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Influence of Heuristic Techniques and Biases in Investment Decision-Making: A Conceptual Analysis and Directions for Future Research

Mensah Morris Ayaa
Valley View University, Ghana

Williams Kwasi Peprah
Andrews University, peprah@andrews.edu

Maxwell Okpoti Mensah
Valley View University, Ghana, mmensah@st.vvu.edu.gh

Adu Bismark Owusu-Sekyere
Valley View University, Ghana

Bamfo Daniel
Valley View University, Ghana

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School of Business, Valley View University, Oyibi Accra, Ghana
Correspondence Author's Email: morrismensah320@gmail.com

Abstract
Purpose: The primary purpose of the study was to examine the roles of heuristic techniques and cognitive biases in Investment decision making and suggest directions for future research. Design/Methodology/Approach: The study adopted the literature review method to solicit an understanding of the heuristics and biases central to behavioural finance and influence investment decision-making.
Findings: The paper provides conceptual insights into the influence of heuristic techniques and cognitive biases in investment decision-making. Results from the conceptual analysis show that in recent times, investors in their bid to minimise losses and maximize gains employ a range of heuristics which often lead to systematic errors in judgment.
Practical Implications: The paper encourages investors to prioritise financial literacy as a prerequisite to making investment decisions in the capital market and minimise the over-reliance on heuristic techniques which often lead to biases.
Originality/Value: The current study is the first to focus on the influence of both heuristic techniques and cognitive biases in investment decision-making together with suggested future research directions. This article enhances understanding of the behavioural finance approach to investment decision-making.
Keywords: Heuristic Techniques, Cognitive Biases, Investment Decision-Making, Traditional Finance, Behavioural Finance.

Introduction

Traditional finance follows the assumption of how investors and markets should behave. It emphasises that investors are modeled as rational, engage in frictionless markets, and make rational decisions all the time. Investors employ standard finance models and theories to measure risk and expected returns when making investment decisions (Nofsinger, 2017; Borsboom et al., 2020; Metawa et al., 2019). Recent research in conventional finance indicates that individual investors desire to make logical investment decisions (Jain et al., 2019). It is established that investors utilize a variety of basic finance models and theories to estimate risk and return when making investment decisions (Rasheed et al., 2018).

On the contrary, in reality, Investors are assumed to behave irrationally in the market: trade excessively, acquire stocks without considering the underlying value, purchase stocks following influence from family and friends, and make judgments on historical performance. In addition, investors usually resolve their decision-making process using behavioural heuristics that might give rise to systematic errors in judgments and induce good investment choices devoid of utility maximization (Bisati et al., 2021). According to Raheja et al (2019); Triani and Tarmidi (2019), Individuals make diverse investment decisions and choices. Some of these choices are significant, while others are of little significance. On the other hand, some decisions are trivial, while others are complicated and involve a multi-step decision-making procedure. Individuals are referred to as making decisions based on their experience and intuition instead of obtaining facts, which would enable them to make better decisions.

In contrast, behavioural finance uses insights from science and business disciplines to understand investors' decisions (Zahera & Bansal, 2019). Psychologists and other social scientists have been studying human behavior for a long time and have accumulated considerable evidence on how individuals make decisions. Areiqat et al (2019) argue that behavioual finance is concerned with the study of individual investor behavior and attempts to explain why investors do not make rational decisions and have unpleasant consequences of investment decisions and poor levels of investors' performance. It explores the capital market and gives insight into what causes market anomalies, speculative tendencies, and extreme scenarios of market crashes (Hunguru et al., 2020). However, researchers have argued that every individual has unavoidable psychological biases that prevent them from making rational decisions and consequences investment decision-making. These biases, according to Chhapra et al (2020), are the main reason for irrationality in decision-making and poor investment performance. In support, Zahera and Bansal (2018) stressed that heuristics and cognitive biases have answered and explained some of the reasons for the behavioral changes in the investors that deviate from rational decision-making. Riaz et al (2020) have explained that the principal cause for investment choice complexity is the presence of many participants who exhibit a range of emotions and behavioral patterns when making investments.

