

Impact of Behavioral Biases on Investment Decisions: Theoretical and Research Gap

Review

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Abstract

Culture has This study contributes to creating a theoretical and research gap by identifying behavioural biases in investment decisions by reviewing the available literature in the field of behavioural finance-related biases. The analysis reveals that behavioural finance is a relatively new field of study in finance, and not much worthwhile work is being done. This paper assists in identifying a significant research gap and prevalent behavioural biases in the investment decision-making process. Moreover, this study helps researchers and academicians develop a reliable theoretical framework by thoroughly reviewing the literature on behavioural biases.

Keywords: Heuristic; Prospect bias; Market variables; Herding; Risk-perception; Fear, Greed

1. Introduction

The fundamental tenet of traditional economics and financial theories is that people are rational and consider all available information when making investment decisions. Nevertheless, regardless of investment discipline, people frequently make mistakes. The study of behavioural finance explains why people do not always act in the expected way and why the financial markets do not function as they should. Recent studies have found that the average investor makes decisions based more on emotion than logic. Most investors buy on the strength of excessive speculation and sell on the strength of fear. Psychological studies have shown that the joy of earning is less than the pain of losing money on an investment. Therefore, when selecting an investment, a person must use specific judging techniques and is influenced by psychological and emotional factors like fear and greed. Sahi (2017) claims that it is necessary to understand investors' financial behaviour and how it relates to their level of financial satisfaction.

Traditional investing theories contend that investors make rational decisions based on maximizing returns while minimizing risk or, to put it another way, what one should do. In contrast, behavioural finance theory explains what one does. Recent theories, however, cast doubt on these assertions and hypotheses. It is not always possible for the market and human intelligence to function effectively. The underlying premise of traditional investment models is

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that investors consistently make rational and reasonable decisions based on all relevant information. Scholarly research, however, has produced a wealth of data demonstrating investors' persistent bad judgement and illogical behaviour. According to Bihari et al. (2023); Dangol & Manandhar (2020); Parhi & Pal (2021); Parveen et al. (2021), investors who have been duped into thinking they are perfect, rational stock market investors exhibit this illogical behaviour. They show bias because their irrational behaviour distorts the market's perception of reality.

According to Bihari et al. (2023); Dhungana et al. (2022); Edeh et al. (2022); Jain et al. (2023); Kasoga & Tegambwage (2022); Tin & Hiii (2020), one of the primary challenges within this field of research is the significant impact of behavioural biases on investors' decision-making processes, leading to suboptimal choices and ultimately unfavourable investment outcomes. Several studies have consistently demonstrated that heuristic biases, prospect biases, herding behaviour, and market factors contribute to poor decision-making and reinforce preconceived notions. However, a notable gap in the existing literature is the lack of research exploring the mediating and moderating effects of factors such as emotions and perceptions in emerging countries such as Malaysia, Indonesia, and Thailand. This observation aligns with the findings of Bihari et al. (2023) and Jain et al. (2023). Furthermore, an additional aspect that requires further investigation is the unequal attention given to individual and institutional investors.

The research holds crucial importance for several reasons. Firstly, it sheds light on how these biases impact investment decisions, potentially leading to irrational choices and lower investment returns. Secondly, addressing these biases can contribute to market stability and efficiency, enhancing overall financial stability within the country. Thirdly, understanding cognitive biases helps investors become more aware of risks, enabling them to make better-informed investment decisions. Lastly, this study opens up new avenues for research, influencing future investment practices and policies by improving our understanding of investment behaviour in the emerging country's context.

According to G.C Selden (2012), 75% of psychological and 25% of financial factors affect the stock market. There is a concern in the modern world about whether or not the anticipated psychological bias manifests itself in making investment decisions. Table 1 summarises several latest studies that have reported direct and indirect associations between psychological bias and investment decision-making, as well as moderating and mediating factors, using various theoretical perspectives.

