

# Review of Biases in Individual Investment Decision-Making

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## ABSTRACT

This study explored the influence of psychological biases on investment decision making of individual investors. The involvement of psychological biases impacts the investor judgement and decision-making. This study focuses on the development of a conceptual framework for understanding the antecedents of investment decision making. On the basis of past researches, six antecedents namely, overconfidence, risk tolerance, social-influence, representativeness, availability, and herding have been identified to influence investment decision making. This study might be helpful in identifying the impediments of rational behaviour of investors and further it can be useful for studying empirical studies.

## 1. Introduction

The economic growth of country is foster by the higher investment in the stock market by mobilizing the savings of individual investors to corporate and government sectors. The prime motive of investment decision making of the stock market is long-term capital appreciation. As per the classical or traditional finance theories like, portfolio theory (Markowitz, 1952), Capital market efficiency (Fama, 1970); this objective of investment decision making is achieved by taking rational decisions. By criticising these theories of traditional finance, several researchers have claimed the presence of irrationality in decision making.

Berstein (1998) has exerted the emphasis on the way of taking decisions of the individuals under uncertainty have been approached by a repeated pattern of irrationality and incompetence. Ricciardi & Simon (2000) has claimed that the investment decision-making processes are also influenced by some emotional aspect of the investor. While other researcher stated that the investor's psychology has a significant impact on the investment decision making as well as the market (Sewell, 2007). The irrational investors may have contradictory preferences for choosing stocks and unsuitable stock horizon (Tversky & Kahneman, 1981, p.07).

Considering the emphasis of psychological aspects in determining the investment decisions by investor, it would be imperative to take insights from psychological biases as its antecedents. Literature suggests that the antecedents of investment decision making are a less researched aspect. This paper will bridge the gap by proposing the framework of a relationship among the antecedents of investments decisions. The present study seeks to understand the impact of psychological biases as the antecedents of investment decisions which affect the investor's judgement criteria and decision making.

## 2. Overconfidence

Tversky & Kahneman (1974) have first coined the term 'heuristics' which examined that heuristics are more effective in reducing the complexity in the decision making and have introduced representativeness, availability, and anchoring

construct in the heuristics. Later on Waweru et al. (2008) have added two more factors i.e. overconfidence and gambler's fallacy into the series of heuristics.

Overconfidence refers to the tendency of an investor overestimates their own abilities, skills, and knowledge (DeBondt & Thaler, 1995; Hvide, 2002; Waweru et al., 2008). Any individual can be overconfident where they have knowledge in their concerned area (Evans, 2006; Shiller, 1999). Jayaraj (2013) stated that there is a minute variation between confident decisions and overconfident decisions. Confident decisions lead to a realistic approach by trusting their own abilities, while overconfident decision follows the optimistic approach of their knowledge. Daniel et al. (1998) concluded that overconfident investors are more confident about the accuracy of their forecast and underestimate the signals of market information. An overconfident investor neglects their own forecast error for analyzing the importance of available market information. Oberlechner & Osler (2004) opine that the overconfidence can be useful to enhance the duration of an investment and its exposure towards diversification is low because of their familiarity with the stocks (Barber & Odean, 2001).

## 3. Risk Tolerance

Risk tolerance refers to "the maximum amount of uncertainty that someone is willing to accept when making a financial decision, reaches almost every part of economic and social life" (Gable, 2000, p. 625). Irwin (1993) examined that risk tolerance capacity is responsible for choosing risky stocks. Davies (2014) concluded that risk tolerance is considered as psychological traits that implied for the acceptance of return variability. Risk tolerance capacity is determined by the investor's personality and changes over time by the influence of life experiences (Van de Venter (2012). Some studies (Pak & Mahmood, 2015; Kannadhasan, 2015) stated that investors possess with high risk tolerance capacity prefer more risky investment while another researcher (Nagpal & Bodla, 2009) revealed that investors prefer less risky stocks those who have conservative nature. It is necessary to accurately assess the investor capacity of risk tolerance for selecting optimal and

well-diversified portfolio to maximize the probability of higher return (Schirripa & Tecotzky, 2000).