Further, investments can be beneficial if they are undertaken on a timely basis and in suitable asset classes (Suhadak et al., 2019). Multiple factors: cognitive and emotional weaknesses, bounded rationality, intuitive reasoning, heuristics, and financial literacy influence the process of making the suitable investment decision, making it difficult for an investor to have a thorough assessment of the risks and returns available in the stock market in order to be successful. As a result, these issues influence individual investors differently. However, investors are compelled to gain as much knowledge as possible to mitigate the risk of uninformed investment decisions. According to Shah et al (2018), various factors that lead to different outcomes influence the investment decision-making process. As a result, investors experience severe complexities such as risk, uncertainty, and decision pressure in the decision making process. Notwithstanding, the decision-making process appears to be easy when all of the complex aspects are observed by financial advisors (Zahera & Bansal, 2018). According to Qasim et al (2016), investors' decisions based on incorrect or misleading data, or data that has not been thoroughly reviewed, may result in inaccurate outcomes.

On the other hand, globalization and technology improvements have facilitated regular investors' access to the financial market. As a result, investors employ several cognitive biases to reduce complexities and expedite investment decisions in recent times. Proponents of modern portfolio theory argue that markets run efficiently because they are characterized by

many rational wealth maximizers attempting to maximize their profits in a completely competitive market. The Capital Asset Pricing Model (CAPM) and the Efficient Market Hypothesis are the primary classical financial theories that support this position (EMH). Conversely, proponents of the prospect and heuristic theories give credence to the investors' irrationality in decision-making. Few papers have discussed the joint influence of heuristic techniques and cognitive biases in investment decision-making. This article attempts to conceptually explore and demonstrate how heuristic techniques and cognitive biases relate and their roles in influencing investment decision-making through a proposed conceptual model. We therefor argue that prioritising financial literacy as a prerequisite to making investment decisions will help minimise the over-reliance of heuristics among investors. This paper therefore highlights the review of literature on the concept of heuristic techniques, cognitive biases and investment decision-making. The rest of the paper is structured as follows: underpinning theories in investment decision-making, a narrative review of heuristic technique and cognitive biases, conclusions, and suggestions for future research.

Underpinning Theories
Over the last half-century, two distinct theories have emerged in the history of finance: traditional finance theory and behavioral finance theory (Causi, 2017). These theories may be useful for decision-making in the face of uncertainty. Notably, these two financial revolutions originated from distinct individuals and periods, and as such, it is easy to conclude that both of these approaches are incompatible. Nonetheless, using these views necessitates the employment of both approaches, as they complement one another in decision-making (Zahera and Bansal, 2018).

Traditional Finance Approach
Diverse theories and policies have evolved under traditional finance since 1950. These theories include but are not limited to efficient market hypothesis; portfolio theory; capital asset pricing theory; agency theory; arbitrage pricing theory; capital budgeting policy; capital structure policy; dividend policy, and others. According to Koseoglu (2019) traditional finance theories are based on the notion that market and market agents are efficient and systematic. In support, Jain et al (2019) explained that investors are rational and consider all the available information in their decision-making process. As a result, investment markets are efficient because the available information is reflected in the security prices.

Traditional finance theory hinges on two fundamental economic theories: classical decision theory and expected utility theory. The classical decision theory emphasizes that decisions should be rational and optimal; hence, the theory adopts an optimizing strategy that seeks the greatest feasible alternative to optimize goal attainment (Małecka, 2020). It is rooted in the assumption that investors are objective, possess complete information, and carefully analyze all feasible alternatives and their associated consequences before selecting the ideal option (Lejarraga and Pindard-Lejarraga, 2020). Conversely, the expected utility theory developed by Neumann and Morgenstern (1947) provides the foundation of standard economic models of how people make choices. The expected utility theory assumes that individuals have stable and coherent preferences; they know what they want and their preference for a particular option does not depend on the context (Schildberg-Horisch, 2018) The emphasis on rationality in traditional finance is well supported by Fama (1970) in his article entitled, Efficient Capital Market. He asserts that it is impossible to beat the market as financial markets are efficient regarding the distribution of information. Further, his efficient

market hypotheses affirm that asset prices reflect all available information. Proponents of his theory emphasised that active traders are not likely to outsmart the market, thereby producing superior returns; on the contrary, the Efficient Market hypothesis has been criticized in recent times due to the absence of a more realistic definition of market efficiency, the application of implausible assumptions, and investor conduct that does not adhere to the EMH assumption of rationality (Delcey, 2019).

