

***BEHAVIORAL FACTORS INFLUENCING INDIVIDUAL INVESTORS  
DECISION MAKING IN THE SHARE COMPANIES INVESTMENT***

***A STUDY ON INDIVIDUAL INVESTORS AT BEDELE TOWN***

**BY**

**TSEGAYE TESHOME LETA**

**UNDER THE GUIDANCE OF**

**EMNET NEGASH (Asso. prof)**

**Mr. WONDIMU ABULE**



***A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF JIMMA  
UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD  
OF DEGREE OF MASTERS IN BUSINESS ADMINISTRATION (MBA)***

**JIMMA UNIVERSITY  
COLLEGE OF BUSINESS & ECONOMICS**

**MBA PROGRAM**

**JULY 2020**

**JIMMA, ETHIOPIA**

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## Statement of Declaration

I declare on my righteousness that, this Thesis on the Topic of Behavioral factors influencing individual investors Investment Decision making in the share market a study on individual traders at Bedele town has written by me. In the case of parts taken from scientific publications, the Internet or any other document, I have specifically and directly indicated the source at the end of the quotation as well as having properly marked them in the text by quotation marks where indicated word for word. Finally, I, the undersigned, declare that this Thesis has not submitted to any other college, institution or university other than Jimma University.

*Researcher's Name*

*Date*

*Signature*

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## Certificate

This is to verify that the thesis done by Tsegaye Teshome Leta, entitled; Behavioral factors influencing individual investors Investment Decision making in the share market a study on individual traders at Bedele town submitted to Jimma University for the award of the Degree of Master of Business Administration (MBA) under our guidance and supervision.

*Therefore, we hereby declare that no part of this thesis has submitted to any other university or institutions for the award of any degree or diploma.*

<i>Main Adviser's Name</i>	<i>Date</i>	<i>Signature</i>
<i>Co-Advisor's Name</i>	<i>Date</i>	<i>Signature</i>

## *Abstract*

*The main objective of this study was to determine behavioral factors that influence the individual investors' investment decision making in the share companies' at Bedele Town. As there are very few studies about behavioral finance in Ethiopia, this study expected to contribute significantly to the development of this field in Ethiopia. To address research problem and to accomplish research goal, the research design that used in this study was mainly Descriptive and Explanatory research design. The study conducted on the sample of 119 respondents selected by systematic sampling technique and structured questionnaires administered. To Measure the quality of data, researcher used Cronbach's alpha test and to test the hypotheses of the study, Factor analysis, KMO's, mean scores, percentages, F test, Eigen values and multiple regression analysis used. The result shows that behavioral factors influencing the investment decisions of individual investors at Bedele town are Heuristics: Representativeness, Overconfidence, Anchoring, Availability and Gambler's Fallacy. Prospect variables: Loss aversion, Regret aversion and mental accounting while Market variables are Price changes, Market information, past trends of shares, Fundamentals of underlying shares, Customer preference, over, and under reaction to price changes. In addition, herding variables Impacts of other investors' decisions, Buying and selling, choice of trading shares, Volume of trading shares and Speed of herding are influence the investment decisions of individual investors. This study also tries to find out the impact level of behavioral factors on investment decision making of individual investors. The result shows that, Representativeness, anchoring, and Gambler's Fallacy have moderate impacts on the decision making of individual investors While Overconfidence and Availability Bias have high impacts on the decision making of individual investors. Loss aversion has moderate impacts on the decision making of individual investors while Regret aversion has very low impacts and mental accounting have low impacts. Price changes, past trends of shares and Customer preference have moderate impacts on the decision making of individual investors. Market information and Fundamentals of underlying shares has high impacts on the decision making of individual investors while over and under reaction to price a change has low impacts regarding market factors. In relation with Herding effect, individual investors at Bedele town follow moderately the Impacts of other investors' decisions; they more or less tend to consider the others' behaviors of Buying, selling, choice of trading shares, Volume of trading shares and Speed of herding. Furthermore, the study tries to find out the relationships between these behavioral factors. The study revealed that, Heuristics and prospect factors are significant and have positive impacts while market and herding factors have insignificant and have positive impacts on the investment decision making of individual investors in share companies at Bedele town.*

**Keywords:** *Behavioral factors, Investment Decision, Individual Investors, Share companies at Bedele town*

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## **Abbreviations**

AACCSA	Addis Ababa Chamber of Commerce and Sectorial Association
CBE,	Commercial Bank of Ethiopia
EFA:	Exploratory Factor Analysis
EPCB	Ethiopian Private Commercial Banks
NSE	Nairobi Stock Exchange
SPSS:	Statistical Package for the Social Sciences

# CHAPTER ONE

## INTRODUCTION

This Chapter aims at introducing the Background of behavioral finance, statement of the problems, objectives of the study, significance of the study, research hypothesis and scope of the study and the research questions discussed.

### 1.1. Background of the study

Behavioral finance is the study of the result of psychology on the behavior of financial practitioners and the later outcome on markets. Behavioral Finance is of interest for the cause that it supports to clarify why and in what way market might be unproductive (Sewell 2001). According to conventional financial idea, the world and its participants are, for the most part, rational "wealth maximizes". However, there are numerous cases in point where emotion and psychology influence our decisions, affecting us to behave in unpredictable or irrational means. Behavioral finance is a relatively new field that seeks to chain behavioral and cognitive psychological theory with conventional economics and finance to deliver explanations for why people make irrational financial decisions.

Much of economic and financial theories assume that individual act rationally and would consider all available information in the investment decision-making process. Behavioral finance so has been used to throw further light on why people buy or sell stocks/shares/ and even why they do not buy stocks at all (Thaler, 2003).The focal idea of behavioral finance is in the way individuals interpret and act upon information while forming investment decisions (Shefrin, 2010). Investment as a commitment of funds for a period of time in order to develop a rate of return that will reward the investor for the time during which the funds are invested, for the projected rate of inflation during the investment horizon and for the uncertainty involved. Therefore, investment decisions usually involve cooperating on current consumption and deferring the usage of financial resources for more gains in the future (Reilly and Brown, 2006). Behavioral biases refer to the tendency of decision making that consequence in irrational financial decisions affected by faulty cognitive reasoning and/or reasoning influenced by emotions (Pompian 2012).

Singh (2010) assumed that the information structure and the characteristics of participants in the market scientifically influence decisions of individual investors and market results. Investor behavior is well defined

as how the investors judge, guess, examine and review the procedures for decision making, which contains investment psychology, information collecting, defining and understanding, research and analysis. Investors want to make taking judgments that are free from emotions. Investor behavior characterized by overexcitement and overreaction in both increasing and decreasing security markets and different factors influences their decision-making methods (Barber & Odean, 2000). Behavioral finance means investors behavior while investment in financial markets (bonds, share markets, treasury bill etc.). It explains how, why, and where the investors invest capital. This concept investigates and explains the multidisciplinary field of psychology and sociology of financial behavior (Haritha PH, Rashmi Uchilr, 2016).

The study had conducted to recognize the driven factors of individual investors' behavior and to identify the determinants of behavioral factors influencing individual investors' investment decision making. This has necessitated examining the issue further in detail to understand its impact and draw conclusions based on empirical evidence.

## **1.2. Statement of the Problem**

In recent time, most people are motivated only on short-term savings. When creating investment decisions, it is important for an investor to select the most feasible option from the numerous accessible choices. Several behavioral factors influence such choices and it was very important to bring out research on the factors that majorly influence these investment decisions (Lusardi & Mitchell, 2006). Most research in Africa, that had carried out in previous repeatedly focused on institutional investors whereas less attention has given to small scale or retail investors (Catherine Wendo, 2015). Furthermore, almost all prior studies have carried out in developed countries of America and Europe as well as some countries in Asia and Africa (such as Kenya Nairobi) where the securities market is hotter and interest of individual investors is high. It was so essential to determine the behavioral factors that affect the Individual Investors Decision making and participation in share companies in countries like Ethiopia. Some studies related with this, that have been done in Ethiopia such as, Determinants of investment behavior of Ethiopian banking employees towards selected investment avenues (Solomon Damtew, 2015).

Determinants of Behavioral Factors Influencing Individual Investors' Decisions Making in Addis Ababa at Ethiopian Private Commercial Banks (Yoseph Tadesse, 2015). Establishment of Capital Markets in Least Developed Countries (LDCs) by (Amare Walle, 2008), Challenges and prospects of establish stock market in Ethiopia by (Getachew Mulatu, 2016). However, none of the previous studies addresses the behavioral factors Influencing Individual Investors' Decisions Making in the share companies in Ethiopia. Understanding of



these problems are provide awareness on the variables that influence investment decision making and participation on share companies, and what measures can be taken in order to inspire a higher degree of savings and investment in Ethiopia.

Due to the positive correlation between share market and economy, the rise of share market will positively affect the development of the economy and vice versa. Thus, the decisions of investors on share market play an important role in defining the market trend, which then influences the economy. To understand and give some suitable explanation for the investors' decisions, it is important to explore which behavioral factors influencing the decisions of individual investors at Bedele town. In addition, how these factors influence their investment decisions. It will be useful for investors to understand common behaviors, from which justify their reactions for better returns. Security organizations may also use this information for better understanding about investors to forecast more accurately and give better recommendations.

### **1.3. General objectives of the study**

The general objective of this study was to determine behavioral factors that influence the individual investors' investment decision making in the share companies' at Bedele Town.

### **1.4. Specific objectives**

- ✓ To examine behavioral factors influencing investment decision-making of Bedele town individual investors in the share companies;
- ✓ Identifying the impact of behavioral factors influencing investors decision making in the share companies at Bedele town;
- ✓ To identify the relationship between independent and dependent variables

### **1.5. Research questions**

In line with the broad purpose statement highlighted above, the following specific research questions had formulated:

- What are the behavioral Factors (variables) influencing individual investors' investment decision making in the share companies at Bedele town?
- Are behavioral factors having influence on the individual investors' investment decision making in the share companies at Bedele town?

- At which direction of impacts do the behavioral factors influence the individual investors' investment decision making in the share companies at Bedele town?

## 1.6. Hypothesis of the Study

Le PhuocLuong and Doan Thi Thu Ha (2011) mentioned that there are four major groups in behavioral finance such as heuristic, prospect, market, and herding effect, Components of heuristics (representativeness, availability bias, anchoring, and overconfidence). Prospect theory describes some states of mind affecting an individual's decision-making processes including regret aversion, loss aversion, and mental accounting. Psychological factors have governing impact upon the decision of the investors. Overconfidence is when peoples think that they are much reliable and accurate according to their knowledge and they over estimates, that state of thinking is called the over confidence. It has much more impact on the investment decision making and performance.

Representative means when the investor follows the recent experience and forgets the previous things about taking the investment decision then it called representativeness. Investors are not investing rationally but they affected by representativeness bias (Irshad, Badshah, Hakam, 2016). Anchoring occur when the investor follow the initial value not follow the historical value of share then it called anchoring. Investor always sees the opening value of share for sailing and analyzing so in result un-expected change happened. Gambler's fallacy is the thinking of investors if something happens frequently it will not happen next time or if something is not happening currently, it can be happen is future. Therefore, gambler's fallacy affects investment decision and performance of individual investor. It rises when people predict inaccurately the reverse points, which considered as the end of good (or poor) market returns (Waweru et al., 2008).

Availability bias is People tending to base decisions on information that is readily available or easily re-callable. This results in an availability bias in that probability estimates had skewed by how easily certain potential outcomes come to mind ([www.ift.world](http://www.ift.world), 2018). Prospect theory focuses on subjective decision-making influenced by the investors' value system (Filbeck, Hatfield & Horvath, 2005). Prospect theory describes some states of mind affecting an individual's decision-making processes including Regret aversion, Loss aversion and mental accounting (Waweru et al., 2003). Regret is the emotion factor that is happens with the investor when share price is increase the investor wants to sale the share soon and when the price of the stock is decrease the investor want to hold and he have not the capacity to sale. Loss aversion refers to the difference level of mental penalty people have from a similar size loss or gain (Barberis & Huang, 2001). Mental accounting bias occurs when an individual arbitrarily classifies money based on its:

□ Source (e.g., salary, bonus, etc.), or

□ Intended use (e.g., retirement, current spending) Depending on the above overview, the hypothesis of the study was identified below.

**H1:** Heuristics variables, Prospect, Market and herding effect influence investment decision-making of individual investors in the share companies at Bedele town.

*This hypothesis tested by exploratory factor analysis to identify which dimensions the behavioral variables belongs.*

**H2:** Heuristics variables, Prospect, Market and herding effect have high-level impacts on investment decision making of individual investors in the share companies at Bedele town.

*This hypothesis tested by combining the respondents' evaluations of influence degrees of behavioral factors on investment decisions.*

**H3:** There is Negative and significant relationship between Individual investor investment decision making and heuristic variables.

**H4:** There is Negative and significant relationship between Individual investor investment decision-making and Prospect variables.

**H5:** There is Negative and significant relationship between Individual investor investment decision-making and Market variables.

**H6:** There is Negative and significant relationship between Individual investor investment decision making and herding effect.

*Hypotheses (H3 to H6) had tested by using multiple regressions.*

## **1.7. The Significance of the Study**

Behavioral finance may have the limited number of application for not developed security markets. Since the research conducted on this topic is very rare in Ethiopia, it puts the base for future research doers. The research uses as a reference of share companies investment behavior, to identify market potential area for the investors and to consider and analyze the share/stock market trend before making appropriate choices of investment. The research will provide them with a good background for their expectation of future Share-market development and giving additional reliable professional information to the investors. The study will makes significant contributions to the area of financial economics through explaining the relationship between

the several economic social, cultural, demographic and behavioral factors that influence the overall investment decisions.

### **1.8. Scope of the Study**

The study focuses on determining the behavioral factors that influence individual investors' decision-making in share companies in the Ethiopian market with the core aim of to finding out why traders of Bedele town choose to invest or not to invest in share companies. The study emphasis on the heuristics representativeness, overconfidence, anchoring, availability and gambler fallacy. Prospect (Loss aversion, regret aversion and mental accounting), Market (Price changes, Market information, Past trends of shares, Fundamentals of underlying shares, Customer preference and Over and under reaction to price changes and Herding effect (Buying, selling, choice of trading shares, Volume of trading shares and Speed of herding ). The target populations of the study were **1219** individual traders who trade different commodities in Bedele town. The statistics sampling method would chose in this study is the systematic sampling technique. The questionnaire constituted 39 items. To Measure the quality of data, researcher used Cronbach's alpha test and to test the hypotheses of the study, the researcher used the tools Factor analysis, KMO's, mean scores, percentages, F test, Eigen values, ANOVA and multiple regressions were used. The study carried out within Bedele town, between the periods of March to May 2020.

### **1.9. Limitation of the study**

Even though the sample size was high when compared to its target population, (n= 119) and satisfy the requirements of statistical methods; on the other hand, it is advised to have a larger sample size in further research to reflect more accurately the realistic situation of share market and behavioral factors influencing investment decision making. Bedele town may not represent all areas in Ethiopia. It may have difference in other areas studies because of operational culture and others. The using of only questionnaires' data gathering methods has some impacts on quality of the data. The other limitation of this research is due to absence of stock market in Ethiopia it was very difficult to obtain the address of individual investors registered in share investment, which has unlimited impact that limit the findings of this study.

### **1.10. Organization of the Thesis**

The research paper consists of five chapters. The first chapter is the introduction chapter and contains statement of the problems, research questions, objective of the study, significance of the study, and delimitation of the study. Literature reviews presented in chapter two. The third chapter was the methodology

used in the research activity. The fourth chapter covered the analysis of result and the fifth chapter includes discussion, conclusions and recommendations. In addition, other sections, namely list of references and annexes are also parts of the research.



# CHAPTER TWO

## LITERATURE REVIEW

This chapter begins with a brief discussion of Traditional finance theory and behavioral finance from the background of its evolution by reviewing in both theoretical and empirical aspects of the study. Some backgrounds of behavioral finance presented such as a comparison between traditional finance and behavioral finance as well as the important theories of Individual investment intentions and risk profile is included. The definitions of behavioral finance (heuristic, prospect, market, and herding) are included to have an overall picture of this field and its impacts on the investment decisions. Finally, an overview of share market in Ethiopia, Empirical studies, research gap and a research model with hypotheses proposed to follow during the research.

### 2.1. Traditional finance theory and behavioral finance

#### 2.1.1. Traditional finance theory

*“One of the funny things about the stock market is that every time one person buys, another sells, and equally think they are smart.” - William Feather*

Fama (1965) proposed that in an efficient financial market, rational investors can instantly and autonomously reflect the market information in order to maximize profits and no one can continuously defeat the market to earn the excess profits. The fundamental assumption of the Efficient Market Hypothesis is that investors are entirely rational and are able to price securities rationally. Simon (1982) defined the term rationality as a kind of behavior that is suitable to the success of specified goals, within the boundaries of certain conditions and limitations. Even though many traditional theories of varying complexities and explanatory power have existed and changed over the past several decades, the rationality of investors is a central assumption all and sundry. The traditional finance model follows to understand financial markets using models in which investors are “rational”. Lowenstein, et.al (2001) argued that investors consider and assess the costs and benefits of all possible alternatives and pick the alternative with the best risk-benefit trade-off. They also indicated that this pattern of investor behavior can observed in the traditional finance theories of Markowitz portfolio theory and the Capital Asset Pricing Model.