Author	Theoretical Foundation	Hypothesis	Nature of relationship
Sumit Dhakal, Rajendra Lamsal (2023)	Not specified.	Overconfidence and investment decision Herding and investment decision Representative and investment decision Anchoring and investment decision Loss aversion and investment decision Confirmation bias and investment decision	Direct relationship Direct relationship Direct relationship Direct relationship Direct relationship Direct relationship
Anshita Bihari, M. Dash, K. Muduli, Anil Kumar K, Eyob Mulat-weldemeskel, S. Luthra (2023)	Traditional theory Expected utility theory Behavioural finance theory Heuristic theory Prospect theory	Overconfidence and choice to invest Loss aversion and investment decision Regret aversion and investment decision The barnum effect and choice to invest	Direct relationship Direct relationship Direct relationship Direct relationship
Kiran Yadav, Rishi Chaudhary. (2022)	Behavioural Finance Theory	Heuristic and irrational investment decision Heuristic and risk perception Risk perception and irrational investment decision Heuristic, risk perception and irrational investment decision	Direct relationship Direct relationship Direct relationship Indirect relationship (Mediator)
Zeeshan Ahmed, Shahid Rasool, Qasim Saleem, Mubashir Ali Khan, Shamsa Kanwal. (2022)	Prospect Theory Risk Aversion Theor	Disposition Effect and investment decision Risk Perception, disposition and investment decision Herding Behaviour and investment decision Risk Perception, herding and investment decision Blue-chips and investment decision Risk Perception, blue-chips and investment decision	Direct relationship Indirect relationship (Mediator) Direct relationship Indirect relationship (Mediator) Direct relationship Indirect relationship (Mediator)
Bekweri Mark Edeh, Umar Abbas Ibrahim, faiza Maitala, Cross Ogohi Danie (2022)	Not specified	Heuristic and investment performance Prospect factors and investment performance Herd factors and investment performance Market factors and investment performance Age and type of investors and investment performance	Direct relationship Direct relationship Direct relationship Direct relationship Indirect relationship (Mediator)
Author	Theoretical Foundation	Hypothesis	Nature of relationship
Muhammad Nauman Sadiq, Syed Ali Raza Hamid, Raja Ased Azad Khan (2021)	Behavioural Finance Theory	Financial Efficacy and financial satisfaction Speculative Risk, financial efficacy and financial satisfaction Reliance on Expert and financial satisfaction Speculative Risk, reliance on expert and financial satisfaction Financial Socialisation and financial satisfaction Speculative Risk, financial socialisation and financial satisfaction	Direct relationship Indirect relationship (Mediator) Direct relationship Indirect relationship (Mediator) Direct relationship Indirect relationship (Mediator)
Imran Khan, Mustafa Afeef, Shahid Jan Kakakhel, Anjum Ihsan (2021)	Behavioural Finance Theory	Availability bias and investment decision Representativeness bias and investment decision Long term orientation, availability bias and investment decision Long term orientation, representativeness and investment decision	Direct relationship Direct relationship Indirect relationship (Moderator) Indirect relationship (Moderator)
Kaixin Wnagzhou, Mahnoor Khan, Sajjad Hussain, Muhammad Ishfaq, Rabia Farooqi (2021)	Prospect Theory Regret Theory Information Cascade Theory	Regret aversion and investment decision Information cascade and investment decision Regret aversion, risk perception and investment decision Information cascade, risk perception and investment decision Financial literacy, regret aversion and investment decision Financial literacy, information cascade and investment decision	Direct relationship Direct relationship Indirect relationship (Mediator) Indirect relationship (Mediator) Indirect relationship (Moderator) Indirect relationship (Moderator)
Ahmed Bouteska, Bouthein Regaieg. (2020)	Prospect Theory	Loss aversion effect on stock market performance and investment decision Overconfidence effect on stock market performance and investment decision	Direct relationship Direct relationship