Furthermore, Harry Markowitz (1952) pioneered the portfolio selection approach. He assumes that investors are risk-averse and can only choose assets with low risk and a marginal rate of return. It describes constructing an optimal portfolio by choosing securities with the lowest possible risk and the highest possible return (Bakar and Rosbi, 2019). Markowitz's portfolio theory facilitates portfolio design in practice and ultimately results in developing the Capital Asset Pricing Model. Sharpe (1963, 1964); Lintner (1964) were pioneers of CAPM (1965). CAPM is a theoretical framework for the valuation of individual securities (Kumar and Shahid, 2021). It aids in calculating the optimal rate of return. According to this theory, investors must be rewarded for the time value of money and market-specific risk.

Ross (1979) developed the Arbitrage Pricing Theory (APT) concerned with investing strategy. This theory was intended to overcome several of CAPM's shortcomings. According to this theory irrational traders create an attractive opportunity by creating mispriced securities (Ogunlusi and Obademi, 2021). The rational traders will seize this chance, and the irrational traders' mispricing will be remedied. The arbitrage assumes that when investors strive to capitalize on extra profit opportunities that may develop due to a deviation from the fundamental value, the activities of certain speculators raise demand for it. Increased demand will increase prices, resulting in price adjustments, decreasing the chance for excess profit. As a result, securities prices appropriately represent available information, enabling effective capital allocation (David et al., 2020).

These views were accepted and regarded as the final explanation for investor and market behavior for an extended period. However, experts have recently observed that conventional theories are violated under actual market conditions, and investors also confront numerous challenges when trading in the stock market. Numerous investigations have established that these theories are oversimplified. As a result, behavioral finance emerged, which incorporates investors' irrationalities and biases.

Behavioural Finance Approach
Behavioral finance is a relatively new school of thought that studies the impact of psychology on financial practitioners' behaviour and the stock market's subsequent impact. It is defined by Valaskova et al (2019) as financial market theory based on behavior. This subject is applied to the reality that people behave rationally only within certain constraints. According to Miaszewicz (2019), it is the integration of classical economics and financial theories in studies of psychology and decision making. Behavioral finance could be explained from macro and micro perspective (Aigbovo and Ilaboya, 2019). According to Gil and Bajwa (2018) anomalies of the efficient market hypothesis that models how people's behavior could be explained are revealed and described in macro behavioral finance. On the other hand, micro behavioral finance examines individual investors' behavior and deviations from stern-mathematical models, distinguishing them from strictly rational people (Omlekci & Zer, 2018).

Jaiyeoba and Haron (2016) avered that several investors destroy their portfolios by falling into predictable negative patterns due to under-diversification, familial favoring, frequent trading, and a fear of realizing losses. Behavioral finance's primary objective was to

understand how people make financial decisions and behave when doing so (Costa et al., 2019). Psychologists have posited that the assumption that individuals are rational is limited for quite some time since they frequently act irrationally and make frequent predicting errors. Smith (1759); Seldon (1912); Simon (1955) were among notable scholars who emphasized the significance of psychology in economic behavior, but their consensus diminished over the next century.

Tversky and Kahneman (1973), the fathers of behavioral finance, established the availability heuristic, a judging heuristic in which a person assesses the likelihood of events based on the ease with which relevant examples come to mind. The availability heuristic is used too often, resulting in systematic biases. Representatives, availability, anchoring, and adjustment are three heuristics used by Tversky and Kahnemann (1974) while making decisions in the face of ambiguity. Daniel Kahneman and Amos Tversky, who established the prospect theory and the Heuristic approach, are credited for groundbreaking work in behavioral finance.

Heuristic Technique
The term heuristic, also known as heuristic technique, is of Greek origin and means "serving to find out or discover. Various scholars have cited multiple definitions of heuristic techniques. According to Ahmad (2020), heuristic techniques guide information search and modify the depiction of a problem to facilitate solutions. In support, Skagerlund et al (2020) assert that heuristic techniques inhibit one from discovering correct solutions to problems posit by the probability theory. It evaluates a target attribute based on another property that comes to mind more readily (Nadurak, 2020)

According to Ahmad (2021), all techniques of heuristics are a form of effort reduction. As a result, it analyzes only a few cues, reduces the effort to recover cue values, and integrates less information or shortcuts. On the other hand, these techniques are information-gathering tactics that alter the representation of an issue to make it easier to solve (Ahmad & Shah, 2020). Studies on heuristics primarily deal with the rule of thumb and deviations from a rational computation. As a result, heuristic techniques have become synonymous with irrationality and inevitable cognitive illusions (Ahmad, 2020).