Nofsinger (2001), the field of finance has grown over the past few decades based on the assumption that people make rational decisions and that they are unbiased in their predictions about the future. Investors thought of as a rational lot that take carefully weighted economically feasible decisions every single time. The Capital Asset Pricing Model (CAPM) presupposes that all the investors are rational and have access to the same information. They also analyze the information in the same way. Thus, it is expected that all the investors should hold the same optimal risky portfolio with the same weights for each financial asset in the portfolio (Sanfey, et.al, 2003). A rational investor can be defined as a one that always, updates his beliefs in a timely and appropriate manner on receiving new information; makes choices that are normatively acceptable (Thaler, 2005). Roger (2011) stated that according to standard economic models investors' process information as indicated by Bayes' rule and the objective of their investment is to maximize their utility. It implies that investors have the ability to decide the fundamental value of securities. According to De Bondt, Mayoral & Vallelado (2013) the assumption of rationality in traditional finance has two implications: investors renew their belief in current manner and make investment decisions in line with subjective expected utility theory. Subramaniam and Velampy T (20015), explain rationality as a normative and faultless decision-making model of individuals. According to

### **2.3. Critics in contrast to Rationality**

Simon (1957) argued that in solving complex issues people face the problem of having limited capacity of processing information and traditional theories provide a misleading explanation of financial behavior of people. March and Simon (1958) argued that in the course of the investment decision making process individual investors face the problem of lack of vital information on the definition of the problem and the related criteria. According to Hindess (1998), due to lack of capacity, individuals are unable to take account of all the available information, gather comprehensive list of all possible alternative courses of action, and determine the value and probability of each of possible outcomes. Shefrin (2000) and Slovic (1972) described the investors as imperfect processors of information and they stated that investors show the tendency to commit mistakes and have perceptual problems. Behavioral economists challenge the idea of perfect and complete rationality and provided evidences for the effect of psychological and emotional factors on investment decision making.

In the later part of the 1970s and in 1980s, a large number of studies carried out to compare the actual behavior of investors with the rational behavior stated in the traditional finance. Researchers have confirmed that investors do not act in a purely rational manner and their investment decisions are influenced by various



factors such as demographic factors, psychological biases, heuristics, social affiliation, and so on (Barnea, et.al, 2010). Ahmed, et.al, (2011) observed that individual investors in Lahore Stock Exchange fail to make investment decision by considering all available information and they make irrational decisions. Rational human being is assumed by traditional economic and financial theories, but in the real world situation, it is not possible and investors exhibit irrational investment behavior due to misrepresentation in perception, interpretation of different situations and wrong judgments (Babajide and Adetiloy, 2012).

## **2.4. Behavioral Finance Theory**

The limitations of the traditional finance lead to emergence of behavioral finance (Statman, 1995). Linter (1998) described behavioral finance as a study of how people understand and react on information for making investment decisions. In general, there are two primary constituents in the behavioral finance literature. The first one is identification of anomalies in the Efficient Market Hypothesis (DeBondt and Thaler, 1985) and the second element is the detection of investor behaviors or biases that are not in agreement with the classical economic and financial theories of rational behavior (Odean, 1999).

Statman (1999) indicated that behavioral finance tries to identify and to explain the impact of cognitive errors and emotions on financial decision-making. Behavioral finance combines psychology with traditional finance theories and provides better clarifications for irrational financial decision making by investors (Shefrin, 2002). Barberis and Shleifer (2003) studied various trading anomalies such as overreaction, under-reaction, herding behavior and momentum strategies and indicated that these anomalies infringe the trading rules of the Efficient Market Hypothesis and make the models and theories of traditional finance unsuitable in relating investment risk and returns. Behavioral finance attempts to explain why and how markets might be inefficient. In short, behavioral finance advances economic understanding by incorporating the behavioral aspects of human nature into financial models and theories. It offers better understanding on the investors' behavior and actual market practices.

Barberis and Thaler (2003) mentioned that behavioral finance explains investor irrationality and the investment decision-making process because of cognitive psychology and biases related with investors' beliefs. Behavioral finance is a framework that augments some parts of standard finance and replaces other parts. It describes the behavior of investors and managers; it describes the outcomes of interactions between investors and managers in financial and capital markets; and it prescribes more behavior that is effective for investors and managers (Statman, 2008).

The behavioral finance is on the interior of the human, their emotion involvements and misguided faults having influence on the decision making of the individual investor (Loang Thi Tho, 2011). Etzioni (2014) mentioned that behavioral economics lends a hand in understanding investor behavior and intellectual capabilities as they have many cognitive biases that restrict their intellectual capabilities. From the various studies conducted in the different parts of the world, it has observed that the retail equity investors were not able to take the most out from the development and volatility of market. Behavioral factor have the effective role on the investment decision and performance of individual investor (Bilal et.al, 2016). The major reasons identified that affect the investment decisions were behavioral and emotional factors that the investment decisions of investors influenced by the behavioral biases (Lad, Tailor, 2018).

## **2.5. Empirical Study on Behavioral finance in Africa**

There were varied behaviors and financial performance of individual investors in Kenya. Some investors exhibited rational behavior in making their investment decisions. This can see in investors who decided to go for stocks from companies with good financial performance and dominant niche the stocks market. On the contrary, there were investors who were poised to realize negative results due to irrationality and herding behavior. Despite the fact that most of the investors sampled had Sufficient experiences in trading in stocks, the vast majority had not acquired the required knowledge in key to making the best investment decisions Aduda, et.al, (Kenya, 2012).

Factors like skills and knowledge of the securities market, availability of financial information and focus on recent trends in the return/ profitability came out as the major factors. Even though the herd mentality was also found to play a significant role as explained by investment decisions based on shares in high demand and friends and co-workers recommendation, reliance on professional and investment advisors expertise when making such decisions came out clearly as a significant factor Wendo (Kenya, 2015). According to Jagongo (2015), the factors Influencing Investment Decisions were reputation of the firm, firm's status in industry, expected corporate earnings, profit and condition of statement, past performance firm's stock, price per share, feeling on the economy and expected divided by investors. The stock market investment decision influenced by behavioral biases of individual stock market investors. The study established that certain-return bias, loss aversion, regret aversion and random walk framing had an effect on the decisions made by the investors on the NSE. The analysis 55 performed on the data collected appears to give an accurate view of the average equity investor in the NSE. However, it further noted that these factors have varied degrees of effect on the decisions of stock market investors in the expectation of continuous better returns. As evidenced from the

analysis, it can be established that certain-return bias has a negative relationship with stock investment decisions whereas loss aversion, regret aversion and random walk framing have a positive correlation with stock investment decisions on the NSE (Kisaka, 2015).

According to Rosemary & Bitrus (2016) fundamental factors influencing Individual Investors to Invest in Shares of Manufacturing Companies in the Nigerian Capital Market are past performance, expected bonus issue, growth potential, future dividend and the profitability of the company. The difference in individual investment decision influenced by prospect theory factors, heuristic driven bias and herding behavior, while others influence the remaining percentage factors (Juliet, 2017). In a developing country, investors with low income are more concerned the price and predictable income of a share, its riskiness and the savings they have. Investors with low income choose to invest in shares that are less risky. They invest more when they have greater savings. In addition, those investors who are investing for their own selves give a greater preference to in search of guidance from the experts (Asad, et.al, 2018). Africa is developing economy continent in the world. Africa known for its variety of emerging capitalism and participants' financial experience, thus it is an interesting place for studying behavioral finance.

## **2.6. Behavioral Finance in Ethiopia**

Capital market establishment and development could lead to the economic growth and prosperity of least developed African countries as well, including Ethiopia provided that it's backed by capable institutions of all sorts (rules, laws, constitutions; social values and norms; financial, political etc.) and domestic resources. Smaller households' savings efficiently mobilized through strengthening the formal sector (e.g. banks and microfinance institutions) and the informal financial institutions (Amare walle, 2008). According to Yoseph (2015) study on Commercial private Banks, behavioral factors influencing individual investors decision making were, Heuristic factors such as representativeness, over confidence and availability bias. Second prospect bias, loss aversion and regret aversion. Third Market factors such as past trends of stocks, market information, price changes of stocks and customer preferences. Lastly, Herd factors like buying and selling decisions of others, amount of stocks bought by others and speed of herding.

## 2.7. Definition and concepts of variables

### 2.7.1. Heuristics

Heuristics defined as the rules of thumb, which makes decision making easier, especially in complex and uncertain environments (Ritter, 2003). In Limited period Heuristic investor's investors approach is most useful (Waweru, 2008). Heuristics theory applies those investors who take the decisions in uncommon and uncertain environment and make it easy (Ritter, 2013). Heuristics theory involves representativeness, overconfidence, anchoring, gambler fallacy, availability bias (Dr. Bilal Aziz, Muhammad Abdullah Khan, 2016).

#### 2.7.1.1. Overconfidence

When people think that they are much reliable and accurate according to their knowledge and they over estimate, that state of thinking is called the over confidence. It has much more impact on the investment decision making and performance. According to Sarindr, Chowdhury (2018) People often cannot make rational judgment due to emotional factor. Even if investors are rational, they cannot own all reliable information. Therefore, it is very difficult for people to effectively conclude things they observe. Such real phenomenon completely deviates from the hypothesis of rational economic persons. This also the primary causes why decision-making behaviors of investors are often irrational and thus result in decision bias.

#### 2.7.1.2. Representativeness

Representative means when the investor follows the recent experience and forgets the previous things about taking the investment decision then it called representativeness. Investors are not investing rationally but they affected by representativeness bias (Irshad, Badshah, Hakam, 2016).

#### 2.7.1.3. Anchoring

When the investor follow the initial value not follow the historical value of share then it called anchoring. Investor always sees the opening value of share for sailing and analyzing so in result un-expected change happened.

#### 2.7.1.4. Gambler's fallacy

The thinking of investors if something happens frequently it will not happen next time or if something is not happening currently, it can be happen in future. Therefore, gambler's fallacy affects investment decision and

performance of individual investor. It rises when people predict inaccurately the reverse points, which considered as the end of good (or poor) market returns (Waweru et al., 2008). In addition, when people subject to status quo bias, they tend to select suboptimal alternative simply because it was chosen previously (Kempf and Ruenzi, 2006,). The gambler's fallacy is a belief in negative autocorrelation of a non-auto correlated random sequence (Rachel Croson, James Sundali, 2005).

### **2.7.1.5. Availability bias**

Are People tending to base decisions on information that is readily available or easily re-callable. This results in an availability bias in that probability estimates had skewed by how easily certain potential outcomes come to mind ([www.ift.world](http://www.ift.world), 2018)

## **2.7.2. Prospect theory**

Prospect theory describes some states of mind affecting an individual's decision-making processes including Regret aversion, Loss aversion and mental accounting (Waweru et al., 2003). Prospect theory focuses on subjective decision-making influenced by the investors' value system (Filbeck, Hatfield & Horvath, 2005). Prospect theory involves loss aversion, regret aversion and mental accounting (Dr. Bilal Aziz, Muhammad Abdullah khan, 2016).

### **2.7.2.1. Regret aversion**

Regret is the emotion factor that is happens with the investor when share price is increase the investor wants to sale the share soon and when the price of the stock is decrease the investor want to hold and he have not the capacity to sale. Loss in low price so called regret aversion (Lehenkari & Perttunen2004, Forgel & Berry, 2006,)

### **2.7.2.2. Loss aversion**

If investor gains profit in the investment he will be happy but if investor have in loss with similar weight he feel most distress are compare to the profit that mental penalty is called loss aversion. Loss aversion refers to the difference level of mental penalty people have from a similar size loss or gain (Barberis & Huang, 2001).

### **2.7.2.3. Mental Accounting**

Mental accounting bias occurs when an individual arbitrarily classifies money based on its:

□ Source (e.g., salary, bonus, etc.), or

□ Intended use (e.g., retirement, current spending)

### 2.7.3. Market factors

Thaler (1995) explain financial markets can affected by investors behaviors in the way of behavioral finance. If the perspectives of behavioral finance are correct, it believed that the investors might have over- or under-reaction to price changes or news; extrapolation of past trends into the future; a lack of attention to fundamentals underlying a stock; the focus on popular stocks and seasonal price cycles. Moreover, Barber and Odean (2000) emphasize that investors impacted by events in the stock market, which grab their attention, even when they do not know if these events can result good future investment performance. Researchers convince that over-reaction (or under-reaction (Lai, 2001) to news may result in different trading strategies by investors and hence influence their investment decisions. Waweru et al., (2008) conclude that market information has very high impact on making decision of investors and this makes the investors, in some way, tend to focus on popular stocks and other attention-grabbing events that are relied on the stock market information.

These market factors, in turns, influence the decision making of investors in the stock market. Waweru et al., (2008) identifies the factors of market that have impact on investors' decision-making: Price changes, market information, past trends of stocks, customer preference, over-reaction to price changes, and fundamentals of underlying stocks. Normally, changes in market information, fundamentals of the underlying stock and stock price can cause over/under-reaction to the price change. These changes empirically proved to have the high influence on decision-making behavior of investors.

### 2.7.4. Herding effect

Academic researchers also pay their attention to herding; because its impacts on stock price changes can influence the attributes of risk and return models and this has impacts on the viewpoints of asset pricing theories (Tan, et.al, 2008). In the perspective of behavior, herding can cause some emotional biases, including conformity, congruity and cognitive conflict, the home bias and gossip. Investors may prefer herding if they believe that herding can help them to extract useful and reliable information. Whereas, the performances of financial professionals, (for example, fund managers, or financial analysts) usually evaluated by subjectively periodic assessment on a relative base and the comparison to their peers. In this case, herding can contribute to the evaluation of professional performance because low-ability ones may mimic the behavior of their high-ability peers in order to develop their professional reputation (Kallinterakis, Munir & Markovic, 2010).

Herding refers to an alignment of thoughts or behaviors of individuals in a group. Most importantly, such convergence often emerges through local interactions among agents rather than some purposeful coordination by a central authority or a leading figure in the group. In other words, the apparent coordination of the herd is an emergent property of local interactions (Kameda, et.al, 2014). Herding effect in financial market identified as tendency of investors' behaviors to follow the others' actions. Practitioners usually consider carefully the existence of herding, because investors rely on collective information more than private information can result the price deviation of the securities from fundamental value; therefore, many good chances for investment at the present can be affected.

## 2.8. Overview of Share Investment in Ethiopia

A **share** is a security (which might be allotted by a joint stock company or a limited partnership joint stock company) in which a share of the capital assets is offered and which represents the rights of the shareholder. The holder of the share is neither a creditor of the company nor the owner of a part of the company's belongings. A share is an ownership security, which is a proof of ownership of an ideal part of the company's capital (Belovski, 2017). In a developing country, investors with low income are more concerned the price and predictable income of a share, its riskiness and the savings they have. Investors with low income prefer to invest in shares that are less risky. They invest more when they have greater savings (Asad, Khan and Faiz, 2018). Share market in Ethiopia had started during the Imperial regime that was elementary at that period. During that time, it was handled by the National Bank of Ethiopia, department of Share Exchange, and far along by other financial institutions and few private share sellers known under the name of "Share Dealing Group" that was involved in facilitation of transaction of Shares and other services in the share markets.

After the downfall of the Dergue government, a number of Efforts, particularly by scholars from academia, Addis Ababa Chamber of Commerce and Sectorial Association (AACCSA) and National Bank of Ethiopia (NBE) made to establish stock Market in the country. According to Mohammed (2010), Ethiopia's brief history of stock exchange revealed there were share and bond dealings under the sponsorship of the National Bank of Ethiopia (NBE) starting in March 1965. Later, the Addis Ababa Share Dealing Group was set up to trade in shares and Government bonds with share dealings of 15 registered companies and four government bonds, and the number of listed companies were 17 by 1966. Additionally, Ruecker (2011) showed National Bank of Ethiopia undertook a study on the "Feasibility of Establishing Securities Exchange Market in Ethiopia" and prepared a draft Securities and Exchange proclamation which is awaiting government endorsement. Furthermore, the Addis Ababa Chamber of Commerce and Sectorial Association (AACCSA)

had produced a research on the stock Market recommend for establishing and still awaiting approval of the government. However, know there is a market of share especially in share companies of banks, firms and other investments in Ethiopia today.

## **2.9. Empirical evidence on Behavioral factors Influencing Individual Investors investment decision making**

Simon Gervais (2009) in “Behavioral Finance; finds that the people tend to be overconfident and overly optimistic. Le PhuocLuong and Doan Thi Thu Ha (2011) mentioned that there are four major groups in behavioral finance such as heuristic, prospect, market, and herding effect, Components of heuristics(representativeness, availability bias, anchoring, and overconfidence). Prospect theory focuses on subjective decision-making influenced by the investors’ value system. Prospect theory describes some states of mind affecting an individual’s decision-making processes including regret aversion, loss aversion, and mental accounting. Psychological factors have governing impact upon the decision of the investors. These factors include overconfidence, anchoring, cognitive dissonance; regret aversion, gamblers’ fallacy, hot-hand fallacy, mental accounting, representativeness, herding, and disposition effect and hindsight bias (Islam, 2013). According to Amar Kumar Chaud hary (2013) the various causes that led to behavioral finance are anchoring, overconfidence, herd behavior, over and under reaction and loss aversions. In essence, behavioral finance approach investigates the behavioral patterns of investors and tries to understand how these patterns guide investment decision. Behavioral finance offers many useful insights for investment professionals and thus, provides a framework for evaluating active investment strategies for the investors.

The supporters of behavioral finance state that the investors’ decisions biased due to many factors (Baker & Nofsinger, 2002, 2010; Baker & Ricciardi, 2014). These factors have identified and categorized in four categories, namely psychological, social, economic and demographic. Financial markets affected by investors’ behaviors in the way of behavioral finance. If the perspectives of behavioral finance are correct, it believed that the investors might have over- or under-reaction to price changes or news; extrapolation of past trends into the future; a lack of attention to fundamentals underlying a stock; the focus on popular stocks and seasonal price cycles. Herding can cause some emotional biases, including conformity, congruity and cognitive conflict, the home bias and gossip. Behavioral pitfalls have known to influence human judgments and price determination of stock market (Haritha PH, Rashmi Uchil, 2016).According to Rosemary & Bitrus (2016) fundamental factors influencing Individual Investors to Invest in Shares of Manufacturing Companies in the Nigerian Capital Market are past performance, expected bonus issue, growth potential, future dividend



and the profitability of the company. Crowd psychology and cognitive biases are the outcomes of irrational behaviors (Anu Antony 2019).

According to Kumar & Nayak (2019), the behavioral variables of heuristic behavioral factors that impact the investment decisions of individual investors of Indian stock exchanges: Representativeness, Over Confidence, Anchoring, Gambler Fallacy and Ability Bias. In addition, all variables of the heuristic factors are contributing not equally for investors' investment decision making. Except over confidence, forecasting market price based on recent stock price of Anchoring variable and local stock purchase from ability bias shown high degree of impact on investment decision making. Behavioral finance factors (Loss Averse, Overconfidence, and Risk Perception) have significant effect on the stock investment decisions of individual investors while Herd has insignificant effect.