Author	Theoretical Foundation	Hypothesis	Nature of relationship
Jeetendra Dangol, Rashmita Manandhar. (2020)	EMH Behavioural Finance Theory	Representativeness and irrational investment decision Availability and irrational investment decision Anchoring and irrational investment decision Overconfidence and irrational investment decision Internal locus, representativeness and investment decision Internal locus, availability and investment decision Internal locus, anchoring, adjustment bias and investment decision Internal locus, overconfidence and investment decision	Direct relationship Direct relationship Direct relationship Direct relationship Indirect relationship (Moderates) Indirect relationship (Moderates) Indirect relationship (Moderates) Indirect relationship (Moderates)
Muhammad Ishfaq, Mian Sajid Nazir, Muhammad Ali Jibran Qamar, Muhammas Usman (2020)	Prospect Theory	Heuristic and irrational decision-making Heuristic, risk perception and decision-making Extraversion, heuristic and risk perception Extraversion, heuristic and irrational decision-making	Direct relationship Indirect relationship (Mediator) Indirect relationship (Moderator) Indirect relationship (Moderator)
Muhammad Qasim, Rana Yassir Hussain, Intkhab Mehboob, Muhammad Arshad (2019)	Not stated	Herding and investment decision Overconfidence and investment decision	Direct relationship Direct relationship
Kanan Budhiraja, Dr. T.V. Raman, Gurendra Nath Bhardwaj. (2018)	Prospect Theory Behavioural Finance Theory	Heuristic and investment decision Prospect theory and investment decision	Desk research
Rupinder Kaur Gill & Rubeena Bajwa (2018)	Prospect theory Heuristic theory	Secondary data research	
Mrs. S. Devi, Dr. G.B. Karthikeyan (2018)	EMH Traditional Finance Theory Behavioural Finance Theory	Behavioural Finance and investment decision	Direct relationship

Table 1: Literature Review Summary

The most recent research has shown a strong connection between behavioural biases and investment decisions (Ahmed et al., 2022; Bihari et al., 2023; Bouteska & Regaieg, 2018; Budhiraja et al., 2018; Dangol & Manandhar, 2020; Devi & Karthikeyan, 2018; Dhakal & Lamsal, 2023; Edeh et al., 2022; Ishfaq et al., 2020; Khan et al., 2020; Qasim et al., 2019; Sadiq et al., 2022; Wangzhou et al., 2021; Yadav & Chaudhary, 2022). Several authors have noted that risk perception either partially or entirely mediates the relationship between behavioural biases and investment decisions (Ahmed et al., 2022; Ishfaq et al., 2020; Wangzhou et al., 2021; Yadav & Chaudhary, 2022). Numerous studies also emphasized the need for further research into the indirect impact of behavioural biases on investment choices (Dangol & Manandhar, 2020; Kasoga, 2021; Khan et al., 2020; Sadiq et al., 2022). Most of the studies in this field have relied on two fundamental theories - Prospect Theory and Behavioural Finance Theory. However, some studies have explored specific theories, such as the Information Cascade Theory, the Efficient Market Hypothesis (EMH), and the Human Behavioural Theory.

The Efficient Market Hypothesis (EMH), grounded in the optimality principle and frictionless markets, has been challenged by Behavioural Finance Theory, part of the new finance school of thought. This field leverages the most basic empirical findings and draws on disciplines such as psychology, sociology, and political science to demonstrate the flaws in EMH.

2 Literature Review

2.1 Behavioural Finance and Investment Review

When relevant prior literature was evaluated, factors that affected people's decision-making were primarily divided into economic factors and the notion that investors are rational. In the 1980s, the fundamental presumptions of traditional finance theory were questioned, and it was found that investors rarely act under these assumptions. Therefore, behavioural researchers recommend that finance theory incorporate observed human behaviour and cognitive biases in investment decision-making is crucial. According to Dhungana et al. (2022); Edeh et al. (2022); Jain et al. (2023); Wangzhou et al. (2021), behavioural finance significantly affects investment decisions.

The assumptions underlying traditional finance theory were also shown to be false by the global financial crisis of 2008. Many economists acknowledged that their erroneous assumptions were flawed due to the 2008 financial crisis. Ilbahar et al. (2022) state that the conventional economic approach provides insightful data. Still, something seems to be missing, particularly the aspect of behavioural biases that people frequently display.

A wealth of behavioural finance research supports the idea that people consistently think incorrectly. A few examples are overconfidence, focusing too much on recent experience, and having preferences that could cause distortion (Dhungana et al., 2022; Edeh et al., 2022; Jain et al., 2023; Zahera & Bansal, 2018). The influence of biases has led to the emergence of a new financial theory called "Behavioural Finance," which focuses on the psychology of economic decision-making. Behavioural finance holds that psychological biases can affect an investor's level of financial satisfaction by assisting them in making wise investment decisions and can be used to account for various anomalies in the financial markets. Numerous studies have provided new perspectives on specific areas of behavioural finance and how they influence investment behaviour (Dhakal & Lamsal, 2023; Garcia, 2021; Kartini & Nahda, 2021; Novianggie & Asandimitra, 2019; Paisarn et al., 2021; Quaicoe & Eleke-Aboagye, 2021; Singh et al., 2021).

