past experience and making decisions quickly.

Previous research has concluded that representative bias affects investment decisions are Anum *et al.* (2017), Chaffai (2014) and Fachrudin *et al*. (2017).

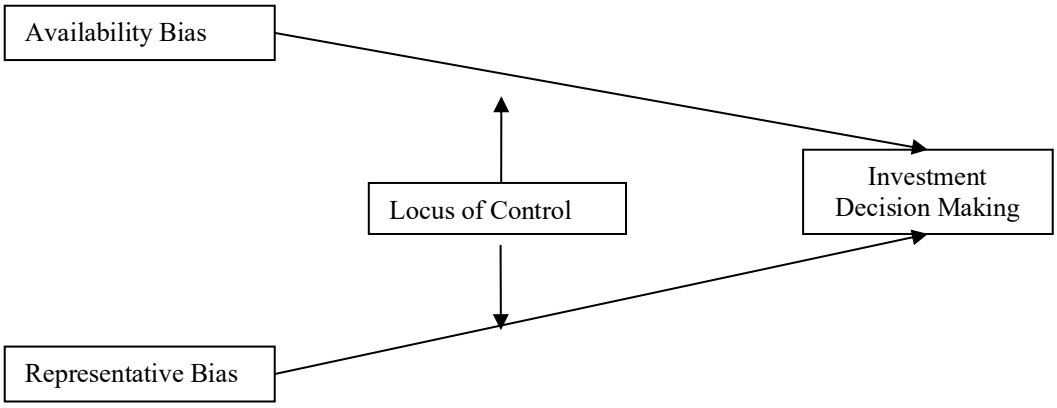
Availability bias is a bias in which people who make decisions rely on clearly available information rather than figuring out alternatives and other procedures (Rasheed *et al.,* 2018). According to Shabarisha (2015), availability bias means investors make indiscriminate decisions over the most available information. This can lead to fewer returns and sometimes worse returns.

Investment decisions against availability bias mean that an investor only relies on the information available when making an investment, so that the decision can have a bad impact in the future.

Previous research results between availability bias against influential investment decisions include Yaowen and Suqing (2015), Juliet (2017) and Ikram (2016).

According to Rasheed *et al.* (2018), when people believe that the expected results occur when done with their own abilities it is referred to as the locus of internal control. In this study, locus of control serves as a moderator that can change or form the strength of availability bias and representative bias relationship towards investment decision making or decision in investing.

There are some investors who do not know their abilities and become too risk-a-dodge and there are also some investors who overesti plan their abilities and believe it can change people's perception of a bad or good investment. In this research, it means that an investor is based on his/her confidence and with the availability of information and also investment experience in the past can be difficult to make an investment.



Picture 2.32 Research Model of Factor Analysis that Becomes Investor Consideration in Stock Investment Decision Making in Batam City. Source: (Rasheed *et al*., 2018).

Here's the hypothesis used in this study:

H_1: Availability Bias has a significant positive effect on Investment Decison Making

H_2: Representative Bias has a significant positive effect on Investment Decison Making.

H_3: Locus of control moderates the relationship between Representative Bias and Investment Decison Making.

H_4: Locus of control moderates the relationship between Availability Bias and Investment Decision Making.

Methods

The type of research conducted in this research is environmental data survey with data collection method conducted by distributing questionnaires. The questionnaire in this study focused on stock investors located in Batam City.

This study aims to find out or formulate hypotheses related to factors that can influence the attitude of individual investors, namely representative bias and availability bias that acts as an independent variable and locus of control that serves as a moderator for decision making in investing. The problem characteristics of this study can be concluded as causal comparative research that analyzes the causes that will occur and also the consequences of the existence of certain factors.

In this research, the topic taken while doing research is people who have made investments in a period of several years or can be said to be investors in the city of Batam. Experience in investing is indispensable in this research so that it can be known what factors can influence a person's behavior in investing decision making.

Non probability sampling is a sampling technique that does not provide opportunities or opportunities for each member of the population to be used as a sample member (Ridwan, 2015). Non probability sampling is a sample used in this study. There are several types of non probability sampling, the type used in collecting samples is purposive sampling where sampling to respondents who have specific criteria that have been determined by researchers. The criteria used include the length of investing shares in the city of Batam. According to (Hair *et al*, 2014) the size of the sample is determined by the 1:10 method where it can be interpreted that each question is shared with 10 respondents. The questionnaire contained in this study amounted to 24 questions so that the total sample to be distributed to respondents was 240 samples.