## **2.10. The Empirical Review on Demographic factors influencing individuals' investment decision**

Alquraan, (2016) identify that, the demographic variables (Gender, Age, Education, Income, and Experience) do not make any significant differences in the investor decision, except the demographic variable (Education) make significant differences in the investor decision. The demographic factors have a significant influence over some of the investment decision elements, while insignificant influence found on some other elements (Geetha and Ramesh, 2012). Obamuyi (2013) found out that the socio-economic characteristics of investors (age, gender, marital status and educational qualifications) are significant influencing factors in investment decisions of investors. People with different ages, income level, knowledge, gender, marital status and occupation makes different decisions (Jain & Mandot, 2012).

## **2.11. Empirical evidence on impact levels of behavioral variables on Individuals' Investment decision making**

The study conducted by Le Phuoc and Doan, (2011) revealed that, among four heuristic variables (availability bias, overconfidence, anchoring and gambler's fallacy), availability bias has high impact and among three-prospect factors mental accounting rank as the variable having the highest impact on the decision making of the investors at the Ho Chi Minh Stock Exchange. The writers more stated that market factor has the highest influences on the investment decision-making of the investors. Navaneethakrishnan, (2014) approved that Herding (volume of stocks, buying and selling and speed of herding), Heuristics (over confidence), Prospect (loss aversion and regret aversion, and Market (market information and customer preferences) have moderate

impacts on individual investors' decision making at Colombo Stock Exchange. Whereas from herding, choice of stocks has low impacts on investors' decisions and from heuristics (Anchoring) has high impacts on investors' decision. From prospect; loss aversion and regret aversion and from market information and customer preferences do not have significant influence on investment performance.

Luu Thi (2014), documented that among heuristic variables overconfidence and anchoring have moderate impact on individual investment decision and mental accounting ranks as the variable having the highest impact on the decision making of the investors followed by loss aversion and regret aversion with respective impact of moderate levels at the Ho Chi Minh Stock Exchange. Finally, he concluded that market factor has the highest influences on the investment decision of the investors. The study conducted on Ethiopian private commercial banks has identified major factors that can influence individual investor's investment decision. They are Heuristic: representativeness-overconfidence and availability bias, Prospect: loss aversion and regret aversion, Market factors: past trends of stocks, market information, price changes of stocks and customers' preferences, and Herd factors: buying and selling decision of others, amount of stocks bought by others and speed of herding. All the behavioral variables have a moderate impact on investment decision of individual investors in EPCB (Yoseph Tadesse, 2015).

## **2.12. Research Gap**

For years, traditional finance has always presumed that investors are rational in their decision making process in stock market about risk return tradeoffs and maximizing utility. Numerous studies from Asian, Middle East, western countries and very rare countries of Africa have in fact established that psychological factors do have relationships and impacts on the decision making of investors in their stock markets. Most research in Africa, that have carried out in previous repeatedly focused on institutional investors whereas less attention has given to small scale or retail investors. Furthermore, almost all prior studies have carried out in developed countries of America and Europe as well as some countries in Asia and Africa (such as Kenya Nairobi, Nigeria) where the securities market is hotter and interest of individual investors is high. It was so essential to determine the behavioral factors that affect the Individual Investors Decision making and participation in share companies in countries like Ethiopia. The only study related with this that had done in Ethiopia by Yoseph Tadesse, (2015) that, identified five major factors that can influence individual investor's investment decision in Ethiopian private commercial banks. They are Heuristic: representativeness-overconfidence and availability bias, Prospect: loss aversion and regret aversion, Market factors: past trends of stocks, market

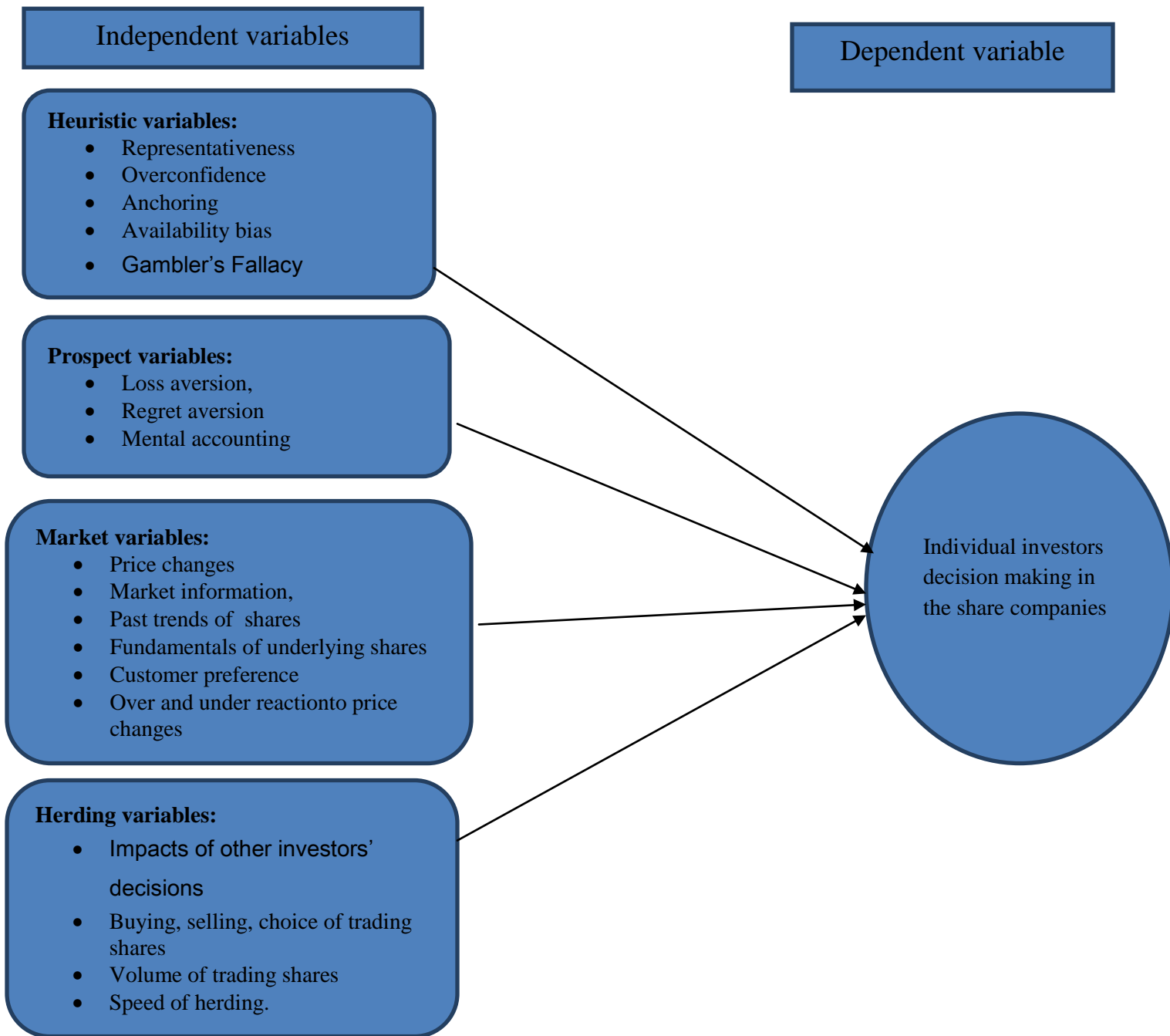
information, price changes of stocks and customers' preferences ,and Herd factors: buying and selling decision of others, amount of stocks bought by others and speed of herding.

In addition, all previous studies were focus on usage of the closed ended questionnaires data gathering technique. This will not allow participants to express their opinions and thoughts freely. Even though closed ended questionnaires' approach used in this study to allow investors to nominate factors that they consider as important to invest as well as to influence their investment behaviors and decisions, open ended approach also used and this allowed the findings to be more useful and represent the behaviors of investors toward unit expectations. Not only this, but also previous researches focus on general term of behavioral variables while this study test specifically all the sub classifications of behavioral factors. Research done in other countries may not work to other countries because of difference in culture, environment, types of investment, lack of full understanding and limited categories of factors are research gap. On the other hand, majority of the previous studies conducted on some variables but this study focus on more behavioral factors. Therefore, this research needed to narrow the above-elaborated gaps.

## **2.13. Conceptual Framework**

The proposed Conceptual framework below describes the behavioral factors' that have impacts on investment decision making of individual investors in the share companies.

Figure 2.1: The research model of behavioral factors influencing investment decision making of individual investors in the share companies at Bedele town (Source: The author)



# CHAPTER THREE

## 3. RESEARCH DESIGN AND METHODOLOGY

This section explains the research design of the study as well as the methods used to collect and analyze data. It starts with discussing the choice of research design by comparing it with other types to show why it is the most suitable one for this study and then continues with respondents' selection using random sampling technique with the aim to have a representative sample in order to generalize for the whole population. In addition, data collection methods personally administered questionnaires including close-ended and open-ended questions also discussed. Especially, this chapter shows how the analysis carried out once findings obtained by using SPSS software and statistical techniques including Descriptive Statistics, Factor Analysis, Cronbach's Alpha test, Pearson correlation and ANOVA.

### 3.1. Research Design

To address research problem and to accomplish research goal, the research design that used in this study was mainly Descriptive and Explanatory research design. Descriptive research design used when a particular phenomenon is under study, the research needed to define it, to clarify and explain its inner relationships and properties (Huczynski and Buchana, 1991). The descriptive researches portray an accurate profile of people, events or status quo (Robson, 1993). In other words, descriptive research defines the research aspects of, who, what, where, when, why and sometimes how of the research (Yin, 1994).

Quantitative approaches employed with the purpose of achieving data presentation and analysis. Both Primary and secondary data source used for this study purposes. The primary sources of data are individual traders in Bedele town. Primary data collected through the designed questionnaire, containing close and open-ended questions. On the other hand, the secondary sources of data used to gather recorded information related with this study from Governments office.

### 3.2. Population and Sampling Design

#### 3.2.1. Population

The population of the study focused on **1219** registered traders according data from Bedele town trade office. The study focus only on individual traders at Bedele town and does not included respondents from other sectors. The statistics sampling method would chose in this study is the systematic sampling technique.

### 3.2.2. Sample Size

The sample size is the number of elements or people in the sample to be studied and as provided by Mugenda and Mugenda (2003).

$$n = \frac{N}{(1 + Ne^2)}$$

Where  $e^2$  = Margin of error margin is 10%.

N – Population size

$$n = \frac{1219}{(1 + 1219 \times 0.1^2)} = 93$$

Even though 93 sample size calculated by formula, Hair, Black, Babin, Anderson and Tatham (1998) suggest that with quantitative research, at least 100 respondents should study in order to have fit the statistical methods of data analysis. Sample size for EFA is 3 to 20 times the numbers of variables and absolute ranges from 100 to over 1000 (Mund and Luke, 2009). Therefore, researcher decided to collect data from 125 respondents on the greater side of being more than the estimate. Then 125 questionnaires distributed to individual traders at Bedele town through give and pick, 119 respondents were fill and return back while six (6) questionnaires not returned from respondents at the time given. Depending on this evidence, a sample size of **119** selected from a total population (individual traders) of **1219** in Bedele town. According to Hilary, (2013) the most commonly utilized confidence levels are 95%, 90%, and 99%. This study used Margin of error 10%.

### 3.2.3. Design of the Instruments

The questionnaires designed both in English and in Oromiffa languages. The purpose of translating from English to Oromiffa language is to utilize those who cannot clearly understand English language so that was respond easily. The adjusted questionnaire contains thirty-nine questions divided into three parts. The first part covers fourteen questions relating to backgrounds of the investors. The second part covers twenty-one identified factors influencing investors' investment decisions in Bedele town, using a 5-point Likert scales ranging from strongly disagree up to strongly agree. The last part contains four open-ended questions. The researcher had wisely adjusted and modified the questionnaire to the Ethiopian context in line with the

objective of the study, after conducting a pilot test with seven Bedele town traders chamber of commerce committee and share companies mobilize. Regarding personal information nominal and ordinal measurements, and scales used for 5-point Likert scales.

#### 3.2.4. Data Collection Methods

In order to succeed the research aim, the study was implemented quantitative research approach specifically survey method through personally administered questionnaires including close-ended and open-ended questions. Self-completion questionnaire is one of the best methods of quantitative studies. Through a self-completion questionnaire, respondents' response questions by completing the questionnaire by them. This method chosen for the reason that as the research questions defined clearly, questionnaires the best choice to have standardized data, which is simply to process, and analyze. Especially, as no interviewers existing once the questionnaires are completing, the interviewers may not affect the outcomes (Bryman & Bell, 2007). Moreover, it is inexpensive than other methods. The option for this research was distributed the questionnaire to each respondent and collected right after he/she finished it. This selected because, it is not possible to get traders in one area at the same time.

#### 3.2.5. Research Procedure

The questionnaire primarily pre-tested to confirm the effectiveness of the questions while data collection carried out. The questionnaires distributed where the researcher visit respondents at their places of work, manage the questionnaire and where likely collected them within three days. This means majority of them return it in one day and the rest 2 to 3 days.

#### 3.2.6. Data Analysis Methods

Data processed and analyzed by SPSS V.20 software. The gathered data checked first. Statistical techniques, which used for the data to achieve the research objectives are: Descriptive Statistics, EFA (exploratory factor analysis) used because of it is the more popular form of factor analysis that attempts to explore the basic structure of a properly large number of variables, Cronbach's Alpha test, ANOVA and multiple regression were used.

## **CHAPTER FOUR**

### **4. DATA ANALYSIS AND PRESENTATION OF FINDINGS**

In this section, data background primarily described to have an overview of the surveyed sample. Then, the results of factor analysis, Cronbach's Alpha test for measurement reliability, impact levels of behavioral factors, as well as correlations among behavioral factors and investment decision making identified by Pearson correlation are analyzed and presented.

#### **4.1. Return rate of Questionnaires**

Even though 93-sample size calculated by formula, Hair, et.al, (1998,) suggest that with quantitative research, at least 100 respondents should study in order to have fit the statistical methods of data analysis. Therefore, researcher decided to collect data from 125 respondents on the greater side of being more than the estimate. Then 125 questionnaires distributed to individual traders at Bedele town through give and pick, 119 respondents were fill and return back while six (6) questionnaires not returned from respondents at the time given. So that the respondent rate is 95.2%, which is a high rate for a questionnaire survey and it considered as reliable and appropriate for the study. The 119 respondent's samples with the characteristics of gender, age, marital status, educational qualification, monthly income, duration in the share company, total amount of investment, and so on described as follows:

#### **4.2. Demographic back ground of the respondents**

The 119 respondents sample with the characteristics of gender, age, marital status, educational condition, monthly income; durations in the share market, total amount of investment, and rate of share buying defined below:



No	Demographic Variables	Respondents sample (n=119)	Frequency	Percent
1	Gender	Male	61	51.3
		Female	58	48.7
		<b>Total</b>	<b>119</b>	<b>100.0</b>
2	Age	18-27 years	20	16.8
		28-37 years	41	34.5
		38-47 years	34	28.6
		48-57 years	15	12.6
		Over 57 years	9	7.6
		<b>Total</b>	<b>119</b>	<b>100.0</b>
3	Marital status	Married	92	77.3
		Un married	21	17.6
		Divorced	6	5.0
		<b>Total</b>	<b>119</b>	<b>100.0</b>
4	Educational background	1-8 grade	8	6.7
		9-12 grade	33	27.7
		Diploma	34	28.6
		Degree	37	31.1
		Masters	7	5.9
		<b>Total</b>	<b>119</b>	<b>100.0</b>
5	Monthly income	Blow 1000 ETB	6	5.0
		1000-2000ETB	14	11.8
		2001-5000 ETB	40	33.6
		5001-10000 ETB	36	30.3
		10001-20000 ETB	11	9.2
		Above 20,000 ETB	12	10.1
		<b>Total</b>	<b>119</b>	<b>100.0</b>
6	Experience they have in share market	Below 1 year	4	3.4
		1-5 years	74	62.2
		6-10 years	11	9.2
		above 10 years	6	5.0
		Never	24	20.2

		<b>Total</b>	<b>119</b>	<b>100.0</b>
7	Amount of investment in Ethiopian Birr	Blow 1000ETB	6	5.0
		1001-10000 ETB	33	27.7
		10001-20000 ETB	22	18.5
		Above 20000 ETB	34	28.6
		None	24	20.2
		<b>Total</b>	<b>119</b>	<b>100.0</b>
8	Rate of share buying	High	7	5.9
		Medium	48	40.3
		Low	40	33.6
		Who has no buy	24	20.2
		<b>Total</b>	<b>119</b>	<b>100.0</b>

**Table 4.1: Demographic background of respondents (Source: Author)**

#### 4.2.1. Gender of the Respondents

From the table 4.1 above, 61 respondents were male which is accounted to 51.3 % of the total respondents whereas the remaining 48.7 % or 58 were female respondents. Both genders fairly represented in the study. This implies that respondents drawn from all gender group to clarify any gender bias that might have been related with the findings of the study.

#### 4.2.2. Age Group of the Respondent

The age distribution of the sample respondents categorized as 18-27, 28 – 37 years, 38 – 47 years, 48 – 57 years and over 57 years. Age range between 18-27 years represents 16.8%. Age range Between 28 – 37 is highly represented in the sample that was 34.5% of the sample of young group. Age ranges between 38 – 47 years is represented 28.6%, 48- 57 years represented 12.6% and above 57 years was less represented in the sample which were 7.6%. The result implies there is an investing habit among those in age range between 28 – 37 years old while the investing culture among those in ages above 57 years old of the respondents were low. Further, the study also indicates that the middle-aged populations have better investing habits than the rest aged population. This concurs with the high productive age of the population.

### **4.2.3. Marital Status of the Respondents**

Regardless of the fact that assessing the marital status, most of the respondents 77.3 %% were married compared to 17.6 % who were un married and 5 % who were divorced as shown in the table 4.1above.This indicates that married investors are more attracted to investments at Bedele town.

### **4.2.4. Educational level**

From the outcomes of the study, 6.7% of the respondents are 1-8 grade completed while 27.7% were 9-12 grades. About 28.6% held diploma qualifications, 31% were degree graduated as their highest level of education and 5.9% were masters' qualification. Since majority of the respondents were educated, this show that the adoption and investing on share companies have certain kind of relationship with the education level.