2.2 Behavioural Biases and Investment Decision Review

Several financial studies have found that biases are deliberate errors in judgement that prevent someone from using their resources to the fullest extent possible. According to Kahneman & Riepe (1998), biases go against the principles of rational decision-making. As a result, biases affect judgement and lead investors to take risks they are unaware of, experience outcomes they were not expecting, are more likely to engage in irrational trading and frequently blame the results on themselves or others, and this has been reviewed as a problem that needs to be fixed (Jain et al., 2023; Kartini & Nahda, 2021; Saivasan & Lokhande, 2022; Singh et al., 2021).

According to Bihari et al. (2023), behavioural biases have always influenced investors' decision-making. Even though they are impossible for an investor to eliminate, there are some situations where avoiding behavioural biases is essential. Biases impact investors of all ages and levels of experience, according to Edeh et al. (2022). The impact of psychological factors on stock price anomalies and financial decision-making is reaffirmed by Parveen et al. (2021), who also explains why these decisions are incorrect. According to Sasirekha (2022), socioeconomic factors greatly

influence investors' investment strategies. Additionally, it demonstrates that investors' behaviour is biased and do not always make rational decisions when making investments.

Psychologists have found numerous cognitive and emotional biases when understanding human behaviour and decision-making.

Heuristic Bias

According to Daniel Kahneman, heuristics are mental shortcuts or rules of thumb that help people come to conclusions, resolve problems, and make decisions by substituting challenging questions for easier ones (Subash, 2012). When time is limited, it can also streamline the decision-making process by assessing probabilities and forecasting values (Tversky & Kahneman, 1974). Five heuristic factors have been the subject of previous research: gambler's fallacy, availability bias, overconfidence, anchoring, and representativeness.

The **availability heuristic** is a judgmental heuristic that enables people to judge the likelihood of events based on how quickly pertinent examples come to mind. People frequently rely on information that is easily accessible, which is referred to as the availability tendency (Tversky & Kahneman, 1974; Waweru et al., 2008).

Shukla et al. (2020) found that stock market participants tend to overreact to new information and place a higher value on already available public information, impacting security prices. Additionally, investors rely on advice from close friends and relatives and prefer domestic stocks over foreign stocks. Tin & Hiii (2020) highlighted that the reliance on the availability heuristic leads to biased decision-making, disregarding market indications. Mushinada (2020) emphasized that humans often rely on intuition and experience rather than gathering relevant information, leading to behavioural biases and financial losses in individual investors.

The **gambler's fallacy** is the misconception that the likelihood of a random event occurring in the future is influenced by how frequently earlier instances of the same event have occurred. This bias among investors makes it more likely that they will forecast price reversals, which significantly impacts the financial market (Gill & Bajwa, 2018).

"Anchoring" describes an investor deciding based on the first piece of information provided or "anchoring" on one piece of information. Anchoring causes underreaction to unexpected changes by pressuring investors to set a range for a stock's price or a company's earnings based on historical trends (Tin & Hiii, 2020). According to Gill & Bajwa (2018), anchoring is a pervasive bias that influences many financial and business decision-making processes.

Overconfidence manifests when a person thinks their skills and knowledge are more trustworthy than they are (De Bondt & Thaler, 1995; Hvide, 2002). Therefore, overconfident investors might disregard any cautionary signs and indulge in excessive trading in a single stock. Because these investors rely too much on their judgement and do not look at historical trends or projected future performance of a stock, the results of their investments may be distorted.

Parveen et al. (2021) discovered that overconfident investors at the Pakistan Stock Exchange rely on representative heuristics when making investment decisions, and this relationship is mediated by overconfidence. In contrast, Parhi & Pal (2021) found that overconfidence bias has minimal impact on high-net-worth (HNWIs) individuals' daily activities and decision-making processes. Trejos et al. (2019) determined that investors are more prone to being adversely affected by overconfidence rather than being influenced by upward biases based on their investigation into the effects of overconfidence and disposition effects.