In this study, there is Representative Bias and Availability Bias which is an independent variable, Locus Of control as moderating variable and Investment Decision Making as dependent variable. A likert scale that begins with (1) strongly disagreeing (SDA), (2) disagreeing (DA), (3) sufficient (S), (4) agreeing (A), (5) strongly agreeing (SA) is a measuring tool for every question to be tested.

Dependent variables are variables that are affected, due to the presence of free variables. It is also commonly referred to as an output variable (related variable).

According to Sugiono (2016) dependent variables are variables that are influenced or known as variables that are the result of independent variables. In this study, the dependent variable is Investment Decision Making.

Investment Decision Making is one of the thought processes when selecting investments from several alternatives or opportunities that best suit one's goals to get solutions about future forecasts. There are 5 questions about Investment Decision Making tested using a likert scale starting with (1) strongly disagreeing (SDA), (2) disagreeing (DA), (3) sufficient (S), (4) agreeing (SA), (5) strongly agreeing (SA).

Sugiono (2016) explained that independent variables are variables that cause or arise changes to dependent variables, or also referred to as affected variables. Factors that affect dependent variables are Representative bias, Availability bias and Locus of Control.

The general understanding of Representative Bias is where a person assesses the possibility of an event based on its proximity to other events, so that it can be assessed from several possibilities influenced by Investment Decision Making.

Representative Bias is the behavior can make the results of financial decisions end incorrectly, so it can be interpreted as financial decisions that do not provide profit due to consideration when decision making is based on the past thinking of an investment. There are 6 questions about Investment Decision Making tested using a likert scale starting with (1) strongly disagreeing (SDA), (2) disagreeing (DA), (3) sufficient (S), (4) agreeing (A), (5) strongly agreeing (SA).

According to Rasheed *et al*. (2018) Availabilty Bias is a bias of availability or availability of heuristics referring to the tendency of humans to assess an event easily and with information already available to them so that they do not conduct alternative examinations and other procedures. There are 5 questions about Investment Decision Making tested using a likert scale starting with (1) strongly disagreeing (SDA), (2) disagreeing (DA), (3) sufficient (S), (4) agreeing (A), (5) strongly agreeing (SA).

When the public believes that the expected results occur if done with their own abilities, it can be said internal locus of control and if the public thinks positive results as luck, fate, and so on then it can be said External Locus of Control. The research suggests that the presence of internal locus of control will lead investors to biased and irrational decisions (Rasheed *et al.,* 2018). There are 8 questions about Investment Decision Making tested using a likert scale starting with (1) strongly disagreeing (SDA), (2) disagreeing (DA), (3) sufficient (S), (4) agreeing (A), (5) strongly agreeing (SA).

The data source of this study is primary data, by distributing several questionnaires to respondents online using Google Form. The questionnaire is a general question related to Investment Decision Making. Other general questions such as name, phone number, age, and income are conducted in order to know more clearly the identity of the respondent.

Questionnaires given to respondents related to "Representative Bias, Availability Bias, Locus Of control, and Investment Decision Making" consisting of 4 sub-scales and 24 questions.

Data analysis is a process to know a hypothesis in the form of ideas suggested by the data and also as an effort to provide assistance on the hypothesis, so that it can be concluded that data analysis is the result of research of some data to compare with other data.

Data analysis method in this study using Smart Partial Least (PLS). Smart Partial Least Squares is a powerful analysis method because it is not based on many conditions, such as normality and multicollinierity tests. There are several advantages of smart PLS that data does not have to be multivariate or many variants and also the advantage of using smart PLS is that the sample does not have to be large.

There are 2 types of conceptualization that must be considered in smart PLS analysis, namely reflexive construction and formative construction. The construct stating that the covariance contained between the measurements of the model is explained by the variant that is the domain of the construct, the direction of the indicator is from the construct to the indicator is reflective, while the formative construct states each indicator defines the nature of the domain of the construct and the direction of the indicator that is from the indicator to the construct (Ghozali & Latan, 2012).