### **4.2.5. Average Monthly Income of the Respondent**

Average monthly income of the participants categorized in to six groups indicated in the table above. About five percent of the respondents fall under 1000 ETB income level, and small percentage of the sample. Twelve percent (11.8 %) fall in to 1000-2000 birr income group. About 33.6% of the sample respondents found as an average monthly income of 2001-5000 birr category and the most dominant income group in the sample. The remaining 30.3 %, 9.2% and 10% of respondents are fall under 5001-10000 birr income group, 10001-20000 birr group and over 20,000 ETB average monthly income level groups in that order. This indicate that, majority of the respondents have low income monthly. This may limit their participation to buy shares repeatedly.

### **4.2.6. Experience of respondents in the share companies**

Table 4.1 Presents that 3.4% of respondents has attended below one year. A large proportion of the samples are investors who have attended the share market for the duration of 1-5 year, which is 62.2%. Nine percent (9.2 %) of respondents have attended 6-10 years. While 5% of respondents have attended above ten year and 20.2% of respondents have not attended the share companies. This result shows that the sample reflects that most of individuals have just paid their attention to share market in the recent years.

### **4.2.7. Amount of investment respondents take part in birr**

Although the respondents cover all the ranges of investment, compared to the rest amount, the higher percentages of (28.6%) individual investors in the surveyed sample invest with ranges above 20,000 ETB.

Five percent (5 %) of respondents investing under 1000 birr, about twenty-eight percent (27.7%) investing from 1001-10000, while 18.5% investing from 10001-20,000 and 20.2% were not investing in the share companies at all. This implies as a general, majority of them invest on the shares blow range of 20,000 ETB.

#### 4.2.8. Rate of share buying

The study shows that only 5.9% of the respondents have a high frequency of buying shares. Fourteen percent (40.3%) bought moderately, almost 33.6% bought at a low frequency while 20.2% never bought. This implies buying and selling of share companies in Bedele town was not hot market.

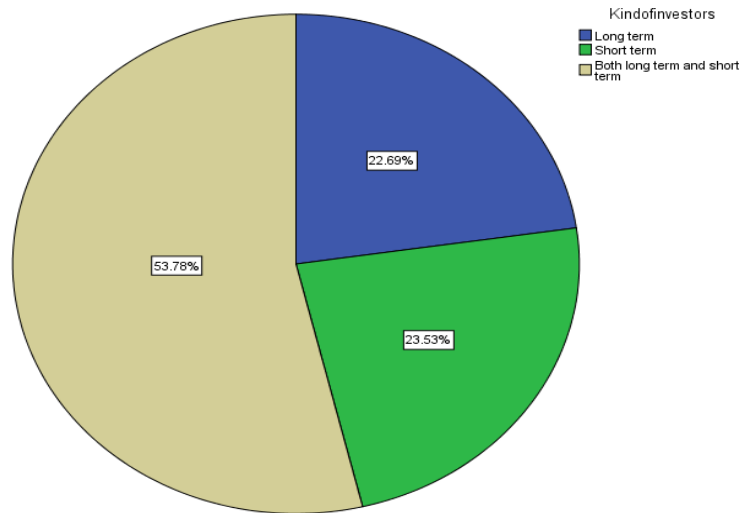
#### 4.3. Status of Investing

The findings of the study show that 79.8% were already participating in the share market. 18.5% were planning to participate while 1.7% of respondents were not preferred to participate as shown in Table 4.2 blow. This shows Majority of the sampled population was participating in share investments.

**Table 4.2: Status of investing (Source: The author)**

	<b>Frequency</b>	<b>Percent</b>
Already participating now	95	79.8
intention to participate	22	18.5
Do not intend to participate	2	1.7
<b>Total</b>	<b>119</b>	<b>100</b>

#### 4.4. Kind of Respondents



**Figure.4.1: Kind of Investor (Source: The author)**

The findings show that 22.7% were long term; 23.5% were short-term investors despite the fact that 53.8% were both short term and capital long-term investors as shown above.

#### 4.5. Comparing shares with others investment

**Table 4.3: compare share companies with others investment (Source: The author)**

	Frequency	Percent
Yes	81	68.1
No	38	31.9
<b>Total</b>	<b>119</b>	<b>100</b>

The respondents asked whether shares compared to other investments. The result shows sixty eight percent (68%) of respondents response that share can compared with other investments while 32% say it cannot compared with other works. This implies the profit earned from the share companies and investing on share companies is possible to compare with other investment alternatives.

## 4.6. Sources of Information on the share Market

Figure 4.2: Sources of Information on the share companies (Source: The author)

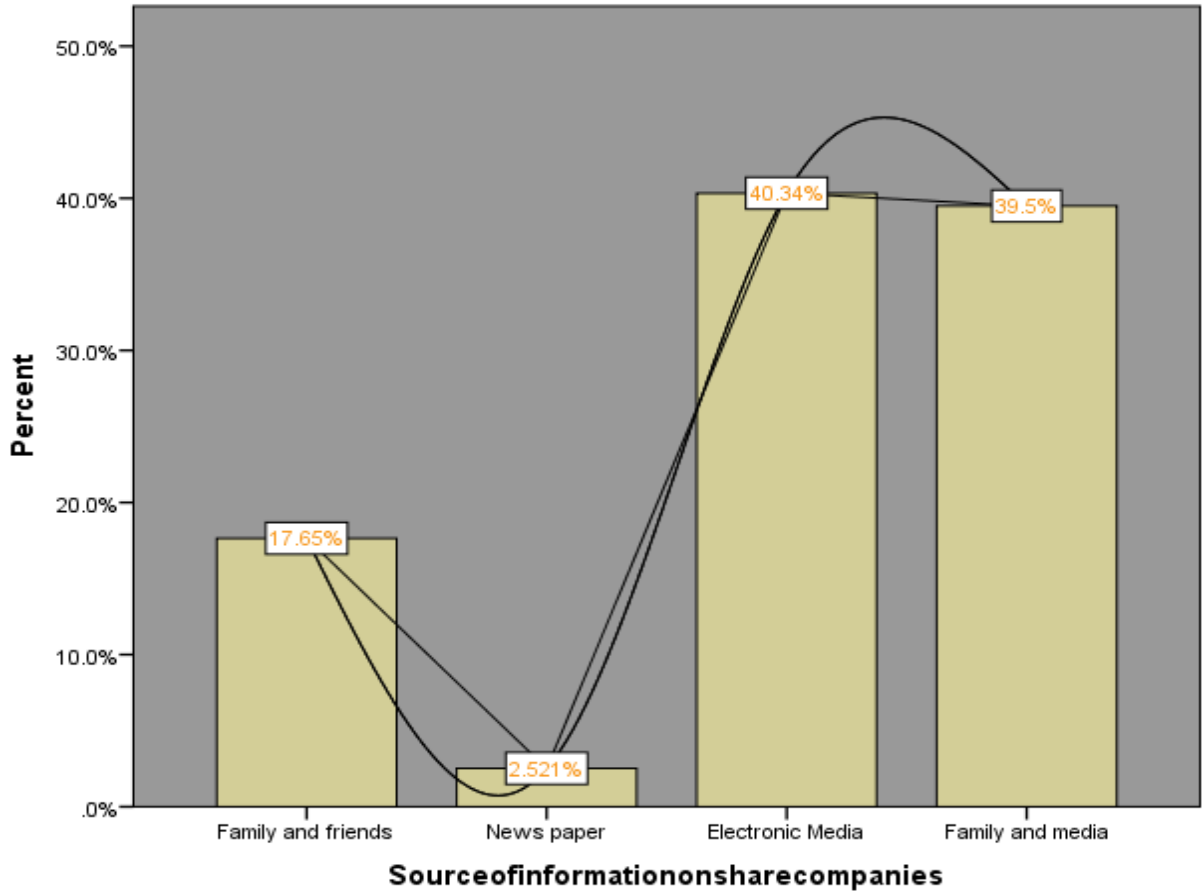


Figure 4.2 above results revealed that from the total respondents, about 17.6% depended on information from family /friends; 2.5% depended on newspapers; 40.3% got information from electronic media most popular source of information, while 39.5% get from both family and electronic media. Since majority of respondents got information from electronic media, this indicates electronics media regarding share companies market did more advertisement in the population.

#### 4.7. Distributions of share companies where the respondents register their accounts

Figure 4.3: Distributions of share companies where the respondents register their account  
(Source: The author)

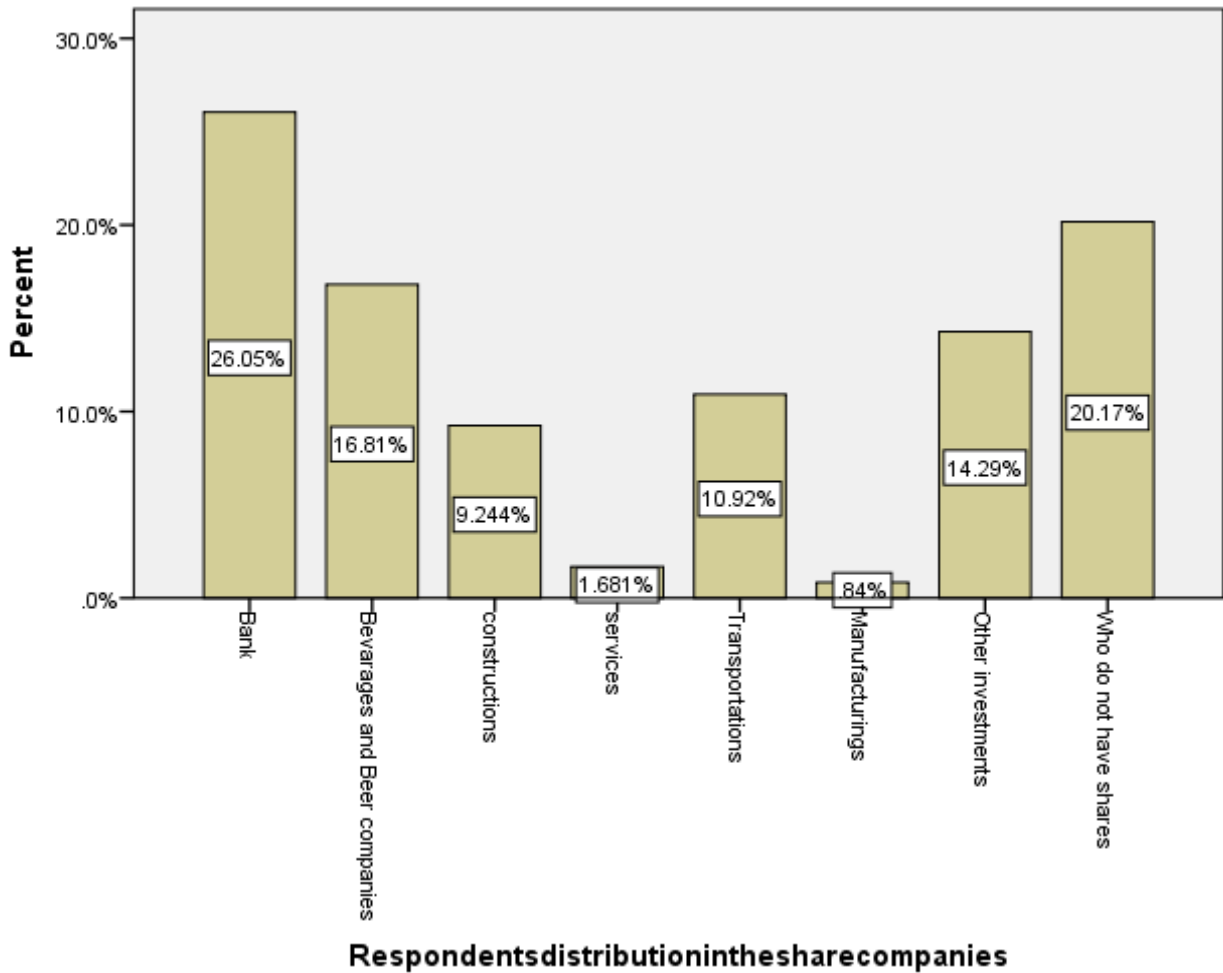


Figure 4.3 show that the largest proportion of respondents (26%) registers their accounts at Banks Share Company while 16.8% registers their accounts at Beverages and Beer Company. About 9.2% of the samples choose Constructions Company for their share buying. Two percent (1.7%) registered at Service Company, 10.9% transportation, 0.8% manufacturing which is small portion, 14.3% registered at others trade areas and 20.2% of the respondents not registered at any of the share companies. This result shows majority of the sampled population registers their accounts at Banks Share Company.

#### 4.8. Why Investing

The five reasons for investing considered in this study were; to grow capital, for saving, to increase income to increase profit. Results of the study indicate that all of the respondents invest for all alternative give on the questionnaires. This shows individual investors in Bedele town consider the growth of their capital, saving, to increase income and to increase their profit when they intend to invest.

#### 4.9. Future investment preference of respondents

	Frequency	Percent
Banking investment	30	25.2
Hotel and recreation area	22	18.5
Urban Agriculture	4	3.4
Oil center	4	3.4
Transport	9	7.6
Factory	4	3.4
Trade	27	22.7
Construction	19	16.0
<b>Total</b>	<b>119</b>	<b>100.0</b>

*Table 4.5: Future investment preference of respondents (source: The author)*

The result of the study reveals that 25.2% of the respondents intend to invest banking in the future; 18.5% want to invest hotel and recreation area. Three percent (3.4 %) prefer to invest urban agriculture while 3.4% also intend to invest on oil center. About 7.6% want to participate in the transportation, 3.4% on factory investment while 22.7% intend to invest on trade work. About 16% of respondents prefer to invest in the construction area. Since the respondents have relatively high intention to invest banking and trade investment, share companies organizers have to focus on Bank and trade investment at Bedele town.

#### 4.10. Test quality of data for behavioral variables persuading individual trader's investment decision making

Cronbach's Alpha used to test the reliability of items included in the factors, which identified in the factor analysis in this section. validity and reliability of the data by using Cronbach's alpha test before factor analysis



and then has tested hypotheses by using the tools; factor analysis, having as criteria such as factor loadings, KMO, Eigen-values, communality, factor extraction, total variance explained to test **H1**.

#### 4.11. Measurement Reliability test by Cronbach’s Alpha beforehand Factor Analysis

This study is determined by the following standards to evaluate reliability: Cronbach’s alpha have to be above 0.70 or 0.6 is acceptable value, 0.70 and above is good, greater than 0.80 is better and above 0.90 is best ([https://www.staticsolutions.com.](https://www.staticsolutions.com/)); (Griethuijsen et al; 2014); (Shelby, 2011). Therefore the study use Cronbach’s alpha above 0.7. In addition, Corrected item total correlations should to be taken if the value is 0.3 or more (Cristobal et al. 2007); (Shelby, 2011).

##### 4.11.1. The Measures of Heuristic variables

The measure of heuristic variables began with five items. All of the items have above 0.7 cronbach’s alpha and greater than 0.3 Corrected item total correlations. Therefore, there were no omitted variable under heuristic factor. The total Cronbach's alpha for heuristic variables was 0.945, which is greater than the 0.70, and fall under best categories with all the remaining variables of Corrected item total correlations is greater than 0.30 shown on the table 4.6 below.

**Table 4.6: Corrected Item-Total Correlation and Cronbach's Alpha for Heuristic factor (Source: The author)**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
HR15	15.78	11.715	.833	.949
HOC16	14.69	15.080	.843	.938
HAn17	15.15	15.079	.847	.937
HAB18	14.56	13.401	.888	.925
HGF19	15.51	12.693	.963	.911

From table above Where HR15 represents Heuristic variable Representativeness, which stated that, you follow the recent shares and avoid the previous shares that have poorly performed in the recent past. HOC16 was Heuristic variable over confidence (You believe that your knowledge and skills are sufficient to invest on

share companies). HAn17 represent Heuristic variable Anchoring (You always refer to the initial purchase price of shares when selling or analyzing and focus on recent experience to be more optimistic when the market rises and more pessimistic when the market falls). HAB18 Heuristic variable Availability bias (You prefer of investing in local companies, which you are familiar with information, are available than others) and HGF19 represents Gambler’s fallacy (You depend on previous experiences in the market for your next investment). Look at all the symbols of behavioral factors and investment decision variables in the **questionnaire appendix**.

### 4.11.2. Measure of prospect factor

**Table 10.7: Corrected Item-Total Correlation and Cronbach's Alpha for Prospect factor (Source: The author)**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PLA20	3.85	3.909	.599	.940
PRA21	5.80	3.315	.852	.737
PMA22	5.43	2.450	.856	.724

Table 10.7. Where PLA20 (Loss aversion): You ignore to sell decreasing shares and willing to sell increasing Ones. PRA21 (Regret aversion): After a prior loss, you become more risk averse. PMA22 (mental accounting): You tend to organize your portfolio into separate accounts. The variable of prospect factor corrected item total correlation was above 0.30 and total cronbach’s alpha for prospect factor is over 0.869 and it is above 0.7 for each variable.

### 4.11.3. Measure of market factor

The whole thing the variables of market factor were 0.30 corrected item-total correlations hence there is no any items omitted for cronbach's alpha test and the total cronbach's alpha was 0.964. Hence MPC23 (Market variable Price changes): You study wisely the price changes of shares that you intend to invest. MMI24 (Market variable Market information): Market information is essential for your share company investment. MPTS25 (Market variable past trends of stocks): You place the past trends of shares under your attention for your investment.

**Table 4.8: Corrected Item-Total Correlation and Cronbach's Alpha for Market factor (Source: The author)**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
MPC23	19.45	20.114	.914	.954
MMI24	18.63	21.794	.812	.965
MPTS25	19.38	20.508	.927	.954
MFUS26	19.02	19.593	.907	.955
MCP27	19.29	19.901	.948	.951
MOUR28	20.25	19.614	.831	.965

MFUS26 (Market variable Fundamentals of underlying stocks): Your decisions depend on financial information available in the market. MCP27 (Market variable Customer preference): You investigate the companies' customer preference before you invest. MOUR28 (Market variable Over-reaction and under reaction to price changes): You have the over-reaction to price changes of shares.

#### 4.11.4. Measure of herding effect

All variables of herding effect corrected -item total correlation was above 0.30 and without nothing omitted the total cronbach's alpha of herding effect was 0.985 as stated in the table 4.9 below.

