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Role of Behavioral Biases in Investment Decisions

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Abstract

Purpose: -The study is based on a literature review related to the behavioral biases of investors. The researcher identified various behavioral biases that affect an investor's decision-making. It also focuses on the origin of behavioral finance and how it was established over time.

Methodology: -In this a literature review is presented about the origin of behavioral finance and explains the ways behavioral biases have a significant role in investment decisions. This paper summarizes the contributions made by various authors who have published articles in this discipline and considers the implications made by them.

Findings: - It provides a brief insight into the role of various cognitive and behavioral biases of investors. Behavioral biases like overconfidence, mental accounting, representativeness, framing, heuristic, disposition effect, personality traits of investors, etc. play a significant role as a behavioral mediator in investors' decision-making process.

Research limitations: - It is based on some of the findings of the latest researches in the field of behavioral finance. It has not covered all the research articles related to the field. The main emphasis was on the articles related biases of investors while making decisions.

Keywords: *- Behavioral Biases, Overconfidence, Heuristic, Disposition- Effect, Herding, Loss Aversion*

Introduction

Behavioral finance is termed as a sub-discipline of behavioral economics. Behavioral finance is "the study of the influence of psychology on financial practitioners' behavior and the subsequent effect on markets" Sewell (2001). It is based on findings from sociology and psychology in finance theories. Behavioral finance is based on models which have been developed to explain the anomalies prevailing in stock market and behavior of investors when rational models do not provide sufficient explanations" (Glaser et al.,2004).
Initially, traditional finance dominated the field of finance. The same scenario continued until the mid-1950s. The central conventional finance assumption was that the investors are rational and make decisions based on a logical decision-making process. Along with rationality of investors, traditional finance further assumes efficiency of markets and that the investors are aware of the probability distribution of expected risk prevailing in the market (Merton,1969 and Markowitz,1952). It is based on traditional models like the Arbitrage Pricing Theory (Ross, 1976), CAPM (Sharpe, 1964), and the Efficient Market Hypothesis (Samuelson,1965).

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The studies based on psychology suggested that investors do not always make rational choices, and their decisions are not always optimal (e.g., Edwards, 1954). Psychological factors like emotions, overconfidence, and other cognitive factors, influence individual investors' decisions. There is a conceptual difference among normative models, descriptive models, and prescriptive models of decision-making (Bell et al., 1988) It is further explained that economists have been unwise assuming that descriptive and normative models are the same. The research in this domain had little impact on economics for many years. Kahneman (2011) argues that behavioral economics has its origin in the early 1970s, although it was formally established in 1979. (Kahneman & Tversky, 1979) propounded the prospect theory to contribute to behavioral economics. This theory describes the decision-making process of investors in the instances of uncertainty. It explains that investors are biased while assessing expected profits and losses. Prospect theory has been published in 1979 by Kahneman and Tversky and they received "Nobel Prize for Economics" in 2002, after that behavioral research has been considered as an important inclusion in behavioral economics. The development of behavioral finance was slower than behavioral economics. De Bondt and Thaler (1985, 1987) majorly contributed to the field of behavioral finance. Thaler (1999) explained that researches in the field of finance would be based on the research findings of behavioral economics.

However behavioral finance was significantly developed by (Daniel, 2002), (Glaser, 2004), (Garling, 2009), and (De Bond et al., 2010). These researches indicate that the corpus of work in finance demonstrates that investors are biased in decision making, and human judgments are affected by market anomalies. Shefrin (2005) suggested that in finance, there is a need to establish a theoretical framework that emphasizes circumstances that produce irrational decision-making and also focuses on the reasons behind these irrational decisions.

Tversky and Kahneman (1974) explained the cognitive biases of investors as they use heuristics (rule of thumb) in investment decisions. Although heuristics may result in economically effective choices, generally, it leads to biased conclusions. Benartzi and Thaler (2001) further explained that investors use the rule of 1/N i.e. if three investment options are available to the investor, then he will invest one-third in each typ
e of fund.

Another cognitive bias is overconfidence, in which investors rely on their instinct and cognitive abilities. They have full faith in their reasoning capabilities ((Wood and Pompian, 2006). Odean and Barber (2001) conducted a study on thousands of households trading in reputed discount brokerage houses and analyzed that investors have overconfidence. He further observed that women are less overconfident than men investors.