Descriptive method is a method used to describe or describe objects examined through data or samples that have been collected as is without conducting analysis and making conclusions that apply in general (Suratman, 2017). In the statistics of this study, there are several categories based on age, income, education and gender.

Common method biases (CMB) test is a problem found in the study because there can be a cause of error in measurement or when you want to test data. (Podsakoff *et al.,* 2002).

There are two sub models in smart PLS analysts namely outer model and inner model. The measurement model or outer model shows how manifest variables or observed variables show latent variables to measure. The strukural or inner model shows the estimation strength between latent variables or constructs. Analysis using smart PLS was done with the aim of assessing the outer model and inner model (Ghozali & Latan, 2012).

Outer loading can be said as outer model, which can be interpreted the value of each indicator factor against the variable. The outer loading value is also a clue to the validity of the questions contained in the questionnaire. A question where outer loading that has a result of more than 0.5 will be declared valid (Ghozali, 2011).

In smart PLS there are two types of validity, namely the validity of convergent and discriminant. The average extract variant with a value of more than 0.5 is used in part to determine the validity of convergents. So, a construct with good validity i.e. AVE is required to be more than 0.5.

The value of Cronbach's Alpha determines the reliability of each variable. A variable can be said to be reliability when cronbach's alpha value is more than 0.5 (Ghozali,2011).

The purpose of Composite Reliability test to test the reliability of a construction (Ghozali & Latan, 2012). A construct can be said to be reliable if the value of composite reliability above 0.7 (Chin, 1998 and *Hair et al.,* 2011) so that it can be concluded that each item is reliable.

The purpose of a coefficient path test is to measure the magnitude of influence between latent variables and other latent variables. How to find out a significant variable or can not be seen from the table path coefficients namely in the column T-statistics (Ghozali and Latan, 2012). It is said to be significant if the value of T-statistic is above 1.96 or the value of P-value is less than 0.05 (Hair *et al.,* 2011).

Indirect effects test or indirect influences to determine the influence between variables or the significance or not of a relationship. T-statistic with a value above 1.96 and P-value with a value less than 0.05 becomes the benchmark for viewing relationship.

One of the objectives of R square is to show the presentation of similarities or matches of independent variable models and dependent models. In addition, by doing this test can find out how much independent variables can provide information on dependent variables, the smaller the R square, the smaller the information will be obtained or limited. The value of R square between 0 to 1, so the more the value of R square close to the value of 1 then can provide the overall information to be obtained about the predictions of bound variations (Ghozali, 2012).

Analysis And Discussion

Data collection from this study was conducted by distributing questionnaires. A total of 361 questionnaires have been distributed in the city of Batam. There are 8 questionnaires that are not feasible to use so they cannot be used. Questionnaires are feasible and valid as many as 353. Table 4.1 shows the statistics of the questionnaire used.

Table 4.1 Questionnaire Statistics Used.

Description	Amount
Questionnaires distributed	361
Unworthy questionnaires	8
Questionnaire does not meet criteria	-
Questionnaires used	**353**

Source: Primary data processed (2020).

Based on the gender seen in Table 4.2, the number of men is 132 men with a percentage of 37.3% and the number of women as many as 221 people with a percentage of 62.7% which is inversely proportional to the previous research.

Table 4.2 Respondent Data By Gender.

Description	Amount	Percentage
Male	132	37,3%
Female	221	62,7%

Total	**353**	**100%**

Source: Primary data processed (2020).

In Table 4.3, respondent data based on age can be seen that respondents aged 26-33 years are fewer than respondents aged 18-25 years. Respondents aged 18-25 years as much as 281 with a percentage of 79.7% while respondents aged 26-33 years had a percentage of 20.3% with a total of 72 people.

Table 4.3 Respondent Data by Age

Description	Amount	Percentage
18-25 Tahun	281	79,7%
26-33 Tahun	72	20,3%
34-41 Tahun	0	0%
>41	0	0%
Total	**353**	**100%**

Source: Primary data processed (2020)

In Table 4.4, it can be concluded that the last level of education of respondents in high school / vocational school as many as 199 people (56.5%) compared to the Academy/University level of 154 people (43.5%).

Table 4.4 Respondent Data Based on Recent Education.