**Table 4.9: Corrected Item-Total Correlation and Cronbach's Alpha for Herding factor(Source: The author)**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
HIOID29	11.02	8.271	.934	.987
HBSCTS30	11.24	7.707	.960	.981
HVTS31	11.15	8.062	.984	.974
HSH32	11.12	8.156	.971	.977

Where HIOID29 (Herding effect Impact of other investors' decisions): Other investors' decisions of choosing share types have impact on your investment decisions. HBSCTS (Herding effect buying, selling, and choice

of trading shares): Other investors' decisions of buying and selling shares have influence on your investment decisions. HVT31 (Herding effect Volume of trading shares): Other investors' decisions of the shares volume have impact on your investment decisions. HSH32 (Herding effect Speed of herding): You usually respond speedily to the changes of other investors' decisions and follow their reactions to the share market.

#### 4.11.5. Measure of Investment decision

All the variables of investment decisions were above 0.30 Corrected Item-Total Correlation hence there is no any items omitted for cronbach's alpha test and the total cronbach's alpha was 0.917, which is greater than 0.70 as shown in table 4.10 below.

**Table 4.10: Corrected Item-Total Correlation and Cronbach's Alpha for Investment decision (Source: The author)**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
IDM33	7.90	3.540	.896	.805	.828
IDM34	7.47	4.934	.818	.700	.910
IDM35	8.11	3.895	.824	.701	.889

Where ID33 (Investment Decision): The information and lack of more awareness influence your investment decision. ID34 (Investment Decision): The market situations on the market of share have impact on your investment decision. ID35 (Investment Decision): You are more risk taker for your investment decision result. Based on the above cronbach's test criteria, the reliability of study confirmed.

In summary, all the above total cronbach's alpha of the behavioral factors and investment decision variables are take-out based on the two criteria of cronbach's test: Cronbach's alpha should to be above 0.70 and corrected item total correlations have to retain if the value is 0.3 or more. Consequently, based on the above cronbach's test criteria the reliability of study is satisfied or confirmed.

#### 4.12. Factor Analysis for behavioral variables that influence investment decision making of individual investors in the share companies (H1)

The exploratory factor analysis (EFA) is used for the behavioral variables (HR15 to HSH32) and investment Decision-making (ID33 to ID35) to identify the behavioral factors. The analysis results that the remaining variables are grouped into two factors at the Eigen value = 1.367, KMO = 0.937 (sig. = 0.000), percentage of total variance explained = 88.49%, and all factors loadings are more than 0.5. A measure of sampling adequacy of (0.937) with a value of Bartlett’s test of Sphericity (5561.028) with a high significant level ( $P < 0.001$ ), indicates the suitability of factor analysis. Guttman (1954) proposed that in an EFA, all factors with Eigen values greater than 1.0. Therefore, Eigen values greater than 1.0 used in this study. Eigen values are indicators of the variance described by a factor. Once we have decided on the number of factors, we retrieve the “factor loadings”. A factor loading is a correlation coefficient and, thus, it varies between -1 and +1 (where a value closer to -1 or +1 indicates a stronger correlation). A factor loading shows how strongly a certain variable correlates with the given factor. There are no exact rules for deciding on when a loading is strong enough, but one suggested rule of thumb is below -0.5 or above 0.5. However, sometimes a variable has strong loadings for more than one factor (Robin Beaumont, 2012).

**Table 4.11 KMO and Bartlett’s test (Source: Survey Data)**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.937
Approx. Chi-Square	5561.028
Bartlett's Test of Df	210
Sphericity Sig.	.000

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) reflects the sum of partial correlations relative to the sum of correlations. It varies between 0 and 1, where a value closer to 1 is better. The Bartlett's Test of Sphericity tests the hypothesis that the correlation matrix is an identity matrix; if it were, an identity matrix then there would be no correlations between the variables (Guttman, 1954).

Table 4.12 Factor analysis for Heuristic variables (Source: The author)

Heuristic	Component	
	1	2
HR15: You follow the recent shares and avoid the previous shares that have poorly performed in the recent past.	.615	.640
HOC 16: You believe that your knowledge and skills are sufficient to invest on share companies.	.742	.504
HAn.17: You always refer to the initial purchase price of shares when selling or analyzing and focus on recent experience to be more optimistic when the market rises and more pessimistic when the market falls.	.912	.283
HAB 18: You prefer of investing in local companies which you are familiar with and information are available than others.	.838	.363

HGF19: You depend on previous experiences in the market for your next investment.	.775	.558
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As shown in the Table 4.12, all four original variables of heuristics (question from 15 to 19 that coded as HR15 to HGF19) accepted by factor analysis and belong to two dimensions. This indicates that component two can be used as the representative factor (HR15). The First component also used for Over confidence (HOC16), Anchoring (HAN17), Availability bias (HAB18), and Gamblers fallacy (HGF19) variables. Thus, heuristic grouped into two factors; Representativeness grouped under second component while over confidence, anchoring, ability bias and gamble’s fallacy grouped under first component. A factor loading of Representativeness is 0.640 while factor loadings of HOC16, HAN17, HAB18, and HGF19 variables are 0.742, 0.912, 0.838 and 0.775 respectively. The all variables correlation coefficient varies between -1 and +1 (where a value closer to -1 or +1 indicates a stronger correlation). The consequence of EFA factor analysis shown that, the behavioral variables that influence the investment decision making of individual investors in the share companies at Bedele town are; Representativeness, Overconfidence, Anchoring, Availability and Gambler’s Fallacy belongs to heuristic. Therefore, the finding revealed that Heuristic variables influence the investment decision making of individual investors in the share companies at Bedele town.

**Table 4.13 Factor analysis for Prospect variables (Source: The author)**

Prospect	Component	
	1	2
PLA 20: You ignore to sell decreasing shares and willing to sell increasing ones.	.900	.361
PRA 21: After a prior loss, you become more risk averse.	.246	.922
PMA22: You tend to organize your portfolio into separate accounts.	.288	.936

Table 4.13 show that, the three variables of Prospect (question from 20 to 22 that coded as PLA20 to

PMA22) accepted by factor analysis and belong to two dimensions. This indicates that component one can use as the Loss aversion factor (PLA 20). The Second component also used for Regret aversion (PRA 21) and mental accounting (PMA22) variables. A factor loading of PLA 20 is 0.900 and factor loadings of PRA 21 and PMA22 variables are 0.922, and 0.936 respectively. The all variables correlation coefficient indicates a stronger correlation. The consequence of EFA factor analysis shown that, the behavioral variables that influence the investment decision making of individual investors in the share companies at Bedele town are; Loss aversion, Regret aversion and mental accounting belongs to Prospect. Therefore, the finding shows that Prospect variables influence the investment decision making of individual investors in the share companies at Bedele town.

**Table 4.14: Factor analysis for Market variables(Source: The author)**

Market variable	Component	
	1	2
M PC23: You study wisely the price changes of shares that you intend to invest in.	.913	.295
MMI24: Market information is essential for your share company investment.	.829	.278
MPTS25: You place the past trends of shares under your attention for your investment.	.867	.394
MFUS26: Your decisions depend on financial information available in the market.	.807	.479
MCP27: You investigate the companies' customer preference before you invest.	.826	.471



MOUR28: You have the over-reaction to price changes of shares.	.561	.790
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As shown in the Table 4.14, all four original variables of market (question from 23 to 28 that coded as MPC23 to MOUR28) accepted by factor analysis and belong to two dimensions. This indicates that component one includes the Price changes (MPC23), Market information (MMI24), past trends of shares (MPTS25), Fundamentals of underlying shares (MFUS26), and Customer preference (MCP27) while over and under reaction to price changes (MOUR28) categorized under second component. A factor loading of Price changes was 0.913 while factor loadings of Market information, past trends of shares, Fundamentals of underlying shares, Customer preference, over, and under reaction to price changes variables are 0.829, 0.867, 0.807, 0.826 and 0.790 respectively. The all variables correlation coefficient varies between -1 and +1 (where a value closer to -1 or +1 indicates a stronger correlation). The consequence of EFA factor analysis shown that, the Market variables that influence the investment decision making of individual investors in the share companies at Bedele town are; Price changes, Market information, past trends of shares, Fundamentals of underlying shares, Customer preference and over and under reaction to price changes. Therefore, the finding revealed that Market variables influence the investment decision making of individual investors in the share companies at Bedele town.

**Table 4.15: Factor analysis for herding effect (Source: The author)**

Herding effect	Component	
	1	2
HIOID29: Other investors' decisions of choosing share types have impact on your investment decisions.	.839	.472
HBSCTS30: Other investors' decisions of buying and selling shares have influence on your investment decisions.	.889	.370

HVTS31: Other investors' decisions of the shares volume have impact on your investment decisions.	.912	.340
HSH32: You usually respond speedily to the changes of other investors' decisions and follow their reactions to the share market.	.926	.298

As shown in the Table 4.15, all four original variables of herding (question from 29 to 32 that, coded as HIOID29 to HSH32) accepted by factor analysis and belong to one dimension. This indicates that component all variables of herding effect the Impacts of other investors' decisions (HIOID29), Buying, selling, choice of trading shares (HBSCTS30), Volume of trading shares (HVTS31) and Speed of herding (HSH32) grouped only under first component. A factor loading of HIOID29, HBSCTS30, HVTS31, and HSH32 variables are 0.839, 0.889, 0.912 and 0.926 respectively. This indicates all variables correlation coefficient varies between -1 and +1 (where a value closer to -1 or +1 indicates a stronger correlation). The consequence of EFA factor analysis shown that, the Herding variables that influence the investment decision making of individual investors in the share companies at Bedele town are; Impacts of other investors' decisions, Buying, selling, choice of trading shares, Volume of trading shares and Speed of herding. Therefore, the finding revealed that Herding variables influence the investment decision making of individual investors in the share companies at Bedele town.

**Table 4.16: Factor analysis for Investment decision variables (Source: The author)**

Investment decision	Component	
	1	2
ID 33: The information and lack of more awareness influence your investment decision.	.822	.488
ID 34: The market situations on the market of share have impact on your investment decision.	.777	.450

ID 35: You fear out comes of risk to make investment decision.	.738	.438
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Table 4.16 show that Investment decision variables of (question from 33 to 35 that coded as ID33 to ID35) accepted by factor analysis and belongs to one dimension. A factor loading of ID33, ID34, and ID35 variables are 0.822, 0.777 and 0.738 respectively.

As a summary, the all tables 4:12 to 4:16 above show the Rotated Component Matrix factor loading for each variable and for each of factors separately. Principal Component Analysis is dimension reduction tool used in this analysis to reduce a large set of variables to a small set that still contains most of information in the large set. The study revealed that all behavioral factors (question from 15 to 32 that coded as HR15 to HSH32) accepted by factor analysis and belong to two dimensions. The consequence of EFA factor analysis shown that, the behavioral variables that influence the investment decision making of individual investors in the share companies at Bedele town are; Representativeness, Overconfidence, Anchoring, Availability and Gambler’s Fallacy belongs to heuristic, Loss aversion, Regret aversion and Mental accounting belongs to prospect. Price changes, Market information, Past trends of shares, Fundamentals of underlying shares, Customer preference and Over and under reaction to price changes belongs to Market variables and Impacts of other investors’ decisions, Buying, selling, choice of trading shares, Volume of trading shares and Speed of herding belongs to Herding variables.

From the finding, all of the behavioral variables that shown in this study influence the investment decision making of individual investors in the share companies at Bedele town confirmed. This finding has just confirm the previous study which reveal that, the major factors influence individual investor’s investment decision in Ethiopian private commercial banks are: Heuristic ( representativeness, over confidence and availability bias), Prospect (loss aversion and regret aversion). Market factors (past trends of stocks, market information, price changes of stocks and customers' preferences), and Herd factors (buying and selling decision of others, amount of stocks bought by others and speed of herding) (Yoseph Tadesse, 2015, p.56). ***As a result, H1 supported.***

### 4.13. Measurement Reliability test using Cronbach's Alpha following Factor analysis

In this part, the results of reliability analysis confirmed that consistency is at an acceptable level for each factor. Cronbach's Alpha used to test the reliability of items included in the factors, which identified in the factor analysis. This test done to make sure that the measurements are reliable for further uses. The results of Cronbach's alpha test are above 0.7 that demonstrates reliability shown in the Table 4.17 blow.

**Table 4.17: Cronbach's Alpha Test for items of factors (Source: The author)**

No	Factor	Variables	Cronbach's Alpha	Corrected Item total Correlation	Cronbach's alpha if Item deleted	F (sig.)
1	Heuristic	HR 15	.945	.833	.949	140.412 (.000)
		HOC 16		.843	.938	
		HAn. 17		.847	.937	
		HAB 18		.888	.925	
		HGF 19		.963	.911	
2	Prospect	PLA 20	.869	.599	.940	429.324 (.000)
		PRA 21		.852	.737	
		PMA 22		.856	.724	

3	Market	MPC 23	.964	.914	.954	201.092 (.000)
		MMI 24		.812	.965	
		MPTS 25		.927	.954	
		MFUS 26		.907	.955	
		MCP 27		.948	.951	
		MOUR 28		.831	.965	
4	Herding	HIOID 29	.985	.934	.987	18.030 (.000)
		HBSCTS 30		.960	.981	
		HVTS 31		.984	.974	
		HSB 32		.971	.977	
5	Investment Decision	ID 33	.917	.896	.828	51.414 (.000)
		ID 33		.818	.910	
		ID 34		.824	.889	

Table 4.17 presents that Cronbach's Alpha indexes of all factors are greater 0.7 and the corrected item-total correlation of all items are more than 0.30. Besides, Cronbach's alpha of each factor if it's any item is deleted

is less than the factor's Cronbach's Alpha, as well as the significant of F test for all factor, a kind of test to make sure the appropriateness of using Cronbach's Alpha technique for the data (Sig < 0.10). These indexes show that items included in the factors: Heuristic, Prospect, Market, Herding variables and Investment Performance are reliable enough to follow further analysis. The more details of Cronbach's alpha for all these items done by SPSS shown in **Appendix 4.1**.

#### **4.14. Impact Levels of behavioral factors on Individual Investment Decision making**

The impact levels of behavioral variables on the investment decisions identified by computing the values of sample mean of all variables. Alike, the variables of investment performance scored by identifying the mean values of the respondents' evaluations for each variable. Using the models used to determine the impact levels of behavioral variables on individuals' investment decision used by other researchers such as *Le Phuoc and Doan (2011)*, Navaneethakrishnan ,(2014) Yoseph Tadese (2015), Yathish Kumar and Radhakrishna Nayak (2019).The impact levels of behavioral variables on the investment decisions identified by calculating the values of sample mean of each variable. In this part, only variables, which meet the requirements of above factor analysis and Cronbach's alpha test chosen to demonstrate the score. Because 5-point scales used to measure the impact levels of these variables, the mean values of these variables can decide their impact levels on the investment decision making as the following rules:

- ❖ Mean values are less than 2 shows that the variables have very low impacts
- ❖ Mean values are from 2 to 3 shows that the variables have low impacts
- ❖ Mean values are from 3 to 4 shows that the variables have moderate impacts
- ❖ Mean values are from 4 to 5 shows that the variables have high impacts
- ❖ Mean values are more 5 shows that the variables have very high impacts

(Source: *Le Phuoc and Doan (2011)*)

##### **4.14.1. Impacts level of Heuristic Variables on the investment decision making**

The heuristic variables are grouped into Representativeness, Overconfidence, Anchoring, Availability bias and Gambler's Fallacy. The impacts of these factors shown in the following table:

Table 4.18: Impacts of Heuristic Variables on the investment decision-making (Source: The author)

Factors	Variables	Mean	Std. Deviation	N
Representativeness	HR15: You follow the recent shares and avoid the previous shares that have poorly performed in the recent past.	3.14	1.317	119
Overconfidence	HOC 16: You believe that your knowledge and skills are sufficient to invest on share companies.	4.24	.799	119
Anchoring	HAn.17: You always refer to the initial purchase price of shares when selling or analyzing and focus on recent experience to be more optimistic when the market rises and more pessimistic when the market falls.	3.77	.797	119
Availability Bias	HAB 18: You prefer of investing in local companies which you are familiar with and information are available than others.	4.36	1.006	119
Gamblers Fallacy	HGF19: You depend on previous experiences in the market for your next investment.	3.41	1.045	119

As in the literature review chapter, behavioral variables of heuristic aspect that impact the investment decisions consist of representativeness, overconfidence, anchoring, gambler’s fallacy, and ability bias. In this research, all variables are reliable enough considered as the behavioral variables influencing on the decisions of individual investors at Bedele town. The variables of Representativeness (HR15), anchoring (HAn.17), and Gambler’s Fallacy (HGF19) have moderate impacts on the decision making of individual investors with mean values of 3.14, 3.77 and 3.41 respectively, While Overconfidence (HOC16) and Availability Bias (HAB18) have high impacts on the decision making of individual investors with mean values of 4.24 and 4.36 respectively. This means individual investors at the Bedele town extremely tend to believe that their knowledge and skills are sufficient to invest on share companies as well as they prefer of investing in local companies which they are familiar with and information are available than others.

In other ways, the investors follow the recent shares and avoid the previous shares that have poorly performed in the recent past in moderate way. They always refer to the initial purchase price of shares when selling or

analyzing and focus on recent experience to be more optimistic when the market rises and more pessimistic when the market falls and depend on previous experiences in the market for their next investment in medium ways. The findings somehow oppose the study of *Yoseph Tadesse (2015.p.58-59)* that revealed variables of representativeness, overconfidence and availability bias have moderate impacts on the decision-making of individual investors and among the heuristic variables.