#### 4. Social Influence

Social influence refers to the process of interacting with their family, friends, neighbours, and colleagues about investing (Nofsinger, 2005, p.145). Both individual and institutional investors make groups for sharing their information and taking opinion from others after that they made investment decisions (Shiller and Pound, 1989). De Marzo et al. (2003) suggested that recommendations of the friends or colleague impact the investor decisions pervasively. Individuals are also highly influenced by media and internet that keeps investors away from the formal investment analysis (Baker and Nofsinger, 2002). Some studies (Brown et al., 2008; Hong et al., 2004; Bernheim, 1994) argued that investors have made equity investment decisions by the influence of social interactions. Social influence might be the reason of enhancement of the investment knowledge that leads to increased participation in the stock market (Brown et al., 2008).

#### 5. Representativeness

Representativeness refers to the over-reliance of investors on heuristics (Shefrin & Statman, 1985) and is the degree of similarity of the events resembles its parent population (Tversky & Kahneman, 1974; DeBondt & Thaler, 1995). Investors rely on the past performance of the stock and put more emphasis on the recent experience that may lead to ignorance on the long-term return aspects (Ritter, 2003). Barberis & Thaler (2003) argued that under representativeness, the sample size is neglected when an investor infers only a few stocks (Luu, 2014 as cited by Baker, 2016; Sudarisman, 2016). Barberis & Thaler (2003), DeBondt & Thaler, (1995), and Waweru et al., (2008) concluded that mostly investors prefer to buy 'hot' stocks rather than poorly performed ones that may lead towards the irrational investment decisions.

#### 6. Availability

Availability refers to the judgemental heuristics (Murgea, 2010), which gives excessive importance on easily obtained information by the investors (Farooq et al., 2015, p.64). An investor uses the general rule of thumb or any mental shortcut to assess the available information instead of analyzing the other information sources that could be the reason of irrationality (Folkes, 1988). Availability emerges when an investor focuses on a single piece of information that is easily recalled in the mind rather than giving attention to the overall situation (Nofsingera & Varma, 2013). Barberis (2001) argued that mostly investor prefers to invest in local companies because of their familiarity and information availability and investors wrongly perceived that a stock would generate a good return at a lower risk (Ganzach, 2000).

#### 7. Herding

Herding refers to the behavioural patterns of investors to follow the other's action (Ngoc, 2013; Menike et al., 2015, p.4.). It is the tendency of investors to ignore their own knowledge and expertise and made decisions according to others (Allsopp & Hey, 2000). Herding behaviour not only

includes emotional biases but it influences the others' buying behaviour, selling behaviour, selection of stocks, holding period of stocks, and the volume of stocks (Waweru et al., 2008). Herding is one of the responsible factors for achieving a greater return at minimum risk for the stocks (Tan et al., 2008). Herding is generally preferred by the investors to obtained useful information for their buying and selling decisions that may lead to inefficient market while rational investors usually overlook the other's decisions (Ngoc, 2013, p.5). Personality characteristics, low self-confidence, and investment volume affect the herd behaviour of individual investor as well as institutional investors (Goodfellow et al., 2009; Lin 2012). Individual investor follows more herding as compared to the institutional investors (Waweru et al., 2008).

### 8. Development of a Conceptual Framework

#### Overconfidence and Investment Decision Making

Overconfidence deals with the inappropriate beliefs about their skills that influence the investment decision making (Sadi et al. 2011). Mushinada & Veluri (2018) have argued that overconfidence increases the trading volume of the Indian investors at Bombay stock exchange. De et al. (2011) have conducted research on the effect of overconfident investor on their investment decision in the Indian context and concluded that overconfidence adversely impacts trading performance of the investors at National stock exchange and resulted in to a great wealth loss (Carhart, 1997; Odean, 1999; Barber and Odean, 2000, 2001). Lim (2012) has found a positive significant relationship between overconfidence and investment decision making of investors in the Malaysian share market. Kengatharan (2014) examined the effect of overconfidence on investor's decisions and investment performance of the investors at Colombo stock exchange and stated that overconfidence affects the investment decision making (Bakar & Yi, 2015; Pourjiban et al., 2014) and negatively impact on the investment performance. Several other studies supported that overconfidence positively associated with investment decision making (Qadri & Shabbir, 2014; Bashir et al., 2014; Raut et al. 2018).

Therefore, the hypothesis is formulated as:

H1: Overconfidence is positively related to investment decision making.