Description	Amount	Percentage
Uneducated	0	0%
Elementary School	0	0%
Junior High School	0	0%
High School/Vocational	199	56,5%
University Academy	154	43,5%
Total	**353**	**100%**

Source: Primary data processed (2020)

Based on Table 4.5, respondents who are married can be seen as many as 430 people with a percentage of 96.3% while single respondents as many as 13 people with a percentage of 3.7%.

Table 4.5 Respondent Data By Status.

Description	Amount	Percentage
Single	430	96,3%
Married	13	3,7%
Total	**353**	**100%**

Source: Primary data processed (2020)

Based on the investment experience that respondents have done as seen in Table 4.6. The number of respondents who invested for 1-5 years as many as 348 people (98.6%), while 6-10 years as many as 5 people (1.4%).

Table 4.6 Respondent Data Based on Investing Experience.

Description	Amount	Percentage
1-5 tahun	348	98,6%
6-10 tahun	5	1,4%
>10 tahun	0	0%
Total	**353**	**100%**

Source: Primary data processed (2020).

Based on monthly earnings as seen from Table 4.7. Respondents who earn less than Rp. 10,000,000 (83.3%) as many as 294 people and respondents who have an income of Rp. 10,000,001- Rp. 50,000,000 as many as 59 people (16.7%).

Table 4.7 Respondent Data Based on Income Per Month.

Description	Amount	Percentage
< Rp.10.000.000	294	83,3%
Rp. 10.000.001- Rp. 50.000.000	59	16,7%
Rp. 50.000.001- Rp.100.000.000	0	0%
> Rp.100.000.000	0	0%
Total	**353**	**100%**

Source: Primary data processed (2020).

Common method biases test is done with SPSS program. The result of variance value is 22.464% indicated that the study conducted by the author was not exposed to CMB because the result is less than 50%.

Table 4.9 Common Method Biases

Total	% of Variance	Cumulative %
5,391	22,464	22,464
3,704	15,433	37,897
2,364	9,850	47,748
2,293	9,554	57,301
1,291	5,379	62,681
1,040	4,333	67,014
0,827	3,445	70,459
0,757	3,153	73,612
0,713	2,973	76,585
0,623	2,594	79,179
0,557	2,320	81,499
0,505	2,102	83,601
0,458	1,908	85,509
0,426	1,774	87,283

0,402	1,673	88,957
0,388	1,616	90,573
0,381	1,589	92,162
0,327	1,363	93,525
0,321	1,338	94,862
0,316	1,316	96,178
0,289	1,206	97,384
0,251	1,045	98,429
0,202	0,842	99,271
0,175	0,729	100,000

Source: Primary data processed (2020).

The following are validity test results which have the purpose to know the accuracy or thoroughness of each question that will be given to respondents. Validity test results obtained by using Outer Loading and Average Variance Extracted (AVE).

Table 4.10 Outer Loadings Test Results

Variable	Loading Factor	Description
AB 1 <- Availability Bias	0,715	Valid
AB 3 <- Availability Bias	0,887	Valid
AB 5 <- Availability Bias	0,911	Valid
RB 1 <- Representative Bias	0,834	Valid
RB 2 <- Representative Bias	0,696	Valid
RB 3 <- Representative Bias	0,758	Valid
RB 4 <- Representative Bias	0,786	Valid
RB 5 <- Representative Bias	0,820	Valid
RB 6 <- Representative Bias	0,737	Valid
LC 1 <- Locus of Control	0,830	Valid
LC 2 <- Locus of Control	0,674	Valid
LC 3 <- Locus of Control	0,649	Valid
LC 4 <- Locus of Control	0,763	Valid
LC 5 <- Locus of Control	0,787	Valid
LC 6 <- Locus of Control	0,665	Valid
LC 7 <- Locus of Control	0,819	Valid
LC 8 <- Locus of Control	0,781	Valid
DM 1 <- Decision Making	0,841	Valid
DM 2 <- Decision Making	0,787	Valid
DM 4 <- Decision Making	0,694	Valid
DM 5 <- Decision Making	0,574	Valid

Availability Bias -> Locus of Control -> Decision Making	1,178	Valid
Representative Bias -> Locus of Control-> Decision Making	1,124	Valid

Source: Primary data processed (2020).