According to Shah et al (2018) heuristic techniques tend to ignore some of the information to make decisions more quickly and efficiently than sophisticated methods. Business actors and financial practitioners frequently use heuristic techniques to simplify the decision-making process; these strategies are typically effective when decision-making is limited in time and information, but they can also lead to systematic errors in judgment (Abatecola et al., 2018). The function of heuristics in investment decision-making and performance, market efficiency, and management activities have been studied by several academics. The following section describes the techniques in heuristics which are central in behavioral finance and influence investing decision-making.

3.1 Representativeness
The term "representativeness" refers to a person's tendency to judge an event's likelihood based on how closely it resembles something else, given the fact that probabilities are used (Konteos et al., 2018). According to Raue and Scholl (2018), representativeness involves evaluating an event's attributes and contrasting them to past events. It leads to the assumption that the event is more likely to occur, even though it may or may not. On the other hand, Blek et al. (2018) stressed that using interchangeable perceptions of probability and similarity in representativeness can result in significant errors, as multiple causes impact

similarity judgments than probability judgments. Nonetheless, representativeness as a heuristic technique is not without significance since it can yield more accurate responses than sophisticated techniques.

3.2 Anchoring

Anchoring was first introduced by (Tversky and Kahneman, 1974). It is a technique for estimating the likelihood of uncertain occurrences by examining a primary value or initial position and adjusting it until it suits an ultimate decision (Hütter and Fiedler2019). Parveen and Siddiqui (2018) propose that investors rely on anchors (initial reference point) while making investment decisions. As a result, individuals exposed to a more vital anchor make insufficient downward adjustments and vice versa. Anchoring explains why investors place such a premium on the initial purchase price when selling or assessing stocks in the stock market. On the other hand, Cao et al (2021) assert that anchoring significantly affects investment decision-making.

3.3 Availability

Availability heuristic refers to the tendency to make investment decisions based on information that comes to mind fast and easily (Tversky & Kahneman, 1974). A decision-maker chooses based on readily available knowledge rather than considering alternative options. According to Hadbaa and Boutti (2019), individuals associate the likelihood of a decision being realized to the number of times a similar decision has occurred. Investors rely on easily available information to inform their judgments; as a result, information pointing to unusual occurrences is given less weight. Hunguru et al (2020) claim that the presence of availability results in overreaction, with investors believing that what everyone else is doing must be correct or beneficial. In support, Ahmed and Noreen (2021) state that investors prefer domestic stocks over international stocks and rely on information from close friends and relatives when making investment decisions.

Investment Decision-making

Individual investment decisions concern acquiring small amounts of securities for one's account (Ouimet & Tate, 2020). Individuals who invest in equities make this determination. According to Rustagi (2021), investment decision-making is how an investor decides whether to invest in financial or tangible assets. Aren and Hamamci (2020) suggest that investment decisions are subjective. As a result, these decisions are influenced by factors such as financial literacy, risk tolerance, and investment type. A poor investment decision may have financial and emotional consequences (Zahera & Bansal, 2018). Rashid et al (2021) emphasize that individuals who make investment decisions are influenced by psychological characteristics such as overconfidence, herd behavior, risk appetite, and optimism versus pessimism. These psychological factors affect investments and the desired outcomes (Nofsinger, 2017).

Cognitive Biases

A cognitive bias is a systematic disparity between the "right" response to a judging task, as defined by a formal normative rule, and the decision maker's actual response to the task (Montibeller & Winterfeldt, 2018). It tends to base decisions on a single characteristic or piece of information. According to Zhang et al (2020), cognitive biases may influence decision-making. As such, they are the outcomes of the use of heuristic techniques. According to Shah et al (2018), cognitive biases are personal beliefs that assist individuals in making tough

decisions. They are mental shortcuts that decision-makers utilize to make quick decisions in complex and challenging situations. Bellé et al. (2018) assert that systemic errors develop as a result of cognitive biases, which result in unfavorable results. Five common biases that creep into investment-decision making are identified.