Representative investors are those who conform to the stereotype. The heuristic representativeness bias occurs when similarities to other objects or situations distort people's perceptions of an outcome's likelihood. Therefore, representative investors do not speculate on long-term trends or consider the law of averages. Directions over the short term are given more weight.

Prospect Bias

Prospect bias, according to Waweru et al. (2008), identifies three mental states that influence investors' decision-making: regret aversion, loss aversion, and mental accounting.

Loss Aversion describes a situation in which investors take risks when losing money but take fewer risks when there is a chance of winning money. The discovery that a person's pain from loss is much greater than their pleasure from an equivalent gain is the foundation for loss aversion (Kahneman & Tversky, 1979).

Kumar et al. (2021) found that market bullishness is associated with higher levels of trader loss aversion compared to market bearishness, indicating that investors react differently to positive and negative changes in market value. Akinkoye & Bankole (2020) and Jain et al. (2023) concluded that investors' willingness to take risks in investment decisions is influenced by their ability to avoid loss aversion, which hinders them from investing in high-risk portfolios. Iram et al. (2021) discovered that loss aversion, mental accounting, and self-control significantly impact investment decisions. Jain et al. (2023) established a positive correlation between loss aversion and investment strategy selection. Bouteska & Regaieg (2018) revealed that stakeholders actively try to prevent significant losses from affecting their decisions, resulting in a higher frequency of selling winning shares than losing shares. Barberis & Huang (2015) found that investors exhibit loss aversion in the face of asset price fluctuations, and the degree of this aversion is influenced by past investment performance.

Regret Aversion is the desire of investors to avoid the pain of regret resulting from poor financial decisions. Pompian (2011) asserts that regret aversion is a cognitive phenomenon that frequently affects investors, causing them to hold onto losing positions for an excessive amount of time to delay admitting errors and realizing losses. According to (Albaity & Rahman, 2012), one can become risk-averse or risk-seeking based on regret.

Bihari et al. (2023) focused on identifying behavioural biases and their characteristics in the irrational decision-making of individual investors, finding that regret aversion emerged as the most influential predictor of investment decision-making. Quaicoe & Eleke-Aboagye (2021) explored the relationship between psychological factors and investment decisions among

investors on the Ghana Stock Exchange, highlighting the significant impact of regret aversion and the gambler's fallacy on investor choices. Malik et al. (2021) investigated the influence of behavioural biases on financial decisions in Pakistan's real estate market, revealing that the gambler's fallacy, regret aversion bias and overconfidence bias had a notable impact on real estate pricing. The findings indicate that regret aversion plays a significant role in shaping investors' decisions, leading to poor choices such as favouring recently performing stocks or following herd behaviour to avoid regret.

Mental accounting is the process of reasoning and evaluating one's financial activities, and investors can use mental accounting to distribute their portfolios into various separate accounts (Barberis & Huang, 2015). According to (Agnew, 2006), individual investors frequently succumb to cognitive biases like mental accounting bias.

Market variables

The idea put forth by EMH that behavioural biases have no impact on market movements has been disproved. Due to this, behavioural finance has emerged. Its proponents hold that bias will exist and impact the market. Biases can cause several problems in the market, including exaggerated or underexaggerated reactions to any price-related news, irrational preferences for "trending" stocks, extrapolating future trends based on past trends, and ignoring data about stock price fundamentals (Edeh et al., 2022; Jain et al., 2019, 2023). Therefore, it is inappropriate to ignore market variables, seen as an external factor from behavioural factors, when looking at factors influencing investment decisions (Luong & Ha, 2011; Waweru et al., 2008).

Jain et al. (2023) highlighted that overconfident investors rely more on their knowledge or instincts than on accurately assessing risks, leading to significant losses. Jain et al. (2019) concluded that excessive trading is standard among overconfident investors who heavily rely on the quality of their market and stock information. Caparrelli et al. (2004) suggested that investors are prone to the herding effect, following the crowd during price movements. The study emphasizes the importance of considering market dynamics as they have distinct effects on behavioural and rational investors. This perspective aligns with the findings of Edeh et al. (2022); Luong & Ha (2011); Waweru et al. (2008), who consider market factors as psychological influences on the decision-making of both individual and institutional investors.