Table 4.11 Number of Questionnaire Question Items dropped

Statement	Items	Total Items Dropped	Items Dropped	Sample Mean	Remaining Items
Availability Bias	5	2	AB 2 AB 4	0,270 0,503	Valid
Representative Bias	6	0	-		Valid
Locus of Control	8	0	-		Valid
Decision Making	5	1	DM 3	0,570	Valid

Source: Primary data processed (2020).

Table 4.12 Average Variance Extracted (AVE) Test Results

Statement	*AVE*	Description
Availability Bias	0,718	Valid
Representative Bias	0,609	Valid
Locus of Control	0,558	Valid
Decision Making	0,537	Valid
Availabilty Bias -> Locus of Control -> Decision Making	1,000	Valid
Representative Bias -> Locus of Control -> Decision Making	1,000	Valid

Source: Primary data processed (2020).

Reliability tests are tested with the aim of measuring how consistently they get the desired results and relatively no change despite being tested under different circumstances. Availability bias (0.882), representative bias (0.902), locus of control (0.909), decision making (0.819).

Table 4.13 Composite Reliability

Statement	Composite Reliability	Description
Availability Bias	0,882	Reliabel
Representative Bias	0,902	Reliabel

Locus of Control	0,909	Reliabel
Decision Making	0,819	Reliabel
Availabilty Bias -> Locus of Control -> Decision Making	1,000	Reliabel
Representative Bias -> Locus of Control -> Decision Making	1,000	Reliabel

Source: Primary data processed (2020).

The test will be said to be significant if the value of the t-statistic is more than 1.96. Variable availability bias, locus of control and representative bias against decision making are said to be significantly positive with a value of 2,239 namely availability bias, 3,115 representative bias and 5,265 locus of control. Structural test result of availability bias variable with locus of control moderation in decision making get statistical value of 0.317 and representative bias variable with locus of control moderation in decision making has t-statistic value of 1.071.

Table 4.14 Path Coefficient

Path (X->Y)	Sample Mean	T Statistic	P Values	Hypothesis
Availability Bias -> Decision Making	0,139	2,239	0,026	Significant Positive
Representative Bias -> Decision Making	0,175	3,115	0,002	Significant Positive
Availability Bias x Locus of Control -> Decision Making	0,002	0,317	0,752	No Effect
Representative Bias x Locus of Control -> Decision Making	0,049	1,071	0,285	No Effect

Source: Primary data processed (2020).

Hypothesis 1

Table 4.14 is a path coeffiecient table stating that the variables of availability bias against investment decision making have a significant and positive relationship with a value of 2.239 (t-statistic >1.96=significant) with that value, supporting investors to prefer to buy shares or want to make investments by relying on the information available to them but rather conducting a complete analysis of all available and relevant information. This test is consistent with research (Rasheed *et al*., 2018), Ikram (2016), Kengatharan (2014).

Hypothesis 2

Table 4.14 of the path coefficient table states that the variable of representative bias against investment decision making has a significant and positive relationship with a value of 3.115 (t-statistic >1.96=significant) with a p-value of 0.002. Investors who make investments by entrusting past experience

to be able to make decisions in investing. Investors consider what has happened in the past recently to predict what they will get for the future, with this in mind, investors will certainly buy stocks that have recently risen. This test has similarities with the research of Irshad *et al.* (2016), Ikram (2016) and Rekik & Boujelbene (2013).

Hypothesis 3

Table 4.11 in the path coefficient table states that the locus of control variable has a statistical value of 0.317 which means less than 1.96 which means that the availability bias variable moderated by the locus of control variable against investment decision making variable has no relationship or no effect. This suggests that investors' collectivists are not influenced by their own confidence, although there is an availability of information that can make investing decisions easier. Investors rely more on investment decisions based on family decisions, traditions and norms. This research test is in line with the research of Ikram (2016) and (Rasheed *et al.,* 2018).

Hypothesis 4

Table 4.11 of the path coefficient table states that the locus of control variable has a statistical value of 1.071 (t-statistic >1.96=significant) p-value of 0.285 which means that the representative bias variable moderated by the locus of control variable against decision making has no relationship or no effect. Investors do not believe that they can control hasi with the ability or luck in making investment decisions despite having seen the experience of an investment in the past. Investors tend to follow decisions from others so they don't think that the results are acceptable because of themselves. The results of this test have similarities with the research of Ikram (2016) and (Rasheed *et al.,* 2018).