5.1 Overconfidence Bias
Overconfidence is a cognitive bias defined as excessive confidence in intuitive reasoning, judgment, and cognitive ability (Baker et al., 2017). Confident investors are known to trade more frequently and have negative anomalous returns in the stock market. According to Barno (2020), when investors believe they have more knowledge, it indicates overconfidence. Dangol and Manandhar (2020) identified three attributes of persons who exhibit overconfidence bias: overestimation, over-placement, and over-precision. Earlier research in this area has demonstrated how the overconfidence bias affects rational decision-making. According to Agarwal (2020), investors with discounted brokerage accounts develop excessive confidence and indulge in excessive trading

5.2 Anchoring Bias
Anchoring was introduced by Tversky and Kahnemann (1981). It relates to the process of generating estimates of how likely uncertain occurrences are by viwing a primary value and varying it until it fits an ultimate decision (Rossiter, 2019). According to Kartini and Nahda (2021) anchoring bias tells us about human beings' tendency to rely excessively on the first piece of information provided when making decisions. Successive decisions are anchored around some previous information. Jain (2019) have argued that anchoring tends to consider logically irrelevant price level of the stock as a base while taking their decision. As a result, investors who suffer from this bias have the tendency of fixing the price for buying and selling of shares on past information (Trejos et al., 2019)

5.3 Disposition Effect
The disposition effect describes an investor's propensity to sell equities early when the price rises and hold them longer when the price falls (Gärling et al., 2017). Sanu (2017) asserts that people avoid activities that result in regret and prefer actions that result in pride. Chen (2007) argued that selling a stock whose price has improved (winning) justifies the initial decision to purchase the stock and fosters pride. On the other side, selling the stock at a loss (loser) reveals that the initial investment selection was inadequate, eliciting regret (Hermann et al., 2019). Zahera and Bansal (2019) have shown that investors' tendency to avoid regret and seek pride predisposes them to sell winnings too soon and ride out losses too long. Zahera and Bansal (2019) describe the disposition effect as consisting of four aspects: prospect theory, mental accounting, seeking pride and avoiding regret, and self-control. The disposition effect is one of the consequences of applying Kahneman and Tversky's prospect theory to investment decision-making.

5.4 Representativeness Bias
Representativeness bias is a cognitive bias characterized as a mental shortcut in which decisions are made based on mental stereotypes (Gärling et al., 2017). According to Fitri and Cahyaningdyah (2021), representativeness bias is motivated by actual and known experiences. These investors' success is likely to be repeated in the future. Furthermore, Due to representativeness bias, investors disregard sample and mean reversion (Khan et al., 2021).

Representativeness bias in investment decision-making has several consequences. For instance, investors may mistakenly connect a company's positive traits to a good investment. This stereotype would lead to the cognitive errors of believing that all of a company's positive attributes make it a smart investment. Additionally, investors may regard recent historical results to indicate future returns (Choi & Robertson, 2020).

5.5 Narrow Framing
Narrow framing describes an investor's tendency to evaluate a risky prospect in isolation rather than tandem with another risk (Fang, 2021). According to Guo and He (2021), investors reject minor independent gambles with a positive expected return due to their narrow framing. Additionally, existing psychological research suggests that investors regard each decision as distinct, frequently isolating the current choice from their previous ones. In other words, investors frequently engage in narrow framing, ignoring the interaction of multiple decisions. For instance, when investors employ simple heuristics and make intuitive judgments, they are more likely to adopt the most readily available frame, which is narrow and suboptimal (Shin et al., 2019).

Role of Heuristic Technique in Investment Decision-making
Investors often tend to make mistakes while making their investment decisions. According to heuristics theory decision makers use these heuristic techniques to avoid the risk of losses in uncertain situations. These techniques are rule of thumb which decision-makers use in complex and uncertain situations to make decisions easily by reducing the complexities of measuring probabilities and forecasting values to simpler judgements. Multiple studies have found evidence supporting the contributions of heuristic techniques in investment decision making (Shah et al., 2018; ul Abdin et al., 2017; Guercini & Milanesi, 2020; Khan, 2017; Saeed, 2019).

Shah et al. (2018) conducted a study to clarify the mechanism by which heuristic influences the investment decisions among 143 individual investors actively trading on the Pakistan stock exchange. Findings shows that heuristic techniques (overconfidence, representativeness, availability and anchoring) have a markedly negative impact on investment decisions made by individual investors trading on the PSX market.

The study by ul Abdin et al (2017) to examine the impact of heuristic techniques on investment decision and performance among 324 investors in Pakistan, suggests that availability and representativeness are the strongest predictors of investment decision making and performance.