#### 9. Risk Tolerance and Investment Decision Making

Risk tolerance is the willingness of investors to accept the variability in return. Those Individuals who have high-risk tolerance capacity are generally to accept more variable and uncertain outcomes or make a risky investment (Grable and Lytton 1999; Nguyen, 2015; Wong et al., 2016). The investors are opportunistic in nature and accordingly they behave rationally or irrationally in investment decision making (Simon, 1979; Kahneman & Tversky, 1979). Several studies have narrated the positive effect of risk tolerance on their investment decisions and concluded that high-risk tolerance capacity become more influential to invest in stock market and taking rational decisions (Pak & Mahmood, 2015; Wood and Zaichkowsky, 2004). Sarwar et al. (2014) have analyzed under the study that risk tolerance one of the major components that influence the behaviour of Pakistan mercantile exchange. Previous studies have empirically revealed that risk tolerance

is also determined by an individual's personality traits, past experience, and their financial knowledge that ultimately affects the investment decisions (Corter and Chen, 2006; Grable, 2000; Mayfield et al., 2008; Pak & Mahmood, 2015). The risk-averse nature of investors has significant but negatively impacts the investment decision making (Farooq et al., 2015). Hence, we formulate a hypothesis as follows:

H2: Risk tolerance is positively significant with the investment decision making.

### 10. Social-Influence and Investment Decision Making

The social interaction causes the exchange of ideas and opinions from one person to another. The theory of social comparison processes has narrated that individual seeks the agreement of their decision for two hidden motives, they thought their decision should be accepted by the majority of people, and they rely on the fact that majority has more capacity to take right decisions than themselves (Festinger, 1954). Shive (2010) has identified that those individuals who interact with many people are more able to take better investment decisions. Grinblatt et al. (2008) have investigated that neighbour's opinion not only influence automobile purchase decisions but also influences investment decisions. Previous studies have shown the evidence of positive association of social influence and their investment decisions relating to trading frequency and the trading performance (Hong et al., 2004; Nofsinger, 2005; Kourtidis et al., 2017). Shanmugham & Ramya (2012) investigated in their study that social interaction has a positive relationship with the trading decisions of investors. Other researchers have summarized that social influence is highly effective on the investment decision making of female Indian investors (Singh and Yadav, 2016).

Therefore, we formulate the hypothesis is as follows:

H3: Social influence is positively related to investment decision making.

### 11. Representativeness and Investment Decision Making

In a more uncertain outcome, investors may misattribute the feature of return and past performance of a certain company's stock and by considering this fact as a representative of their future performance of the stocks that may become the base for current investment decisions of the investors (Barberis et al., 1998; Onsomu, 2014). Generally, investors have stuck in a repeated pattern of investment and fail to realize an expected return that may vary from the past experience (Prechter Jr, 2001; Arrfelt et al., 2013). Many studies have suggested that representativeness has a high impact on investment decision making of the investors and investment performance in Pakistan stock market (Anum, 2017) and has a positive relationship with the degree of irrationality in the investment decision making (Rasheed et al., 2018). Other studies have revealed that the investor's decisions are significantly influenced by representativeness, has a positive and significant impact of investment decision making (Raut et al., 2018). Hence, we have made a hypothesis as:

H4: Representativeness is positively related to investment decision making.

### 12. Availability and Investment Decision Making

When an investor overreacts negatively about securities layoffs, they suffer more loss as compared to market because of their reaction which was based on the availability heuristics (Marcus and Goodman, 1991; Worrell et al., 1991). Investor's decisions are sometimes backed by incorrect or irrelevant information which turns into irrational decisions (Scharfstein and Stein, 1990; Kirchler et al., 2005). Sadi et al. (2010) have argued that most recent events easily affect the perception of an investor in decision making. This leads to a change in the investment preferences of investors (Harris and Raviv, 2005). Some studies had identified that availability has a positive significant impact on the investor's decision making (Qureshi et al., 2012; Nofsinger and Varma; 2013; Bakar & Yi, 2016). When the investor's decisions heavily depend on easily available information, they generally pretend the future return of the stock as per the current return earned (Bakar & Yi, 2016). Other researchers claimed that availability has a moderate impact on investor's decisions (Le Loung & Thu Ha, 2011).

Hence, we have proposed a hypothesis as:

H5: Availability is positively related to investment decision making.