The result of the coefficient test which can be seen in table 4.12 shows the value of R2 Adjusted 0.175. This illustrates that 17.5% of investment decisions can be explained from availability bias, representative bias and locus of control. While 82.5% is found in other factors that are not included in the model.

Table 4.1 R Square Adjusted Results

Variable	R Square Adjusted	Description
Decision Making	0,175	Small

Source: Primary data processed (2020).

Conclusions, Limitations And Recommendations

The conclusions obtained from the research representative bias, availability bias, locus of control against decision making are as follows:

1. In availability bias variables show significant and positive to decision making. Availability bias that means in making investment decisions, investors rely on the information that is already available. Thus, investors always prefer what they know and know. These results are consistent with research (Rasheed *et al*., 2018), Ikram (2016), Kengatharan (2014) and Waweru *et al.* (2014).
2. The result of representative bias variables against decision making is significantly positive where the understanding of representative bias is decision making based on strereotip thinking where investors consider past experience to be the target they hope for in the future. These results are in line with research by Irshad *et al.* (2016), Ikram (2016) and Rekik and Boujelbene (2013).
3. Variable availability bias moderated locus of control against decision making shows insignificant or has no effect, which means in making decisions an investor is not influenced by their own confidence, although there is availability of information that can give investment decisions more

easily. Investors rely more on investment decisions based on decisions from family and close friends. The results of this study are consistent with previous research namely Ikram (2016) and (Rasheed *et al.,* 2018).

4. Variable representative bias moderated locus of control against decision making shows insignificant or insignificant which means that investors do not believe that they can control the results with the ability or luck in making investment decisions despite having seen the experience of an investment in the past. Investors tend to follow decisions from others so they don't think that the results are acceptable because of themselves. The results of this study are in line with the research of Ikram (2016) and (Rasheed *et al.,* 2018).

Limitations in this research, namely:

1. Respondents analyzed in this study were only 353 respondents and only in Batam City.
2. The results of the data that have been studied are uncertain can show the actual situation occurred from a small respondent.
3. The number of variables used in this study is less numerous, covering only 2 independent variables. There are other variables that can be used to determine the factors considered in stock investment decision making.

There are recommendations that researchers want to give for further research, namely:

1. Include more respondents so that the results obtained are better and more accurate.
2. Add more investment options so that it can compare with other investments.
3. Adding other variables so that it can be seen from various aspects to understand the factors that investors consider in investment decision making.

Reference

Antony, A., & Joseph, A. I. (2017). Influence of Behavioural Factors Affecting Investment Decision — An AHP Analysis, *Metamorphosis: A Journal of Management Research, 16(2),* 107-114

Anum & Beenish. (2017). Behavioral Factors and their Impact on Individual Investors' Decision Making and Investment Performance: Empirical Investigation from Pakistani Stock Market. *Global Journal of Management and Business Research: C Finance 17(1).* 60-70

Aziz & Khan. (2016). Behavioral factors influencing individual investor's investment decision and performance, Evidence from Pakistan Stock Exchange. *International Journal of Research in Finance and Marketing, (IJRFM), 6(7),* 74-86.

Badshah, W., Irshad, S., & Hakam, U. (2016). Effect of Representativeness Bias on Investment Decision Making. *Management and Administrative Sciences Review 5(1)*, 26–30.

Bakar, S., Ng, A., & Yi, C. (2016). The Impact of Psychological Factors on Investors ' Decision Making in Malaysian Stock Market : A Case of Klang Valley and Pahang. *Procedia Economics and Finance*, *35*(October 2015), 319–328.

Chaffai, M., & Medhioub, I. (2014). Behavioral Finance : An Empirical Study of the Tunisian Stock Market. *International Journal of Economics and Financial Issues 4(3),* 527–538.

Chen, G., K.A Kim, J.R Nofsinger dan O.M Rui. (2007). Trading Performance, Disposition Effect, Overconfidence, Representativeness Bias, and Experience of Emerging Market Investors. J*ournal of Behavioral Decision Making, 20,* 425–451.