#### 4.14.2. The impacts level of the Prospect Variables on the investment decision-making

**Table 4.19: Impacts of Prospect Variables on the investment decision-making**

	Mean	Std. Deviation	N
PLA 20: You ignore to sell decreasing shares and willing to sell increasing ones.	3.689	.8901	119
PRA 21: After a prior loss, you become more risk averse.	1.739	.8778	119
PMA22: You tend to organize your portfolio into separate accounts.	2.109	1.1408	119

Regarding of Prospect, Loss aversion (PLA20) has moderate impacts on the decision making of individual investors with mean values of 3.69. Regret aversion (PRA 21) have very low impacts with the mean of 1.739 while mental accounting (PMA22) have low impacts with the mean of 2.1. The result shows that, respondents ignore to sell decreasing shares and willing to sell increasing ones at moderate degree. However, after a prior loss, they become more risk averse at very low degree and the investors have a low tendency of treating each element of their investment portfolio separately. But this study oppose the findings of *Le Phuoc (2011)* which revealed that, the investors have a high tendency of treating each element of their investment portfolio separately at the Ho Chi Minh Stock Exchange. In other ways, the above result somewhat confirms the studies of *Navaneethakrishnan K,(2014)*, Loss aversion and regret aversion are the variables of prospect factor those have a moderate impact on investment decision making. *E.Vijaya, (2014,)* also found that the variables of Loss Aversion have moderate impact on individual investment decisions.



### 4.14.3. Impacts of Market Variables on the investment decision making

**Table 4.20: Impacts of Market Variables on the investment decision-making (Source: The author)**

Factor	Variables	Mean	Std. Deviation	N
Price changes,	MPC23: You study wisely the price changes of shares that you intend to invest in.	3.76	.965	119
Market information	MMI24: Market information is essential for your share company investment.	4.57	.849	119
Past trends of shares	MPTS25: You place the past trends of shares under your attention for your investment.	3.82	.908	119
Fundamentals of underlying shares	MFUS26: Your decisions depend on financial information available in the market.	4.18	1.033	119
Customer preference	MCP27: You investigate the companies' customer preference before you invest.	3.92	.962	119
Over and under reaction to price changes	MOUR28: You have the over-reaction to price changes of shares.	2.95	1.104	119

Table 4.20 Show variables of Price changes (MPC23); Past trends of shares (MPTS25) and Customer preference (MCP27) have moderate impacts on the decision making of individual investors with mean values of 3.76, 3.82 and 3.92 respectively. Market information (MMI24) and Fundamentals of underlying shares (MFUS26) has high impacts on the decision making of individual investors with mean values of 4.57 and 4.18 respectively. Over and under reaction to price a change (MOUR28) has low impacts with the mean of 2.95. This means the individuals Market information is essential for their share company investment that their decisions depend on financial information available in the market. This result was similar with the study conducted by Le Phuoc and Doan (2011) which revealed that, market factors highly influence the investment decision making of individual investors due to the means of changes of stock price, market information and past trends of stocks.

#### 4.14.4. Impacts of Herding Variables on the investment decision making

**Table 4.21: Impacts of Herding Variables on the investment decision-making (Source: The author)**

Factor	Variables	Mean	Std. Deviation	N
Impacts of other investors' decisions	HIOID29: Other investors' decisions of choosing share types have impact on your investment decisions.	3.82	.945	119
Buying, selling, choice of trading shares	HBSCTS30: Other investors' decisions of buying and selling shares have influence on your investment decisions	3.61	1.027	119
Volume of trading shares	HVTS31: Other investors' decisions of the shares volume have impact on your investment decisions.	3.69	.946	119
Speed of herding	HSH32: You usually respond speedily to the changes of other investors' decisions and follow their reactions to the share market.	3.72	.938	119

As Table 4.21, individual investors at Bedele town follow moderately the Impacts of other investors' decisions (HIOID29) with the mean of 3.82. They more or less tend to consider the others' behaviors of Buying, selling, choice of trading shares (HBSCTS30) with the mean of 3.61 and Volume of trading shares (HVTS31) with the mean of 3.69 as well as Speed of herding (HSH32) with the mean of 3.72. This findings confirms the study of (Yoseph Tadese 2015, p.62), individual investors at the Ethiopian Private Commercial Banks in Addis Ababa follow moderately the other investors' trading decisions.

As a summary, most of the behavioral components of Heuristic, market, Herding and prospect variable (PLA20) have moderate impacts on individual investors' decision-making at Bedele town. However, Variable

of Heuristic (HOC16), (HAB18) and variables of Market (MMI24) and (MFUS26) have high influences on the investment decision making. The variables of prospect loss aversion (PLA22) and Market over and under reaction (MOUR28) have low influences on the investment decision making while variables of prospect regret aversion (PRA21) have very low impacts. Researcher conclude that from this findings, Some variables have high impacts on individual investors’ decision making, a few variable has low impacts, one variables of prospect have very low impacts and most of the variables have moderate impacts on individual investors’ decision making at Bedele town. The findings of impact levels of behavioral variables on investment decisions above confirms the study of Yoseph Tadesse (2015), E.Vijaya (2014) and Le Phuoc Doan (2011) majority of behavioral variables of heuristic, prospect, market and herding effect have moderate impacts on individual investors’ decision making. Therefore, the findings of this study *do not support the Hypothesis H2* that intends all behavioral variables have high-level impacts on investment decision making of individual investors in the share companies at Bedele town.

#### 4.14.5. Impacts of Investment decision

**Table 4.22: Investment Decision (Source: The author)**

Factor	Variables	Mean	Std. Deviation	N
Investment Decision	ID 33: The information and lack of more awareness influence your investment decision.	3.84	1.179	119
	ID 34: The market situations on the market of share have impact on your investment decision.	4.27	.880	119
	ID 35: You are more risk taker for your investment decision result.	3.63	1.140	119

The results from the evaluation of the investment decision indicate that investors at the Bedele town are influenced by the information and lack of more awareness; The market situations on the market of share companies investment and fearing the outcomes of risk to make investment decision with a mean of (ID33, mean 3.84, ID34, mean 4.27, ID35:, mean 3.63) respectively. Among the variables of investment decision, the market situations on the market of share have high impact at Bedele town. The findings of impact of investment decisions above confirms the study of Yoseph Tadesse (2015), the investment decision indicate that the investors at the Ethiopian Private Commercial Banks are influenced by information structure of the bank; their risk profile and market factors during the last year at a moderate impact.

## 4.15. Regression Analyses of Hypotheses (H3-H6)

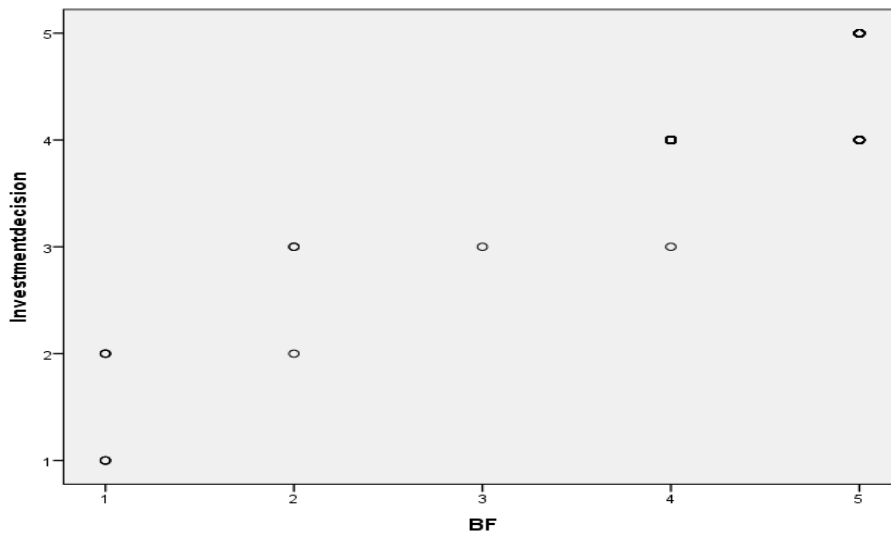
### 4.15.1. Diagnostics of Assumptions in Regression

Before conducting a regression analysis, the basic assumptions concerning the original data must be made. This is a mandatory prerequisite in explaining the relationships between dependent and explanatory variables. Major assumptions have to be checked and proved to meet reasonably well. In this study, these important least square assumptions are checked and explained as follows.

#### 1. Linearity

To test the linearity of associations, a scatter plot diagram with a line of fit can be used to see if the allocation can be represented by a linear relationship.

**Figure 4.4: Scatter plot with fit line**

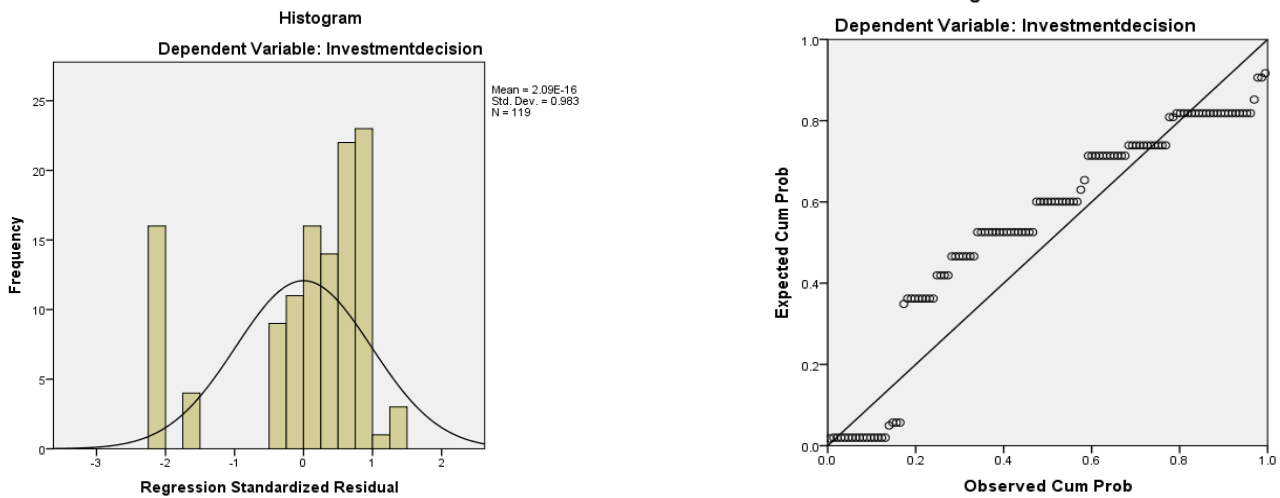


As shown in Figure 4.4, all the four relationships between dependent and independent variables (Investment decision with Heuristic, prospect, Market, and Herding effect) fit reasonably with a linear pattern and it holds that the linearity assumption has been met.

#### 2. Normality

Multiple regressions assume that variables have normal distributions (Darlington, 1968). This assumption is tested by looking at the P-P plot for the model together with a histogram of the standardized residuals. The closer the dots lie to the diagonal line, the closer to normal the residuals are distributed.

**Figure 4.5: histogram and p-p plot of standardized**

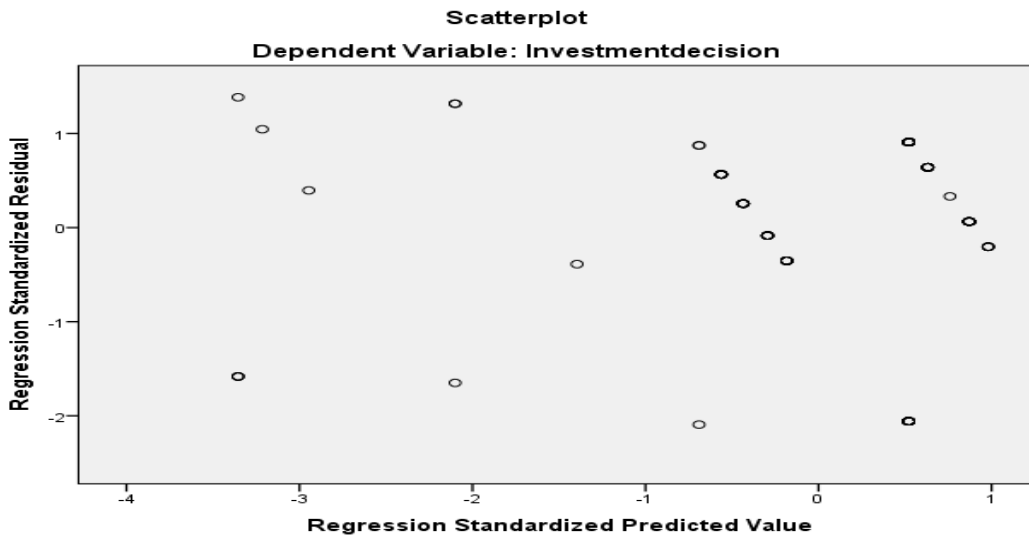


The histogram in Figure 4.5 looks normal and in the P-P plots, the dots are reasonably closer to the normal line. The combinations of both inspections support that the residuals are normally distribute.

### 3. Homoscedasticity test

Homoscedasity assumptions require even distribution of residual terms throughout the data. Homoscedasticity checked by visual examination of a plot of the standardized residuals by the regression standardized predicted value (Osborn & Waters, 2002). Figure 4.6 below shows that the standardized residuals in this research are distributed indicating Hetro scedasticity is not a serious problem for this data.

**Figure 4.6: Homoscedasticity**



#### 4. Multicollinearity test

Tolerance statistics in regression analysis helps to detect collinearity problem. Tolerance value runs from 0 to 1 and values closer to 1 indicates no multicollinearity problem (Keith, 2006). In this study all, the tolerances are above 0. 1 and VIF was blow 10. Therefore, other predictors do not explain the amount of variation in that construct. All the tests indicated that there are no multicollinearity problems.

**Table 4.23: Multicollinearity test**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	.649	.173		3.750	.000	.306	.992		
Heuristic	.575	.071	.657	8.054	.000	.433	.716	.187	5.356
Prospect	.090	.039	.117	2.316	.022	.013	.167	.487	2.053
Market	.115	.081	.111	1.410	.161	-.046	.276	.202	4.955
Herding effect	.104	.074	.112	1.405	.163	-.043	.251	.196	5.098

a. Dependent Variable: Investment decision

#### 4.16. Regression Analyses Results

Multiple regressions had used to test the research hypotheses. Since there was more than one independent variable in this study, multiple linear regression models used to check correlation between independent and dependent variables. Multiple regressions are a powerful set of methods for investigative specific scientific hypotheses and relationships among non-experimental data.

**Table 4.24: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.926 <sup>a</sup>	.858	.853	.337	.858	172.633	4	114	.000

a. Predictors: (Constant), P, M, H, Hef

**Table 4.25: ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	78.445	4	19.611	172.633	.000 <sup>b</sup>
1 Residual	12.950	114	.114		
1 Total	91.395	118			

a. Dependent IDM

b. Predictors: (Constant), P, M, H, Hef

**Table 4.26: Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error				Beta	Lower Bound
(Constant)	.649	.173		3.750	.000	.306	.992
1 Heuristics	.575	.071	.657	8.054	.000	.433	.716
Market	.115	.081	.111	1.410	.161	-.046	.276
Herding effect	.104	.074	.112	1.405	.163	-.043	.251
Prospect	.090	.039	.117	2.316	.022	.013	.167

a. Dependent Variable: IDM

The results of regression analysis show that the Adjusted R<sup>2</sup> is 0.853 implies that Heuristic variable, Prospect factor, Market factors and Herding effect explain 85.8% of the variations in the investment decision making of individual investors in the share company at Bedele town. The proposed regression model fitted the data well as it was statistically significant at F<sub>(4, 114)</sub> is 292.970 and calculated probability is 0.001 (F<sub>(4, 114)</sub> = 172.633, p<0.05).

***H3: There is Negative and significant relationship between Individual investor investment decision making and heuristic variables.***

As indicated on the above table, the regression of Heuristic investigated in this study has ( $\beta = 0.575$ ,  $t = 8.054$ ,  $p < 0.05$ ), thus, Heuristic had positive and significant relationship with individual investment decision making in Bedele town. The result shows that, heuristic had significant and affect the share company’s investment decisions of individual investors in Bedele town. This results supported by many previous studies that found that heuristics has a positive significant effect on investment decision among them, Irshad, et. al, (2016) and Yoseph Tadesse, (2015). ***Thus, H3 not supported.***



***H4: There is Negative and significant relationship between Individual investor investment decision-making and Prospect variables***

The regression result of prospect investigated in this study, prospect has ( $\beta = 0.090$ ,  $t = 2.316$ ,  $p < 0.05$ ), thus, prospect had positive and significant relationship with individual investment decision making in Bedele town. The result shows that, prospect had significant and affect the share company's investment decisions of individual investors in Bedele town. This result partially confirms the studies of Yoseph Tadesse, (2015) that the prospect variables have positive and insignificant relationship to investment decision at Ethiopian Private Commercial Banks. ***Thus, H4 not supported.***

***H5: There is Negative and significant relationship between Individual investor investment decision-making and market variables***

The regression result of market factors investigated in this study, market factor had ( $\beta = 0.115$ ,  $t = 1.410$ ,  $p > 0.05$ ), thus, market factor had positive and insignificant relationship with individual investment decision making in Bedele town. The result shows that, market had insignificant and affect the share company's investment decisions of individual investors in Bedele town. ***Thus, H5 not supported.***

***H6: There is Negative and significant relationship between Individual investor investment decision-making and Herding effect***

The regression result of Herding effect investigated in this study, Herding effect had ( $\beta = 0.104$ ,  $t = 1.405$ ,  $p > 0.05$ ), thus, Herding effect had positive and insignificant relationship with individual investment decision making in Bedele town. The result shows that, Herding effect had insignificant and affect the share company's investment decisions of individual investors in Bedele town. ***Thus, H6 not supported.***

## 4.9. Summary of Hypotheses tested

In summary, the hypotheses planned in the study are tested. The outcomes of these hypotheses specified in the table 4.27 blows:

**Table 4.27: The summary of hypothesis tests (source: The author)**

No	Hypotheses	Contents of Hypotheses	Contents of findings	Findings
1	<b>H1</b>	The behavioral variables that influence the investment decision making of individual investors in the share companies at Bedele town are Heuristics, Prospect, Market, and Herding variables.	The behavioral variables that influence the investment decision making of individual investors in the share companies at Bedele town are Heuristics, Prospect, Market, and Herding variables.	<i>The findings support H1</i>
2	<b>H2</b>	The behavioral factors have high-level impacts on investment decision making of individual investors in the share companies at Bedele town.	Some variables have high impacts on individual investors' decision-making, a few variables have low impact, only regret aversion has very low impacts and most of the variables have moderate impact on individual investors' decision-making at Bedele town.	The findings <i>do not support the Hypothesis H2</i>