Herding

Herding is a mutual imitation that causes the activity to converge (Hirshleifer & Hong Teoh, 2003). Herding is the propensity to act in the same way as others in the financial market without using one's discretion and to base one's stock purchase or sale decisions on the opinions of the majority (Kengatharan & Kengatharan, 2014). Herding bias is more prevalent among individual investors and can result in financial bubbles and crashes (Baker et al., 2017; Goodfellow et al., 2009; Kallinterakis et al., 2010; Waweru et al., 2008). Herding can lead to price deviation from its fundamental value because it depends more heavily on collective information, which could harm many promising investment opportunities.

Chauhan et al. (2020) found that herd bias is not a priced risk factor in large-cap stocks due to lower trading volume in small-cap stocks. Dewan & Dharni (2019) concluded that herding bias

exists in cryptocurrencies, leading to deviations in asset prices from their intrinsic value. Indārs et al. (2019) discovered that individual investors do not exhibit herding behaviour on the Moscow Exchange, but non-fundamental factors drive herding during bearish market days. Satish & Padmasree (2018) observed the absence of herding behavior among investors before, during, and after the financial crisis. Qasim et al. (2019) found that herding behavior significantly influences investment decisions in Pakistan's underdeveloped and inefficient markets.

Fear and Greed

According to Bouteska & Regaieg (2018); Gupta & Shrivastava (2022); Iram et al. (2021), the two primary emotions that trigger overreactions—fear and greed—make the stock markets volatile, unpredictable, and prone to illogical market behaviour. Fear is said to alter investors' evaluations of alternative options. On the other hand, greed is an addiction that drives up stock prices and compulsive spending, resulting in a financial catastrophe (Chun An Li & Jia Chi Wang, 2013). Due to their ability to affect investors' behavioural biases, these two emotions are the key market-moving factors that can significantly harm their portfolios, the stock market's stability, and even the economy's prosperity. This statement is supported by (Bouteska & Regaieg, 2018; De Bondt & Thaler, 1985; Gupta & Shrivastava, 2022; Kaestner, 2006; Lo, 2011).

Risk perception

Contrarily, the risk falls under the category of perception, which is a mental process involving the senses (such as seeing, hearing, and feeling) that are influenced by information that affects decision-making (Antonides & van der Sar, 1990; Forlani & Mullins, 2000; Hoffmann et al., 2015; Nguyen et al., 2016; Weber et al., 2005; Wulandari & Iramani, 2014). According to M. Simon et al. (2000), a person's perception of risk decreases in proportion to the degree of bias in their behaviour. Deb & Singh (2018) claims that investment decisions are hampered by this dynamic perception of risk, which can change depending on the circumstances.

2.3 Theoretical and research gap

A closer examination of the literature reveals several gaps and weaknesses in this field of research. Financial analysts have turned to the cornerstones of traditional finance theories like the Arbitrage Pricing Process, Capital Asset Pricing Model, Efficient Market Hypothesis, Expected Utility Theory, and Modern Portfolio Theory to guide investment decisions. The traditional notion of rationality in investment decision-making presupposes that investors are rational decision-makers and is advanced and supported by evidence from these theories. However, there are still many unanswered questions, such as why investors' decisions are not always supported by logic and reasons, why emotional processes cause investors to make decisions that are not logically sound, what triggers investors to make poor judgments, and how decision-making varies from person to person (Ricciardi & Rice, 2014).

Following this, several studies were carried out, and the findings contradicted the Expected Utility Theory and the Efficient Market Hypothesis. Due to a lack of adequate justification for various investors' irrational decisions, behavioural finance theories such as Prospect Theory and Heuristic Theory replaced the traditional understanding of these two theories. As a result, behavioural finance explained that the influence of behavioural biases can be used to describe the

irrationality of investment decision-making. Thus, behavioural finance theories have been used as the guiding theory in numerous empirical studies of behavioural biases. However, there is still a lack of research connecting the results to the theory. There has not been much research into how the current findings support or refute the theory.