This paper aims to discover the role of psychological factors like overconfidence, representativeness, anchoring, etc.to take rational investment choices. Here, the review of recent literature is used as a research method. A good number of research articles have been reviewed. The research articles have been prominently from Elsevier, Emerald Insight, and Google Scholar.

Behavioral Finance, Behavioral Biases, and Investors Decisions were used as keywords. The study has an insight into the origin of behavioral finance and to find out various behavioral biases that affects the investor's decision-making process.

The researcher has included time frame ranges from 1979 onwards as phenomenal work in behavioral finance was initiated by Kahneman and Tversky in 1979. In this research paper, an extensive review of recent research articles has been included.

Literature Review: -

Investment decisions are critical decisions, and various studies done so far have stated that investor's choices are affected by psychological factors. Kahneman and Tversky (1979) contributed to behavioral finance and said that investors' decisions have an impact of various traits like behavior, emotion and psychological factors. Another concept of prospect theory is loss aversion, as investors are more risk-averse about losses than they are attracted to gains. The biasness of investors results in over or underestimating the extreme events.

The findings of studies done by Ricciardi and Simon (2000) identified that there are various behavioral aspects to influence investors' rational decision-making. Another study done by (Chen, Kim, Nofsinger Rui) reveals the issues in investor's behavior due to biases, and make poor trading and investment choices. According to Mwangi (2011); Waweru, Munyoki & Uliana (2008), heuristics have an influence on investment choices as compared to prospect theory.

The study (Michailova, 2010) reveals that risk aversion negatively affects the decision-making process of investors. Investors design their portfolios based on their risk perception. (Odean, 1998) argues that risk aversion results in irrational investment decisions and the wealth of investors decreases in the long term.

(Sadi, Ghalibaf, Rostami, and Gholipour & Gholipour 2011) in their research correlated investors' personality traits with behavioral biases. The study is based on the stock market of Tehran, and it included five models of personality. These five models include extroversion, hindsight bias, randomness bias, consciousness, availability bias, etc. The researcher has found that extroversion and hindsight bias share a positive relation, whereas consciousness and randomness share a negative relationship. It has been further analyzed that there is no relation between agreeableness and any perceptual error.

Kahneman1974 investigated that investors are affected by cognitive illusions and they are generally unaware of the risk and get out of the market before a bubble bursts. He further examined that investors are optimistic, which is why casinos are crowded with luck seekers.

Investors buy stocks when prices are high and sell their shares when there is a downturn. In this study related to investors, psychologist Kent et al. (2002) analyzed that movement in stock prices is affected by the perceptions of investors. These perceptions may be related to the valuation of shares, management of return and risk, trading practices, and stochastic process of asset prices.

The investor's decision-making is also affected by overconfidence bias. This is the tendency of self-attribution in which an investor believes in his instinct and overestimates his skills. Shabbir and Qadri (2013), Bashiretal. (2013) found that overconfidence has a positive effect on investment decisions whereas Kengatharan and Atif (2014) investigated a negative impact of overconfidence on investment decisions.

Individual investors follow the crowd believing that the decisions made by the majority are always right. This behavior is known as herding bias in behavioral finance. (Luong& Thu Ha (2011) found out that investor's herding behavior results in irrational buying and selling of securities and creating speculative bubbles in the market. This behavioral bias results in excess volatility in the stock market. As per the finding of Hirt and Block (2012), herding behavior is generally exercised by institutional investors. Kengatharan (2014), Wamae (2013), and Lim (2012) found out that investment decisions are positively affected by herding behavior.

Nofsingera&Varmab (2013), Qureshietal. (2012) focused on availability bias in investors. Availability bias exists when investors make decisions based on readily available recent information. They focus on a particular effect and ignore the whole situation. Availability bias positively affects investor's decisions(Qureshietal.2012) and(NofsingeraandVarmab2013).

Simultaneously, availability bias has a moderate effect on investors' decisions as per the findings of Luong & Thu Ha (2011). Irene Cherono et.al. (2019) stated that in the NSE, Kenyan stock market, herd behavior has
no significant effect on stock market reaction whereas loss aversion, overconfidence and mental accounting has a significant effect on stock market reaction. Geetika Madaan & Sanjeet Singh (2019) studied the relationship between behavioral biases and investment decisions and concluded that decisions are affected by overconfidence and herding bias while there is no impact of disposition and anchoring bias.