On the other hand, in a similar study conducted by Saeed (2019) to examine the relationship between heuristic techniques and investment decision among 300 investors operating in the cities of Islamabad, findings suggest that mental accounting and price anchoring play important role in investor decision making.

Extant evidence have shown that investors do not only act rationally in the market as suggested by the traditional finance theories. However, investors in their bid to minimize losses and maximize gains employ a range of techniques (heuristics) that inform their choices and decisions in the market. These techniques when not carefully analysed and assessed could lead to systematic errors in judgement among investors in the capital market. Therefore we posit the proposition below:

P1: Which of the following heuristic techniques predicts Investment decision making?

    a. Representativeness
    b. Availability
    c. Anchoring

Role of Cognitive Biases in Investment Decision-making
The concept of cognitive biases was first introduced by Kahneman and Tversky (1972) as errors in judgements, some of which are related to memory and others to the problem. In explaining investor's decisions many researchers have focused on cognitive biases given the traditional thinking that everyone is rational and uses all available information (Ishfaq et al., 2020; Chhapra et al., 2018; Jain et al., 2019; Subramaniam & Velnampy, 2017; Abul, 2019).

Ishfaq et al (2020) conducted a study to investigate the direct and indirect effects of cognitive biases on investors' irrational behavior among 247 investors in various brokerage houses in Pakistan. Findings show that cognitive biases positively affect investors' irrational decision-making both directly and indirectly.

In support, the study by Chhapra et al (2018) to assess the role of behavioural biases in financial decision making among 250 investors of the Pakistan stock exchange shows that cognitive bias have significant positive impact on financial investment decision. As a result, much variation in investment decision making is due to cognitive bias.

In a similar study to examine the role of behavioural factors in the investment decisions among 180 household investors in the Northern Province of Srilanka, Subramaniam and Velnampy (2017)) show through their findings that representativeness bias, overconfidence bias, and availability influene the investment decisions of household investors.

Jain et al (2019) ranked the behavioural biases influencing the investment decision making of individual equity investors from the state of Punjab, India. Findings reveal that the three most influential criteria were herding bias, loss aversion and overconfidence bias.

On the contrary, a study by Abu (2019) to investigate the effects of psychological factors on the investment behavior among 398 investors on the Kuwait stock exchange reveal that no evidence of overconfidence behaviour's effect was found on investors' decisions.

Individual investors employ heuristic techniques to reduce the complexities in their decision making. Notwithstanding, these techniques eventually lead to biases on the path of investors. Multiple research findings have shown that these biases in the long run reduce the quality of decisions that investors make in the capital market. On the basis of this, we therefor posit the following propositions:

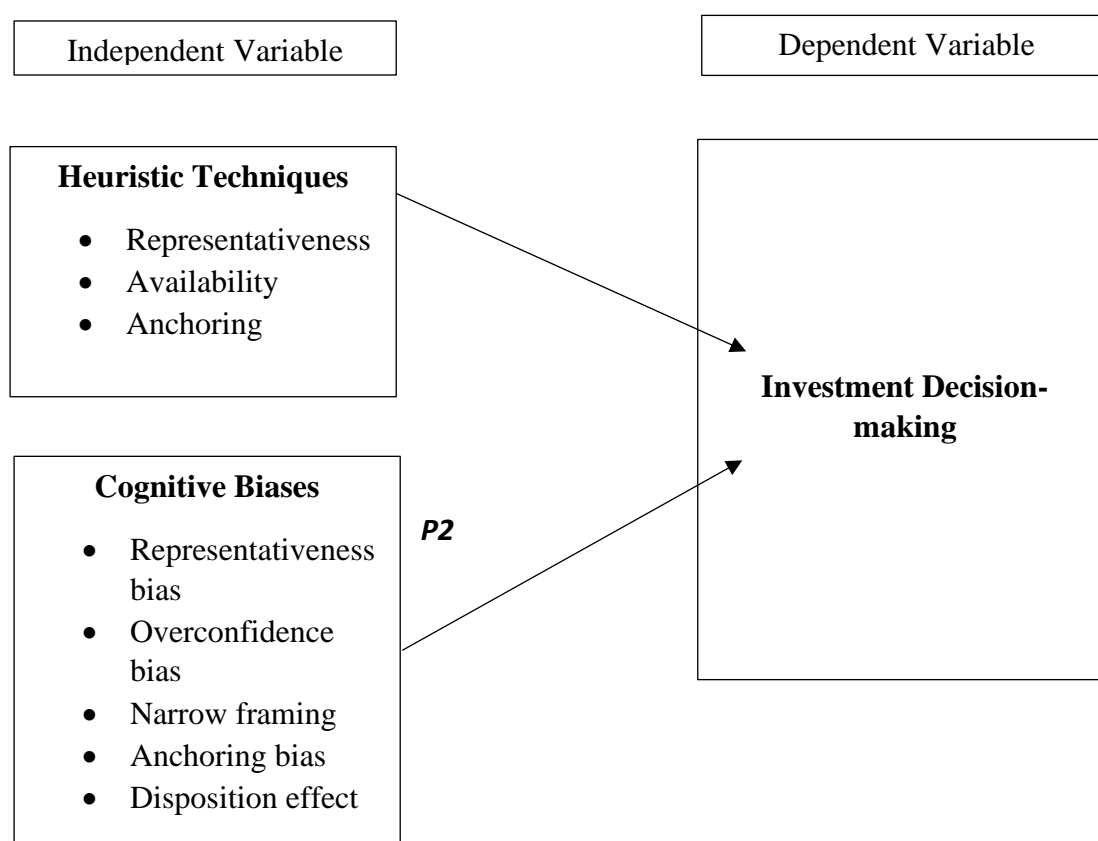*P2*: Which of the following cognitive biases predicts investment decision-making
    a. Overconfidence bias
    b. Anchoring bias
    c. Disposition effect
    d. Narrow framing
    e. Representativeness bias

Conceptual Framework

Figure   *1:*
 Influence of heuristic techniques and biases in Investment Decision-making

Conclusion and Recommendation

The significance of heuristic techniques and cognitive biases enable us to enhance our understanding of the financial market by including human factors. It demonstrates investors' investment patterns, highlighting those that display under-reaction and over-reaction in the short and long run, respectively.

Finance theories must be comprehended and applied to investment decisions to make profitable investments. According to Mader (2018), knowledge in these theories raises shareholders' and investors' wealth and their capacity to invest more. The behavioural finance theory paints a realistic picture of actual investor behaviour and the factors influencing investor behavior in various situations. Organizations applying behavioural finance avoid issuing securities that fail to generate the required returns. As a result, individuals can mitigate the effect of biases that contribute to poor judgment. Biases in the financial market provide the market with impetus as investors make judgments based on self-defined principles resulting in more rapid decision-making and future investment decisions.

Financial literacy is increasingly becoming a prerequisite to making positive decisions in the capital market (Grohmann, 2018). An investment decision is influenced by the level of financial literacy of the investor (Arianti, 2018). Therefore, it is suggested that investors know about their investment activities as this will reduce the biases leading to wrong choices. Furthermore, extant evidence has shown the impact of innovations on investment decision-making. Investors' biases tend to minimize with increasing innovation in the capital market.

Also, the cost of investment decisions tends to reduce as companies achieve a competitive advantage. Therefore, it is suggested that companies in the capital market adopt innovative products as this will reduce the biases of individual investment making.

This paper contributes to the literature on heuristics and biases in investment decision-making, where we find that both heuristics and biases work in tandem in the investment decision-making process, which often lead to systematic errors in judgment. In contrast, although traditional and behavioural finance theorists have attempted to illuminate the behaviour of retail investors in the capital market, their arguments are still inconclusive. It, however, leaves us with the statement: "the harder we try to understand investor decision-making, the more it appears as a puzzle whose pieces do not fit."

Directions for Future Research

As expressed above, this conceptual paper examined the influence of heuristic techniques and cognitive biases in investment decision-making using the literature review method. It is suggested that further research may be carried out to examine the mediating effect of both financial literacy and innovations on the relationship between heuristic techniques and cognitive biases. Further extension can be carried out by including emotional biases: status quo bias, regret aversion bias, loss aversion bias, confirmation bias, optimum bias, and self–control bias as limited research has been carried out on these emotional biases among investors. Furthermore, it may also be helpful if a study were carried out to examine the relationship between financial market anomalies and possible investor bias. Such a comparative study can be a meaningful addition to the body of knowledge on behavioural finance.

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