3	<b>H3</b>	There is Negative and significant relationship between Individual investor investment decision making and heuristic variables.	There is positive and significant relationship between Individual investor investment decision making and heuristic variables.	<i>The findings</i> <b><i>Do not support H3</i></b>
4	<b>H4</b>	There is Negative and significant relationship between Individual investor investment decision-making and Prospect variables	There is positive and significant relationship between Individual investor investment decision-making and Prospect variables	<b><i>Do not support H4</i></b>
5	<b>H5</b>	There is Negative and significant relationship between Individual investor investment decision-making and Market variables.	There is positive and insignificant relationship between Individual investor investment decision-making and Market variables.	<b><i>Do not support H3</i></b>
6	<b>H6</b>	There is Negative and significant relationship between Individual investor investment decision making and herding effect.	There is positive and insignificant relationship between Individual investor investment decision making and herding effect.	<b><i>Do not support H3</i></b>

**Table 4.28: Some Summary of Behavioral factors findings in earlier studies (source: The author)**

Author/Years	Country	Findings	Relation with this study
Le Phuoc Luong (2011)	Vietnam	Behavioral factors affecting the investment decisions of individual investors at the Ho Chi Minh Stock Exchange are Herding, Market, Prospect, Overconfidence-gamble’s fallacy, and Anchoring-ability bias. Most of these factors have moderate impacts but Market factor has high influence.	Most of this study findings has just fit the previous model
Yoseph Tadesse (2015)	Ethiopia	Behavioral factors affecting the investment decisions of individual investors at the Ethiopian private commercial Banks are Heuristic, Prospect, Market, and Herd factors: All the behavioral variables have a moderate impact and have positive correlation on investment decision of individual investors in Ethiopian private commercial Banks.	This study Confirm most of them. However, Gamblers fallacy, anchoring, Mental accounting, over and under reaction of market, and some variables of Herding effect does not included in previous study.
Talal Alquraan, Ahmad Alqisie and Amjad Al Shorafa (2016)	Saudi	Behavioral finance factors (Loss Averse, Overconfidence, and Risk Perception) have significant influence on the stock investment decisions of individual investors in Saudi Stock Market, while Herd has insignificant effect.	This study Partially support it

Navaneethakrishnan Kengatharan (2014)	Sri Lanka	Behavioral factors affecting the investment decisions of individual investors at the Colombo Stock Exchange are; herding, Heuristics, Prospect and Market. Most of the variables from all factors have moderate impacts whereas anchoring variable from heuristic factor has high influence and choice of stock variable from herding factor has low influence	This study supports it. But anchoring variable from heuristic factor and choice of stock variable from herding factor has moderate influence in this study
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## CHAPTER FIVE

### 5. SUMMARY OF FINDINGS AND RECOMMENDATIONS

#### 5.1. Summary

The study involved a sample of 119 investors out of 1219 individual traders that constituted the sample size. The study precisely intended to determine behavioral factors that influence the individual investors' investment decision making in share companies' investment at Bedele Town. To collect data the researcher used an organized questionnaire which was pilot tested to ensure the questions were adequate when data collection was carried out. To address research problem and to accomplish research goal, the research design that used in this study was mainly Descriptive and Explanatory research design. The questionnaire constituted 39 items. The respondents were the individual traders at Bedele town. To Measure the quality of data, researcher used Cronbach's alpha test and to test the hypotheses of the study, the researcher used the tools Factor analysis, KMO's, mean scores, standard deviations, percentages, F test, Eigen values and Pearson's correlation coefficient analysis were used. From the findings of this study, it is very clear that psychological biases exist among the individual traders of influencing their investment decision. The objective of the study completed by giving all the answers for the research questions rose in the Section one. The following part gives the conclusions for the study by hand over the main points to answer the research questions.

#### 5.1.1. Descriptive parts of the study

The study revealed that, 61 respondents were male which is accounted to 51.3 % of the total respondents whereas the remaining 48.7 % or 58 are female respondents. Both genders fairly represented in the study. Age range Between 28 – 37 is highly represented in the sample that was 34.5% of the sample of young group. The result implies there is an investing habit among those in age range between 28 – 37 years old while the investing culture among those in ages above 57 years old of the respondents were low. Further, the study also indicates that the middle-aged populations have better investing habits than the rest aged population. This coincides with the high productive age of the population. Most of the respondents 77.3 % were married. This indicates that married investors are more attracted to investments at Bedele town. From the outcomes of the study, 31% were degree graduated as their highest level of education. Since majority of the respondents were educated, this show that the adoption and investing on share companies have certain kind of relationship with

the education level. Thirty three (33.6% ) of the sample respondents were found as an average monthly income of 2001-5000 birr category and the most dominant income group in the sample.

The findings of the study show that 79.8% were already participating in the share market. The study revealed that most people invest both in the short-term and long-term basis. The study shows that only 5.9% of the respondents have a high frequency of buying shares, which is very low, and most of them buy moderately. This implies buying and selling of share companies in Bedele town was not hot market. The results revealed that from the total respondents, most of them got information from electronic media, which is most popular source of information.

Since majority of respondents got information from electronic media, this indicates electronics media regarding share companies market did more advertisement in the population. A large proportion of the samples are investors who have attended the share market for the duration of 1-5 years, which was 62.2%. This result shows that, most of individuals have just paid their attention to share market in the recent years. The study shows that the largest proportion of respondents (26%) registers their accounts at Banks Share Company while 20.2% of the respondents not registered at any of the share companies and the rest registered in the others. The higher percentages of (28.6%) individual investors in the surveyed sample invest with ranges above 20,000 ETB. The five reasons for investing considered in this study were; to grow capital, for saving, to increase income to increase profit. Results of the study indicate that all of the respondents invest for all purposes given on the questionnaires. The researcher identify that 51.3% of respondents have lack of more awareness to participate at hot rate in the share companies. This implies it needs to do on more advertising of share market at Bedele town. Since the respondents have relatively high intention to invest banking and trade investment, share company's organizers have to focus to mobilize on Bank and trade investment at Bedele town.

### **5.1.2. Behavioral factors analysis**

The exploratory factor analysis (EFA) was used for the behavioral variables (HR15 to HSH32) and investment Decision-making (ID33 to ID35) to identify the behavioral factors. The analysis results that the remaining variables are grouped into two factors at the Eigen value = 1.367, KMO = 0.937 (sig. = 0.000), percentage of total variance explained = 88.49%, and all factors loadings are more than 0.5. A measure of sampling adequacy of (0.937) with a value of Bartlett's test of Sphericity (5561.028) with significant level ( $P < 0.001$ ), indicates the suitability of factor analysis.

The consequence of EFA factor analysis shown that, the behavioral variables that influence the investment decision making of individual investors in the share companies at Bedele town are:

- ✓ Representativeness, Overconfidence, Anchoring, Availability and Gambler's Fallacy belongs to heuristic;
- ✓ Loss aversion, Regret aversion and mental accounting goes to prospect;
- ✓ Price changes, Market information, Past trends of shares, Fundamentals of underlying shares, Customers preference and Over and under reaction to price changes belongs to Market variables and
- ✓ Impacts of other investors' decisions, Buying and selling, choice of trading shares, Volume of trading shares and Speed of herding belongs to herding variables. From the findings, all of the behavioral variables that influence the investment decision making of individual investors in the share companies at Bedele town confirmed.

The variables of Heuristic: Representativeness, anchoring, and Gambler's Fallacy have moderate impacts on the decision making of individual investors While Overconfidence and Availability Bias have high impacts on the decision making of individual investors. This means individual investors at the Bedele town extremely tend to believe that their knowledge and skills are sufficient to invest on share companies as well as they prefer of investing in local companies which they are familiar with and information are available than others. In other ways, the investors follow the recent shares and avoid the previous shares that have poorly performed in the recent past in moderate way. They always refer to the initial purchase price of shares when selling or analyzing and focus on recent experience to be more optimistic when the market rises and more pessimistic when the market falls and depend on previous experiences in the market for their next investment in medium ways.

Regarding of Prospect, Loss aversion has moderate impacts on the decision making of individual investors while Regret aversion have very low impacts and mental accounting have low impacts. The result shows that, respondents ignore to sell decreasing shares and willing to sell increasing ones at moderate degree. However, after a prior loss, they become more risk averse at very low degree and the investors have a low tendency of treating each element of their investment portfolio separately.

Price changes, past trends of shares and Customer preference have moderate impacts on the decision making of individual investors. Market information and Fundamentals of underlying shares has high impacts on the decision making of individual investors while over and under reaction to price a change has low impacts



regarding market factors. This means the individuals Market information is essential for their share company investment thus, their decisions depend on financial information available in the market.

In relation with Herding effect, individual investors at Bedele town follow moderately the Impacts of other investors' decisions; they more or less tend to consider the others' behaviors of Buying, selling, choice of trading shares, Volume of trading shares and Speed of herding. Therefore, the findings ***do not support the Hypothesis H2*** that intends all have high-level impacts on investment decision making of individual investors in the share companies at Bedele town.

The results from the evaluation of the investment decision indicate that the investors at the Bedele town influenced by the information structure of share market and lack of more awareness; the market situations on the market of share companies investment and investors more risk taker for their investment decision result. Among the variables of investment decision, the market situations on the market of share have high impact at Bedele town.

Generally, Regression result shows that heuristic variables and Prospect variables have positive and significant relationship to investment decision of individual investors in share companies at Bedele town while Market variables and herding effects variables have positive and insignificant.

## **5.2. Recommendations**

### **5.2.1. Recommendations for individual investors at Bedele town**

Influence of the behavioral factors on investment decision making of share market verified through factor analysis portrayed valuable findings. Recommendations offered to the individual investors of share market for better understanding market price movement. An investor to be successful should understand his own investment psychology and it starts with knowing and avoiding psychological biases from their own experiences and by setting of realistic and reasonable objectives through a diversifiable portfolio and also consider all the mechanisms of financial market.

The result revealed that, representativeness has positive relationship to the investment decision-making variables at strong correlation coefficient. Representativeness bias occurs when an individual classifies new information based on experiences and categories. Here investors have to be take care on overweighting of new information and underweighting of the previous experience.

The findings also show that, overconfidence has high impacts on the decision making of individual investors and has positive with very strong correlation. This means individual investors at the Bedele town extremely tend to believe that their knowledge and skills are sufficient to invest on share companies. However, overconfident traders tend to miscalculate the associated risks of active share investment, which can affect badly to their investment result. Therefore, an acceptable advice for the investors is that overconfidence is great for their investment if they can use it in the clever and appropriate ways. In other ways, overconfident traders tend to believe more strongly in their own estimations, and concern less about the beliefs of others. They may hold unrealistic beliefs about how high their returns can be and how exactly these returns can be estimated. Therefore, investors have to use it in appropriate way.

Besides, to overconfidence Availability Bias have high impacts on the decision making of individual investors. In this, People tend to base decisions on information that is readily available or easily recallable. Depending only on available information may lead to bad performance, mainly in case some people attempt to fake others by distributing false information for personal benefits. Therefore, investors have to know availability bias in proper way. Further, Market information has high impacts on investment decision making. Since share, market is not developed and lack of reliable information, so that individual investors should select tangible investment information to consider as references for their investment. The investors may have to sieve carefully to hold useful information from the misunderstanding and look around for illegal information, which may have negative effects on the investment outcomes.

### **5.3. Further research**

This study is one of the volunteers using behavioral finance in Bedele town of Ethiopia. It is necessary to have further researches to confirm the findings of this research with the larger sample size and the more diversity of respondents. It also suggested conducting the further researches to improve the measurements of behavioral finance as well as adjust them to fit the case of share market. The further researches also suggested applying behavioral finance to explore the behaviors influencing the decisions of institutional investors in the share market. These researches can help to test the suitability of applying behavioral finance for all kinds of share markets with all components of investors.

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# Appendixes 1

## Appendix-3. 1: Questionnaire for Primary Data Collection

This questionnaire planned to gather data from individual traders in Bedele town, for study on behavioral factors influencing individual investors' participation in the share companies' investment. Your support in providing truthful answers to the following questions is very essential for the achievement of this study. Your answers will kept confidential. It is only for academic purpose.

### Part one: - General Information

1. **Gender** male  Female

### 2. Age

18-27	28-37	38-47	48-57	Above 57
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 3. Marital status

Married	Unmarried	Divorced
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 4. Educational background

None	1-8	High school	Diploma	Degree	Masters	PHD	Religious education
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 5. Monthly Income Estimation

Below 1,000 birr	1,000-2000 birr	2,001-5000 birr	5,001-10,000	10001-20,000	Above 20,000
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 6. Describe your status regarding investment in share company

I am partaking in the share companies now

I have plans to participate in the share companies

I do not know about share companies' investment

**7. What kind of investor are you?**

Short term

Long term

Both

**8. What has been your frequency of buying and selling shares?**

High  Medium  Low  Never

**9. Do you level shares as an investment just like other investments?**

Yes  No

**10. Where do you get information about Share Company?**

Family and Friends

Newspapers

Others media

**11. How long have you attended in the share company?**

Under 1 year  1-5 years  5-10 years  above 10 years

**12. Please put  $\surd$  (tick) the share company that you are holding an account for share investment.**

No	Available share company	$\surd$ (Tick)
1	Banks	
2	Beverages and beer company	
3	Sugar company	
4	Hotels	
5	Constructions	



6	Services	
7	Transportation	
8	Manufacturing	
9	Others	

**13. The total amount of money (birr) that you have invested at the share company.**

Under 1000 birr  1001-10000birr  10001-20,000birr  above 20,000birr

**14. What are your reasons for investing?**

For capital growth

For saving

To increase income

For profit

All

**Part 2: - Behavioral Factors influence your Investment Decisions.**

**2.1. By putting “X” sign, Please evaluate the degree of your agreement with the impacts of behavioral factors on your investment decision making:**

No	Factors	Strongly dis agree	Somewhat dis agree	disagree	Agree	Strongly agree
1	<b>Heuristic variables:</b>					
HR 15	You follow the recent shares and avoid the previous shares that have poorly performed in the recent past.					
HOC 16	You believe that your knowledge and skills are sufficient to invest on share companies.					
HAn.17	You always refer to the initial purchase price of shares when selling or analyzing and focus on recent experience to be more optimistic when the market rises and more pessimistic when the market falls.					
HAB 18	You prefer of investing in local companies which you are familiar with and information are available than others.					
HGF 19	You depend on previous experiences in the market for your next investment.					

<b>2</b>	<b>Prospect</b>					
PLA 20	You ignore to sell decreasing shares and willing to sell increasing ones.					
PRA 21	After a prior loss, you become more risk averse.					
PMA 22	You tend to organize your portfolio into separate accounts.					
<b>3</b>	<b>Market variables:</b>					
MPC23	You study wisely the price changes of shares that you intend to invest in.					
MMI24	Market information is essential for your share company investment.					
MPTS25	You place the past trends of shares under your attention for your investment.					
MFUS26	Your decisions depend on financial information available in the market.					
MCP27	You investigate the companies' customer preference before you invest.					
MOUR28	You have the over-reaction to price changes of shares.					
<b>4</b>	<b>Herding variables</b>					
HIOID 29	Other investors' decisions of					

	choosing share types have impact on your investment decisions.					
HBSCTS30	Other investors' decisions of buying and selling shares have influence on your investment decisions.					
HVTS31	Other investors' decisions of the shares volume have impact on your investment decisions.					
HSH32:	You usually respond speedily to the changes of other investors' decisions and follow their reactions to the share market.					
<b>5</b>	<b>Investment Decision</b>					
ID33	The information and lack of more awareness influence your investment decision.					
ID34	The market situations on the market of share have impact on your investment decision.					
ID35	You are more risk taker for your investment decision result.					

**Part Three: - Final Question**

**36.What is your most challenge to participate on investment in Bedele town?**

Lack of information

Lack of money

Fear of the past

Fear of risk

Other

**37. Describe the factors that challenge you to participate on investing in the share companies.**

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**38. Describe the advantage and disadvantages depending on your previous profits and loss.**

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**39. What types of investment you prefer to invest in future?**

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**Thank you for giving your idea!**

## Questionary Oromic version

### Gaafannoo

#### Gaafannoo – 1: Gaafannoo raga jalqabaa

Gaafannoon kun kan qopha'ee rakkoolee aksiyoonan ijaaramanii investmentii babal'isuurratti rakkoo jiruu adda baasuf kan ooludha. Ragaan gaafatamu kun hojii dhaabbilee barnoota olaanoof kan tajaajilu fi qaamolee dhimma kanarratti hojjeetaniif ragaa ta'e kan tajaajilu waan ta'eef karaa qulqullina qabuun akka guuttan kabajaan isin gaaffa.

#### Kutaa tokko: - Odeeffannoo walii galaa

##### 1.1.Saanduqa deebii fuldura gaaffii jiru keessatti mallattoo "X" ka'i.

1. Saala Dhiira  Dhalaa

##### 2. Umurii

18 hanga 27 gidduu	28 hang a 37	38 hang 47	48 hanga 57	57 oli

##### 3. Haala ga'ilaa

Kan fudhee	Kan hin fudhin	Fuudhe kan hike

##### 4. Sadarkaa Barnoota

hin bara nne e	Kutaa 1 hanga 8ffaa	Sadark aa 2ffaa	Dipp iloo maa	Digirii	Ma aste ersii	Dook tireeti i	Bar. Amantii

**5. Galii ji'an argattan**

Qarshii	1,000	2,001	5,001	10001	20,000
1,000	hanga	hanga	hanga	hanga	fi sana
gadi	2000	5000	10,000	20,000	ol

**6. Aksiyoonan wal qabatee haala irra jirtuu sanduuqa fulduree jiruu keessatti kan si ilaallatu mallattoo “√” ka’uun ibsi .**

- A. Yeroo amma kana Aksiyoona biteen keessatti hirmaata jiraa.
- B. Aksiyoonaa bitachuuf itti karoorseen jira.
- C. Wa’ee Aksiyoona wantan beeku hin jiru

**7. Hojii ati amma hojjeeta jirtuu ykn investmentii ati geggessaa jirtuu kan akkamitii?**

- Kan yeroo gabaabaa
- Kan yeroo dheeraa
- Lamanuu

**8. Sheerii ykn Qooda haala akkamiin deddebitee bita jirtaa?**

Olaanaa  Giddu galeessaa  Gadi aanaa  Bitee hin beeku.