Frequency of Keywords Used in Study: -

Authors	**Key Words**
Jay. R. Ritter (2003)	Behavioral Finance, Market Efficiency, Arbitrage, Psychology
Gulnur et.al (2012)	Decision Making, Research Work, Psychology, Behavioral Finance
Camelia Oprean and Critina Tanasescu (2014)	Rational Expectations; Capital Markets; Behavioral Finance
Dimitrios Kourtidis et.al (2015)	Overconfidence; Psychological Bias; Behavioral Finance, Trading Behavior;
Suzaida Bakar et.al (2016)	Behavioral Finance; Investors' Decision Making , Psychological Factors
Lukas Meub et.al (2016)	Anchoring, Heuristic And Biases, Incentives, Laboratory Experiment, Cognitive Abilities, Forecasting,
Tae-Young Pak et.al (2016)	Cognitive Aging, Financial Sophistication, Portfolio Choice, Cognitive Bias, Overconfidence,

Halil Kiym et.al (2016)	Behavioral Biases, Risk, Equity , Financial Literacy, Investor,
Zubairtau Ni et.al (2017)	Information, Trading, Big Five Personality, Chinese Stock Market
Rajdeep Kumar et.al (2019)	Stock Market, Investors, Behavioral Finance, Socio-Psychology, Decision-Making
Haruna Babatunde et.al	Retail Investors, Interpretivist approach, Fund Managers, Investment decisions
Irene Cherono et.al (2019)	Herding, Mental Accounting; Overreaction; Market Reaction; Under-Reaction, Loss Aversion; Overconfidence
Geetika Madaan et. Al (2019)	Behavioral Biases, Overconfidence, Individual Investors, Anchoring, Disposition Effect
Dr. V.Parameswari (2019)	Individual Day Traders, Trading Preference, Profile, Behavioral Attitude
Irene Cherono et.al (2019)	Herding Behavior; Overconfidence; Loss Aversion; Market Reaction, Overreaction;
Geetika Madaan et.al (2020)	Behavioral biases, Overconfidence, Individual Investors, Anchoring, disposition effect,

Analysis and Discussion: -

Numerous factors affect the investment decisions of investors and results in irrational decision-making. The extensive literature provides insight into such behavioral biases and the effects of those biases in investors' behavior patterns. These behavioral biases can be summarized as follows: -

Level of Confidence of Investors: - Various researches focused on the overconfidence bias of investors. Camelia Oprean and Critina Tanasescu (2014), Gulnur muradoglu, and Nigel Harvey (2012) emphasized that confidence affects the behavior of people investing in emerging capital markets. Trading Volume is directly affected by the confidence of investors. Jay R Ritter (2003) has also identified the overconfidence of investors as a cognitive bias, which results in irrational decisions in the stock market and affects the valuation of securities. Suzaida Bakar and Amelia Ng Chui Yi (2016) observed a positive effect of over confidence on investor decision-making in the Malaysian market. Halil Kiymaz et al. (2016) observed that the investment behavior of finance professionals in the Turkish market is influenced by overconfidence and other biases. Overconfidence positively affects Stock Performance, Volume, Frequency, and overall Trading Behaviour, as stated by Dimitrios et al. (2015).

Heuristic and Disposition Effect: - Heuristics (rule of thumb) play a vital role in the behavior pattern of investors, Tversky and Kahneman (1974). Benartzi and Thaler (2001), Mwangi, 2011, Waweru et al. 2008 observed that heuristics results in biased investment decisions. Gulnur Muradoglu and Nigel Harvey (2014) also discover that the heuristic and disposition effect is cognitive biases, which results in irrational investment decisions. J R Ritter (2003) also emphasized that heuristic and disposition effect is the forces to influence stock market investments.

Anchoring: - Investors use last data points as a reference while making investment decisions, these data points play a role of mental anchor and results in biased decisions (Harvey, 2007). Anchoring bias leads to the tendency of considering illogical price levels as a base in decisions making process. Kahneman (1974) demonstrate an existence of bias i.e. anchoring, in which individuals construct calculations by beginning with an initial value and adjusting it to arrive at a final value.

Herding: - Investors generally follow the actions of other investors without having any analysis of rationality of those investor's actions. As a human being they think that decisions of larger group are better and can be followed to make wise investment decisions (Werner, 1999).

Herding is prevalent in institutional and individual investors and can be exaggerated based on market structures and states of market like volatility, volume of transactions and cross border transactions.