Chin, W. W. (1998). The Partial Least Squares Aproach to Structural Equation Modeling. *Modern Methods for Business Research, 295,* 336

Fachrudin, K.R., Lumbanraja, P., Sadalia, I & A.N. Lubis. (2017). Analysis of Heuristic Behavior on Investment Decision. *Advances in Economics, Business and Management Research (AEBMR), 46,* 68–72.

Gitau, G. G., Kiragu, D. N., & Kamau, R. (2019). *Effect of Heuristic Factors and Real Estate Investment in Embu County , Kenya*. *8*(4), 30–38. https://doi.org/10.6007/IJARAFMS/v8-i4/5183

Grover, P., & Singh, L. K. (2015). *Study on Behavioural Factors Influencing Investment Decision in Real State : A Case Study of Udham Singh Nagar (Uttrakhand)*. *3*(7), 150–158.

Ghozali, I., dan Latan, H. (2012). *Partial Least Squeres "Konsep Metode dan Aplikasi" menggunakan program WarpPLS 2.0* Semarang : Badan Penerbit Universitas Diponegoro

Ghozali, I. (2011). *Aplikasi Analisis Multivariate Dengan Program SPSS*. Semarang: Badan Penerbit Universitas Diponegoro.

Ikram, Z. (2016). *An Empirical Investigation on Behavioral Determinantson , Impact on Investment Decision Making , Moderating Role of Locus of Control*. *26*, 44–50.

Kang, M., & Park, M. J. (2019). perspective of heuristics and biases Employees ' judgment and decision making in the banking industry The perspective of heuristics and biases. *International Journal of Bank Marketing*, *Vol. 37 No. 1*, pp. 382-400

Karamoy, H., & Tulung, J. E. (2020). The Effect of Banking Risk On Indonesian Regional Development Bank. *Banks and Bank Systems*, *15*(2), 130-137

Mojambo, G. A., Tulung, J. E., & Saerang, R. T. (2020). The Influence of Top Management Team (TMT) Characteristics Toward Indonesian Banks Financial Performance During The Digital Era (2014-2018). *JMBI UNSRAT (Jurnal Ilmiah Manajemen Bisnis dan Inovasi Universitas Sam Ratulangi).*, *7(1)*, 1-20

Podsakoff, P., MacKenzie, S., Paine, J. and Bacharach, D. (2002). Organizational citizenship behavior: a critical review of the theoritical and empirical and suggestion for future research. *Journal of Management, Vol. 26 No. 3,* pp. 513-63

Rasheed, M. H., Rafique, A., Zahid, T., & Akhtar, M. W. (2018). Factors influencing investor's decision making in Pakistan: Moderating the role of locus of control. *Review of Behavioral Finance*, *10*(1), 70–87.

Rasyid, R., Linda, M. R., Patrisia, D., & Fitra, H. (2018). *The Effect of the Locus of Control , Financial Knowledge and Income on Investment Decisions*. Advances in Economics, Business and Management Research (AEBMR), *57*(Piceeba), 258–265.

Rekik, Y. M., & Boujelbene, Y. (2013). Determinants of Individual Investor s ' Behaviors : Evidence from Tunisian Stock Market. *IOSR Journal of Business and Management, 8(2),* 109–119

Shah, A., Ahmad M., & Mahmood, F. (2018). Heuristic biases in investment decision-making and perceived market efficiency A survey at the Pakistan stock exchange. *Qualitative Research in Financial Markets, 10(1),* 85–110

Yaowen, X., & Suqing, S. (2015). Impact of Cognitive Bias on Improvised Decision-Makers' Risk Behavior: An Analysis Based on the Mediating Effect of Expected Revenue and Risk Perception. Management Science and Engineering, 9(2), 31–42.

Zaidi, F. B., & Tauni, M. Z. (2012). Influence of Investor's Personality Traits and Demographics on Overconfidence Bias. Institute of Interdisciplinary Business Research, 4(6), 730–746.

Zat, M. I. R., & Khan, U. (2015). Impact of Availability Bias and Loss Aversion Bias on Investment Decision Making , Moderating Role of Risk Perception. Journal of Research in Business Management, 1(2), 1–12.