Recent studies have compiled several research findings on behavioural biases (Ahmed et al., 2022; Bouteska & Regaieg, 2018; Devi & Karthikeyan, 2018; Sadiq et al., 2022; Sahi, 2017; Yadav & Chaudhary, 2022). However, there is still a need for a thorough review that addresses all behavioural biases, despite these existing reviews offering insightful information in this area. Humans are prone to emotions and perceptions in addition to biases. Therefore, focusing solely on the direct relationship and mediating function of risk perception will not result in a comprehensive understanding of the psychology of human investment decision-making. It is also essential to consider other feelings, such as fear and greed.

Additionally, most of the research focuses on the mediating rather than the moderating function. Thus, a deeper understanding of the effects of behavioural biases on investment decisions would be provided by knowing how emotions and perception's mediating and moderating functions influence those decisions. Furthermore, more research is required in this field of study, especially in light of the uncertainty surrounding COVID-19, which has changed everyone's opinions and feelings regarding investments. Evaluating the outcomes compared to those obtained before the pandemic is crucial.

Emerging countries like Malaysia, Indonesia and Thailand, for example, are notable for having a collectivist culture with strong family and community ties, where investors may be less risk-averse, which is another gap that has been identified. People have been said to be more vulnerable to behavioural biases in collectivist societies (Kim & Nofsinger, 2008). In a collectivist culture, peer pressure and social pressure have a more significant impact on investor decision-making than processing based on personal information does. Very few studies have been done on this topic in Malaysia, Indonesia and Thailand. Mostly the studies concentrated in Western nations, Pakistan, or India.

In previous studies, institutional investors in the public and private sectors were also primarily disregarded. When individual and institutional investors are compared, the effects of behavioural biases on investors will become more evident.

Another problem that has been discovered is the evidence gap. Although many of the same biases have been used as the independent variables in most studies, the results are unfortunately inconsistent. Reflections on why there is a different outcome are still lacking.

3 Material And Methods

The papers on behavioural biases and their impact on investment decisions have been examined using a thorough literature review methodology. The study has identified the appropriate search terms by analyzing the frequently used keywords from the peer-reviewed literature on behavioural biases. Afterwards, the keywords are divided into two groups, as Chen et al. (2018) suggested. The first group of keywords includes the terms "overconfidence," "herding," "heuristic," "risk perception," "fear," "availability bias," "greed," "loss aversion," and "regret

aversion," as well as the phrases "anchoring," "representativeness," "gambler's fallacy," "market variables," "prospect variables," and "mental accounting." The second set of keywords includes terms that are concerned with decision-making, such as "institutional investors decision making," "individual investors decision making," "investment decision," "financial decision making," and "investment." The author created the search queries by combining each search term from the first category with each search term from the second category using Google Scholar, Emerald, JSTOR, INSTEAD, ELSEVIER, Science Direct, and other available operators to find the relevant literature. The search was conducted (on January 6, 2023) all at once to prevent any potential bias brought on by the ongoing updating of the Scopus database instead of in stages. The journal is then meticulously read to gain more knowledge. For this study's identification and paper selection, the following criteria were applied:

- A paper that has been published in various journals and is accessible online.
- English-published and fully contended paper.
- Various types include working papers, conference papers, theoretical papers, analytical papers, literature reviews, and case studies.
- A paper with the keyword in the title and abstract.

4 Conclusion

Although this thorough literature review is insufficient to examine all aspects of behavioural biases, a few identified biases, emotions, and perceptions have been reviewed. Prior research has demonstrated that behavioural factors do have an impact on investors' decisions. The study has revealed the areas of knowledge lacking in this field. Identifying them in the presence of human emotions and perceptions is now crucial, as is measuring their impact on both the individual and institutional levels. The degree of deviation depends on the level of expertise in psychology and finance as well as on knowledge, skill, and experience in those fields. Investors will be better able to make decisions about their investments. They will be more likely to adhere to the market portfolio that Eugene Francis Fama described in the efficient market hypothesis of the 1960s if they are aware of these biases at the outset of the investment process. Furthermore, it has been proposed that understanding investor behaviour may help to explain stock market anomalies.

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