Loss Aversion: - Tversky and Kahneman explored another bias as well which is known as loss aversion in the prospect theory. This theory suggests that investor value gains and losses in different way. Investors always try to avoid the risk and prefer to take those decisions which are based on expected gains.

Investors have a tendency to feel regret of making errors in investment decisions, loss aversion is generally a case of regret aversion (Shiller, 1998).

Past experiences of investors affects the extent of loss aversion. If an investor has made profits in the past then he will feel confident to make future investment decision but he has suffered losses in the past then he will think twice before making any future investment decision (Thaler and Johnson, 1990).

Mental Accounting: - Thaler, (1980) proposed the existence of another significant bias i.e. mental accounting bias. It states that people partition their current and future assets into discrete, non-transferable parts. Individuals ascribe various amounts of utility to each asset group, according to the theory, which influences their consumption decisions and other behaviors.

It is a tendency of investors to categorize commodities into separate mental compartments. Investors are generally concerned with relevance of each investment decision and are unconcerned with the ramifications of their choices. They make a mental account for each investment and give a code to it. The utility offered by this investment option is the criterion that individuals consider in mental accounting (Thaler, 1985).

Age and Experience of Investors: - Experience level of investors also play a vital role while making investment decisions. Mental Accounting, Framing, Representativeness are more prevalent in investors who know about investing in stock markets rather than the new and inexperienced investors (Jay R Ritter,2003).

Tae-Young Pak, Swarn Chatterjee (2016), in their survey, analyzed that asset allocation is dependent upon age and portfolio choices of investors. With the age and experience of investors, financial sophistication declines, and risk aversion and overconfidence rise, which leads to their more extended stay in the equity market and reduction in cash reserves.

Gender of Investors and their Marital Status: - Genders is another significant demographic factor as per the research outcomes of behavioral studies. Female investors are less overconfident than male investors as suggested by studies of Barber and Odean in 2001; Bhandari and Deaves in 2006); Kumar and Goyal in 2016). According to Eagly and Carli, males are less susceptible to herd bias since they are easily swayed. Compared to married investors, unmarried investors had significantly higher degrees of over optimism, overconfidence, and loss aversion (Ates et al. 2016).

Education and Occupation of Investors: - Investors with a greater degree of education have a smaller impact on their investment decisions (Goo et al. 2010). According to Deaves (2006) overconfidence rises with higher education (2010). Investors with less education, according to Ates et al. (2016), are more prone to representational bias.

Overconfidence, optimism, and the disposition effect are more strongly associated to an investor's career than herding bias (Prasad et al. 2015).

Annual Income of Investors: - Investors with low-income had a stronger disposition impact as compared to high income investors (Dhar and Zhu, 2006). Similarly, Kumar and Goyal (2016) discovered that overconfidence bias differed significantly across individual investors of varied income levels. Investors with higher incomes are less prone to be overconfident than those with lower incomes.

According to a previous study of investors in the Delhi region, individuals in the high income category were competent and they traded in market more frequently and they behave in more overconfident manner than those with a lower annual income (Chandra, 2009).

Personality of Investors: -Personality of investors work as a moderating factor to form an association between available information and corresponding trading behaviour is moderated by investor personality factors. The main five personality qualities of investors were highlighted by Muhammad ZubairTauni and Zia-ur-RehmanRao (2017). Investors' decision-making is influenced by their consciousness, extraversion, and agreeableness. Investor openness has a negative moderating effect on information acquisition, which has a detrimental impact on investment decisions. Optimism and pessimism have an impact on investors' rational decision-making. Camelia Oprean and Critina Tanasescu (2014) found that optimistic investors have a greater impact on the Brazilian market than pessimistic investors in their study.

Conclusion

This paper is based on a literature review of

behavioral finance. It provides an insight into the existing literature on behavioral finance and focuses on recent studies based on behavioral biases influencing the investment decision-making process. It identified various factors that work as behavioral mediators in stock market investment and which may result in irrational investment decisions. This paper gives an insight into the role of the level of confidence of investors, age and experience of investors, personality traits of investors, and the part of heuristics and disposition effect
in investment decisions. This study may help a researcher to understand in brief various types of biases in behavioral finance and provides scope for future work. There is further scope to analyze the literature review based on individual biases and to study the significance of an individual behavioral bias in investment, which can further be enhanced by focusing on market anomalies existing in the stock market.

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