**9. Sheerii bituun invest gochuun hojii kan biroon gaafa wal bira qabdu sadarkeessuun ni danda’amaa?**

Eeyyee  lakkii

**10. Wa’ee Aksiyoona bitachuun gurma’uu eessaa dhageessee beekta?**

Maatii fi hirya koo irraa

Gaazexaa irraa

Midiyaalee adda addarraa

**11. Erga Aksiyoonaan ijaramtee waggaa meeqa gutteetta?**

Waggaa 1 gadi  Waggaa 1-5  waggaa 5-10  waggaa 10 olii

**12. Mallattoo  $\checkmark$  (tick) saanduqa duwwaa fuldura dhabbataatti ka'uudhaan Dhaabbata Aksiyoona keessaa qabdu hunda ibsi.**

Lakk.	Gosa dhabbilee jiran	$\checkmark$ (Tick)
1	Aksiyoona Baankii	
2	Warshaa Dhugaatii lallafaa	
3	Warshaa Shukkaaraa	
4	Hooteela	
5	Dhaabbata ijaarsaa	
6	Tajaajila hawaasummaa	
7	Geejjiba	
8	Manufaakcharingii	
9	Daldala kan biro	

**13. Hanga mallaqa aksiyoona ittin bitattee ibsi.**

Qarshii 1000 gadi  1001-10000  10001-20,000  Qarshii20,000 oli

**14. Maalif qabeenya kee invest gochuuf murteessitee?**

Kaappitala koo guddisuuf

Qusannoof

Galii koo guddisuuf

Bu'aa argachuuf

Hunda



**Kutaa lammaffaa:-Sababoota keessoo murtee Investmentii irratti dhiibbaa godhaniin walqabatu.**

**2.1.Gaaffilee 15 hanga 32 tti jiraanif filannoon deebii keetii 5 mata-duree saanduqa armaan gadiirra dalga tarreeffamaniiru. Kanaaf tokkon tokkoon gaaffileef filaannoo shanan keessaa deebii kee kan ta’e tokko qofa filachuun saanduqa fuldura gaaffii keessa jiran keessatti qixa deebii keetiin mallattoo “X” ka’i.**

Lakk.	Sababoota	Baay’ee	Hanga tokko	Hin	Nan	Baayiseen
1	<b>Jijiramoota fayyaleessa ta’aniin kan walqabatu.</b>	<b>itti hin amanuu</b>	<b>itti hin amanuu</b>	<b>amanuu</b>	<b>amanaa</b>	<b>itti amanaa</b>
HR 15	Isin Sheerii yookiin aksiyoonaan duraan bittan yeroo dhiyoo keessatti bu’aa kan hin buusne yoo ta’e sheerii duraanii sana dhiisun sheeroota yeroo dhiyoo bahan bituu irratti ni xiyyeeffattu.					
HOC 16	Beekumsi fi dandeettiin isin qabdan Aksiyoona bituun invest gochuuf gahadha jettanii ofitti amanamummaa guddaa ni qabdu.					
HAn.17	Isin yeroo sheerii bittanus ta’ee yeroo gurgurtan gabaan yeroo ol ka’uuf caalaatti yeroo amanamaa ta’uu haala gabaa yeroo dhiyoo kana irratti xiyyeeffachuuf gatii ka’umsaa bittaa sheerii ilaalun murteessitanii sheerii bittuu.					
HAB 18	Yeroon sheerii bittanis ta’e					

	gurgurttan filannoon keessan yeroo hundaa sheerii naannoo keessanitti gurguramuu fi kan keessa beektan irraatti xiyyeeffattu.					
HGF 19	Isin investmentii gara fulduratti gochuu kan dhiistan muuxxannoo kanan duura gabaa keessatti qabdan irratti hunda'unii.					
2	<b>Sababoota wanti tokko ni ta'a jedhanii abdiin eegu.</b>					
PLA 20	Sheerii yeroon bituus ta'ee, gurguruu kan gatiin isa gadi adeemuu dhiiseen kan gatiin isa ol ba'aa deemuurrattiin xiyyeeffadha.					
PRA 21	Kisaraan yeroo jalqabaa yeroo isiin qunnamu, hojii itti anurratti isin kisaaraadhaaf saaxilamoodha.					
PMA 22	Hojii adda addaa bakka tokkotti walitti qabuun ka'uurratti hanqina qabdu.					
3	<b>Sababoota gabaan walqabatan:</b>					
M PC23	Isiin aksiyoonaan invest gochuuf yoo barbaddan jijjirama gatii gabaa aksiyoona irratti jiruu sirritti qo'attuu.					
M MI24	Odeffannoon gabaa hojii kessan aksiyoonaatif baay'ee					

	murteessadha.					
M PTS25	Investmentii keessaniif haala bu'aa sheerii duraan turee irratti ni hundoofu.					
MFUS 26	Murteen keessan haala faayinansii gabaarra jiru irratti ni hunda'a.					
M CP 27	Isin Osoo aksiyoona hin galin dura fedhii mamila dhabbata sheerii irraa bittanuu ni qorattu.					
M OUR 28	Jijjirama gatii aksiyoona irratti deebii gaha ta'ee ol ni qabaattu.					
4	<b>Sababoota gara namni baay'een dufeetti duufun wal qabatan.</b>					
HIOID 29	Gosti aksiyoona daldaltoota biroon filatamee filannoo aksiyoona keessan irratti dhiibbaa ni qabata.					
HBSCTS30	Isin Aksiyoona kan biroo bituuf abbootin qabeenyaa biroo murtee keessan irratti dhiibbaa ni qabatuu.					
HVTS 31	Baayinni sheerii daldaalootni biroo bitanii murtee isin aksiyoona bituuf murteessitan irratti dhiibbaa ni qaba.					
HSH 32	Jijjirama gabaa aksiyoona irratti daldaaltoota kan birootiin murteeffame irratti isiinis hatattamaan murtee ni					

	kennitu.Deebii gabaan kennus ni hordoftu.					
5	<b>Murtee Investmentii</b>					
ID33	Odeeffannoo fi hubannoo gaha wa'ee investmentii irrattit dhabuun keessan murtee isin investmentii irratti fudhattan irratti dhiibba ni qaba.					
ID34	Haalli gabaan Aksiyoona murtee isin investmentii kana irratti fudhattan irratti dhiibba ni qaba.					
ID35	Bu'aa/balaa murtee investmentii keessaniin wal qabatee dhufu irratti olaantummaan isintu balaa dhufuu sana fudhata .					

**Kutaa 3ffaa:- Gaaffii walii galaa.**

**36.Hojii investmentii aksiyoona ykn Investmentii kaappitaalaa irratti himaachuuf hudhaa guddaa maaltu sitti ta'e?**

Odeeffannoo gaha dhabuu

Hanqina Maallaqaa

Kisaaraa duraan na qunnamee sodadhee.

Kisaaraa dhufuu sodadhee

Bu'aan Aksiyoona irra argamuu gadi aanaa waan ta'eef.

Rakkoolee Adda biroo

**37. Aksiyoona bituun ykn maallaqa qabdu invest gochuu irratti rakkoo wantoota sitti ta'an bakka duwwaa armaan gadii irratti tarreessi.**-----

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**38. Aksiyoona bituun investi gochuun bu'aaf kisaaraa isaa muuxxannoo qabdurraa ka'iiti ibsi.-----**

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**39. Fulduratti Investimeentii akkamii irratti hirmaachuu barbaadda?**

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**Yeroo keessan aarsaa gochuun yaada naf laattaniif guddaa galatoomaa!!!**

## Appendix-2

### Appendix 4.1: Factor analysis for behavioral variables and investment decision making

#### KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.937
Approx. Chi-Square		5561.028
Bartlett's Test of Sphericity	Df	210
	Sig.	.000

#### Appendix 4:2 Communalities

	Initial	Extraction
HR15: You follow the recent shares and avoid the previous shares that have poorly performed in the recent past.	1.000	.788
HOC 16: You believe that your knowledge and skills are sufficient to invest on share companies.	1.000	.804
HAn.17: You always refer to the initial purchase price of shares when selling or analyzing and focus on recent experience to be more optimistic when the market rises and more pessimistic when the market falls.	1.000	.912
HAB 18: You prefer of investing in local companies which you are familiar with and information are available than others.	1.000	.835
HGF19: You depend on previous experiences in the market for your next investment.	1.000	.912
PLA 20: You ignore to sell decreasing shares and willing to sell increasing ones.	1.000	.940
PRA 21: After a prior loss, you become more risk averse.	1.000	.911
PMA22: You tend to organize your portfolio into separate accounts.	1.000	.959
M PC23: You study wisely the price changes of shares that you intend to invest in.	1.000	.920
MMI24: Market information is essential for your share company investment.	1.000	.765

MPTS25: You place the past trends of shares under your attention for your investment.	1.000	.907
MFUS26: Your decisions depend on financial information available in the market.	1.000	.882
MCP27: You investigate the companies' customer preference before you invest.	1.000	.904
MOUR28: You have the over-reaction to price changes of shares.	1.000	.939
HIOID29: Other investors' decisions of choosing share types have impact on your investment decisions.	1.000	.927
HBSCTS30: Other investors' decisions of buying and selling shares have influence on your investment decisions.	1.000	.927
HVTS31: Other investors' decisions of the shares volume have impact on your investment decisions.	1.000	.948
HSH32: You usually respond speedily to the changes of other investors' decisions and follow their reactions to the share market.	1.000	.947
ID 33: The information and lack of more awareness influence your investment decision.	1.000	.914
ID 34: The market situations on the market of share have impact on your investment decision.	1.000	.807
ID35: You are more risk taker for your investment decision outcome.	1.000	.736

Extraction Method: Principal Component Analysis.

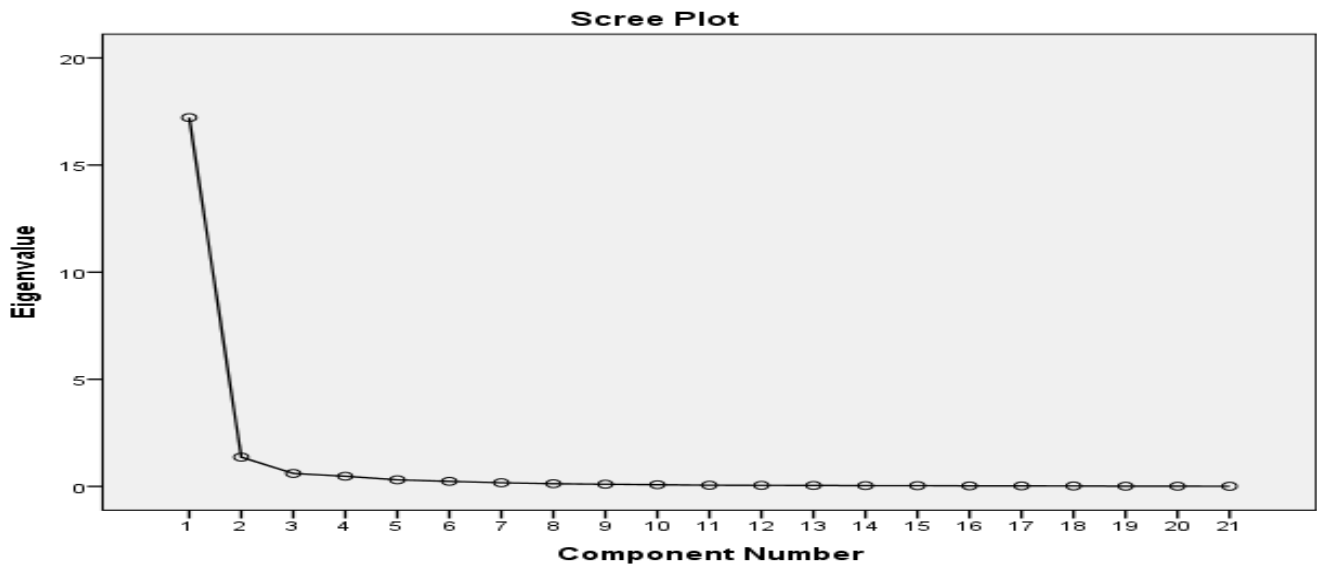
#### Appendix 4:3 Communalities Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	17.216	81.980	81.980	17.216	81.980	81.980	12.947	61.652	61.652
2	1.367	6.511	88.491	1.367	6.511	88.491	5.636	26.839	88.491
3	.606	2.886	91.378						

4	.474	2.258	93.635																			
5	.309	1.469	95.105																			
6	.236	1.123	96.227																			
7	.170	.809	97.037																			
8	.127	.607	97.644																			
9	.102	.484	98.128																			
10	.081	.384	98.513																			
11	.054	.259	98.771																			
12	.049	.231	99.003																			
13	.044	.208	99.211																			
14	.036	.172	99.383																			
15	.033	.158	99.541																			
16	.025	.121	99.662																			
17	.022	.103	99.765																			
18	.020	.094	99.859																			
19	.012	.058	99.917																			
20	.010	.047	99.964																			
21	.008	.036	100.000																			

Extraction Method: Principal Component Analysis.

#### Appendix 4:4 scree plot





#### Appendix 4:5 Rotated Component Matrix

	Component	
	1	2
HR15: You follow the recent shares and avoid the previous shares that have poorly performed in the recent past.	.615	.640
HOC 16: You believe that your knowledge and skills are sufficient to invest on share companies.	.742	.504
HAn.17: You always refer to the initial purchase price of shares when selling or analyzing and focus on recent experience to be more optimistic when the market rises and more pessimistic w the market falls.	.912	.283
HAB 18: You prefer of investing in local companies which you are familiar with and information are available than others.	.838	.363
HGF19: You depend on previous experiences in the market for your next investment.	.775	.558
PLA 20: You ignore to sell decreasing shares and willing to sell increasing ones.	.900	.361
PRA 21: After a prior loss, you become more risk averse.	.246	.922
PMA22: You tend to organize your portfolio into separate accounts.	.288	.936
M PC23: You study wisely the price changes of shares that you intend to invest in.	.913	.295
MMI24: Market information is essential for your share company investment.	.829	.278
MPTS25: You place the past trends of shares under your attention for your investment.	.867	.394
MFUS26: Your decisions depend on financial information available in the market.	.807	.479
MCP27: You investigate the companies' customer preference before you invest.	.826	.471
MOUR28: You have the over-reaction to price changes of shares.	.561	.790

HIOID29: Other investors' decisions of choosing share types have impact on your investment decisions.	.839	.472
HBSCTS30:Other investors' decisions of buying and selling shares have influence on your investment decisions.	.889	.370
HVTS31: Other investors' decisions of the shares volume have impact on your investment decisions.	.912	.340
HSH32: You usually respond speedily to the changes of other investors' decisions and follow their reactions to the share market.	.926	.298
ID 33: The information and lack of more awareness influence your investment decision.	.822	.488
ID 34: The market situations on the market of share have impact on your investment decision.	.777	.450
ID35: You are more risk taker for your investment decision outcome.	.738	.438

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

#### Appendix 4:6 Cronbach's alpha after factor Analysis for Heuristic variables

##### Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.945	.955	5

##### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
HR15	15.78	11.715	.833	.892	.949
HOC 16	14.69	15.080	.843	.783	.938
HAn.17	15.15	15.079	.847	.820	.937
HAB 18	14.56	13.401	.888	.851	.925
HGF19	15.51	12.693	.963	.956	.911

**ANOVA**

	Sum of Squares	Df	Mean Square	F	Sig
Between People	494.464	118	4.190		
Within People					
Between Items	129.321	4	32.330	140.412	.000
Residual	108.679	472	.230		
Total	238.000	476	.500		
Total	732.464	594	1.233		

Grand Mean = 3.78

**Appendix 4:7Cronbach's alpha after factor Analysis for Prospect dimension**

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.869	.873	3

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PLA 20	3.849	3.909	.599	.363	.940
PRA 21	5.798	3.315	.852	.842	.737
PMA22	5.429	2.450	.856	.851	.724

**ANOVA**

	Sum of Squares	df	Mean Square	F	Sig
Between People	267.860	118	2.270		
Within People					
Between Items	255.193	2	127.597	429.324	.000
Residual	70.140	236	.297		

Total	325.333	238	1.367	
Total	593.193	356	1.666	

Grand Mean = 2.513

**Appendix 4:8 Cronbach;s alpha after factor Analysis for Market dimension**

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.964	.966	6

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
M PC23	19.45	20.114	.914	.895	.954
MMI24	18.63	21.794	.812	.703	.965
MPTS25	19.38	20.508	.927	.901	.954
MFUS26	19.02	19.593	.907	.846	.955
MCP27	19.29	19.901	.948	.907	.951
MOUR28	20.25	19.614	.831	.729	.965

**ANOVA**

	Sum of Squares	Df	Mean Square	F	Sig
Between People	569.527	118	4.826		
Within					
Between Items	173.200	5	34.640	201.092	.000
Residual	101.633	590	.172		
People					
Total	274.833	595	.462		
Total	844.360	713	1.184		

Grand Mean = 3.87

**Appendix 4:9 Cronbach;s alpha after factor Analysis for Herding dimension**

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.985	.985	4

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
HIOID29	11.02	8.271	.934	.876	.987
HBSCTS30	11.24	7.707	.960	.930	.981
HVTS31	11.15	8.062	.984	.976	.974
HSH32	11.12	8.156	.971	.964	.977

**ANOVA**

	Sum of Squares	df	Mean Square	F	Sig
Between People	419.992	118	3.559	18.030	.000
Within Between Items	2.916	3	.972		
Residual	19.084	354	.054		
People Total	22.000	357	.062		
Total	441.992	475	.931		

Grand Mean = 3.71

**Appendix 4:10 Cronbach;s alpha after factor Analysis for Investment decision making**

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.917	.923	3

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ID 33	7.90	3.540	.896	.805	.828
ID 34	7.47	4.934	.818	.700	.910
ID35	8.11	3.895	.824	.701	.889

**ANOVA**

	Sum of Squares	df	Mean Square	F	Sig
Between People	350.265	118	2.968		
Within Between Items	25.485	2	12.743	51.414	.000
Residual	58.491	236	.248		
Total	83.976	238	.353		
Total	434.242	356	1.220		

Grand Mean = 3.91