### 13. Herding and Investment Decision Making

Herding is a tendency of an investor to follow the crowd in order to avoid the responsibility of loss (Koenig, 1999). Many studies suggest that herd behaviour increases with age and income level of the Indian investors (Nair et al., 2017; Prosad et al., 2015). Menkhoff et al. (2006) and Prosad et al. (2015) have postulated that individual with high trading experience is more prone towards herd behaviour. Investors exhibit different herding pattern for making short-term and long-term investment decisions (Lakshmi et al., 2013). Kengatharan et al. (2014) assert under his study that the buying and selling of stock, volume of stock, and speed of herding have a moderate effect on the investment decision making of investors of Colombo Stock Exchange. Some other studies have also identified that herding has a moderate impact on the investor's decision making in the Ho Chi Minh stock market (Le Luong & Tha Ha, 2011; Luu, 2014). Wamae (2013) and Anum (2017) have stated that herding is a highly influential behavioural factor that impacts the investment decision in the Kenyan stock market and Pakistan stock exchange respectively. Lim (2012) and Baker & Yi (2015) have examined the relationship between herding and the investment decision making and narrated that herd behaviour has no significant impact on investor's decision making in the Malaysian stock market.

Therefore, we have proposed a hypothesis as:

H6: Herding highly impacts the investment decision making of investors.

The earlier stated hypotheses on the relationship of investment decision making and its antecedents are shown in Figure 1.

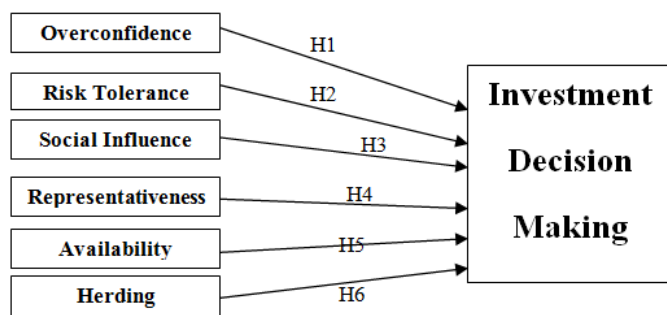


Fig: Conceptual Framework for Antecedents of Investment Decision Making

## 14. Implications

Evidence from the result of various studies indicates that investment decision making is influenced by several psychological factors. Generally, investors assess the risk and return perspective of every investment decisions. It has been noted that the investors usually take a shortcut instead of assessing all the available information. The investors unknowingly allocate their assets in a non-suitable avenue or may prefer under-diversified portfolio that can hamper investment objectives. Hence, proper criteria should be adopted to improve the decision quality. Therefore, it is imperative to understand the influence of aforesaid antecedents to the investment decision making that may responsible for irrational decisions. This study has drawn attention on psychological biases like overconfidence, risk tolerance, social influence, representativeness, availability and herding as the antecedents of investment decision making for individual investors.

The past literature implies that the existence of these antecedents when individuals make decisions. Prosad et al. (2017) observed the existence of overconfidence in the

National stock exchange among Indian investors and it is the most prevalent bias from the other biases. Charles and Kasilangam (2016) claimed that heuristics significantly impacts the investment decisions of investors in the Indian equity market and Karachi stock exchange in Pakistan (Hassan et al., 2013). Fatima et al. (2018) confirm the presence of social influence in Indian stock market. Herding and representativeness have also shown a strong emphasis on the decision making of investors in the Indian context (Raut et al. 2018).

Therefore, the important implication for the companies as well as financial advisers to provide furnish information about decisions, asset allocation among several investment horizons, useful and relevant information and risk- taking propensity of the investor in facilitating for making effective and efficient investment decisions.

## 15. Conclusion

Behavioural finance focuses on the understanding investors' psychology in order to achieve the primary objective of investment by taking rational decisions. Overconfidence, risk-tolerance, social influence, herding, representativeness, availability are the prominent constructs for analysing the investment decisions. These antecedents explain the overall relationship with investors' behaviour in decision-making. The purpose of this paper is to identify the emphasis of psychological biases in the decision- making of investors. This study provides a rational to better understand the actual behaviour of individual investors and investigates the reasons behind their irrational behaviour. Furthermore the personal moods and personality characteristics can also be assessed to analyze the investment decisions in order to know how these factors can influence the relationships of psychological biases with the investment decisions (Mayfield et al., 2008; Fatima et al., 2018).

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