



PROPOSING A FRAMEWORK FOR STUDYING INFLUENCE OF PERSONALITY AND BEHAVIOURAL BIASES ON INVESTORS' PERFORMANCE

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Abstract

The emerging area of behavioural finance proposes several interesting insights related to human economic behaviour, albeit contradicting the tenets of traditional economics. The traditional view holds economic agents to be rational and maximising under given constraints and also believe markets to be self-adjusting and efficient. On the other hand the behavioural economist contends otherwise, letting human beings normal (or rather irrational) while building economic models and explaining their economic and financial behaviour.

The purpose of this study is to comprehensively study behavioural factors to identify, integrate and propose a framework and to study the role of several behavioural biases on investment performance. In this study most important human behavioural biases relevant to financial decision making are identified. The behavioural factors influencing investors' decision making are grouped in four broad categories: prospect, heuristics, herding and personality. Within the first factor, prospect, there are three sub dimensions: loss aversion, regret aversion, mental accounting. Second factor heuristics is also conceived as having three dimensions which include representativeness, overconfidence, anchoring. Third factors herding is conceived as one-dimensional. Last factor which is personality has five distinct types (Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism) and each act as a moderator in the relationship between independent variables the dependent variables.

Keyword: *behavioural Biases, Investor's behaviour, Literature review, personality, Conceptual model*

Introduction

Theories in traditional finance and economics have always assumed the human behaviour, specifically related to financial and economic decision making, as rational and maximising. For many decades this assumption has been the most important facets of traditional theories of economics and Finance. Aligning with that notion the theorists considered markets to be efficient and error free. However in the last few decades many researchers have questioned the assumption of rationality. There are a number of practical evidences that show that human do not necessarily exhibit rational behaviour. In many behavioural studies pertaining to financial decision making, previous researchers have examined the influence of the fallacies and biases related to investment performance. This study is an attempt to identify and integrate the behavioural factors and proposes a comprehensive framework to understand the influence of these factors on investors' behaviour.

Human behaviour related to financial and economic decision making was earlier supposed to be rational and of a maximizer. Many traditional theories of economics and Finance are based on the assumption that human beings behave rationally. Consequently the markets also are efficient and error free. However, to the contrary many practical evidences show that human beings exhibit unreasonable, uncertain and irrational behaviour. In many behavioural studies pertain to financial decision making, previous researchers have examined the influence of the fallacies and biases on investment performance. This study adopts a qualitative method and review the available literature to identify most pertinent behavioural biases. The main idea is to select most suitable studies and including the most relevant constructs and sub-constructs which may influence investor's choice and decisions making.

Review of literature

The study conducts a review to literature on how investor's behaviour is motivated or challenged by some inherent or environmental factors. These factors may either facilitate or inhibit the decision making of investors. Therefore, behavioural factors can help achieving good returns and at the same time can also be related to losses! Positive attitude, knowledge, and confidence are some factors which positively influence the decision making of investors. While there are a number of factors like mental accounting, loss aversion, anchoring etc. which may lead to poor decision making and hence low profits or even losses. Behavioural finance plays an important role in understanding as well as explaining the manner in which both cognitive factors and emotions influence the

investors. Shikuku (2013) defined behavioural finance as "... the study of the influence of psychology on the behaviour of financial practitioners and the subsequent effect on the market".

Behavioural factors could be measured by simply relating the usual assumptions of traditional finance through incorporation of systematic, observable and very human departures from rationality into models of financial behaviour and markets. Scholars have combined finance and psychology in a bid to explain better investor behaviour and certain features of securities markets that appear irrational (Chandra, 2008). Investor behaviour and features of securities markets that appear irrational include herding behaviour, overconfidence, anchoring, representativeness, mental accounting, cognitive dissonance and loss aversion Kumari (2016) Many of the financial and economic theories presume that an individual acts rationally and considers available information in the investment decision-making process (Lovric, Kaymak & Spronk, 2008). Human beings when faced with uncertainties have been found to manifest repeated pattern of incompetence, inconsistency and irrationality in arriving at decisions and choices (Chandra & Kumar 2011).

Theories of behavioural finance are based on cognitive psychology. Cognitive psychology stipulates that decision processes of human beings are subject to many cognitive illusions. Cognitive illusions are classified into two main groups namely, illusions necessitated by adoption of mental frames and illusions resulting from heuristic decision processes. Raines and Leathers (2011) defined heuristic as the use of practical efforts and experience in answering questions or to effect improvement on performance. People tend to rely on rules of thumb or heuristics when faced with uncertainties. The use of rules of thumb as well as heuristics is employed subjectively to assess the risks of alternatives that have the potential in reducing the complex tasks of examining probabilities as well as predicting values to simpler judgmental operations (Chelangat, 2011).

The rational vs. Irrational and efficient vs. inefficient debate

As already discussed the traditional theories of finance consider individual as irrational while in behavioural finance individuals are just normal (or irrational). Further the traditional finance also considers markets to be efficient while people from behavioural finance have also found holes in the notion of rationality and "market efficiency". There are ample evidences which counter the notion of rational behaviour and market efficiency. As a matter of fact there are several anomalies in the market like fundamental anomalies, technical anomalies and calendar anomalies. Earlier traditional theories in finance considered rationality as an indispensable part of human dispositions. To mention some theories included but not limited to the decision theory, expected utility theory, portfolio choice theory, capital asset pricing model and modern portfolio theory etc.

The Efficient Market Hypotheses

The efficient market hypothesis, proposed by Eugene Fama (1972), is a theory in financial economics that posits that prices of assets completely absorb the all available information and are the direct manifestations of its value. This implies that it is impossible to "beat the market" steadily as the market prices would react only to novel information or alterations in discount rates. The theory also postulates that all shares are traded at reasonable price and it is not possible to predict and buy undervalued shares or sell them at an abnormally higher process. So having superior information and or knowledge would not result in higher returns so that one should not be able to beat the market until unless he is willing to take more risk and then the success will be merely a matter of chance (Bergen, 2017). Kenneth French (2012) confirmed the propositions of EMH by exhibiting the fact that distribution of abnormal returns of mutual funds in USA is quite akin to what would be probable if the fund managers had no portfolio management. Thus making abnormal return merely a matter of chance than planning which is also a necessary condition claimed by EMH.

There are three variations of the market types in EMH: weak form market, semi-strong form markets and strong form market. The weak form of EMH claims that share prices already display relevant previous information which is publicly available, however may not vary quickly adjust to new information. In semi-strong form of EMH price absorb publicly available information as quickly as the information appears and adjusts accordingly. In the strong form of the EMH the prices exhibits all information even including "insider" information and reacts very quickly to such information. EMH was one of the most widely acclaimed theory of its time until unless late 2000 which was the advent of a financial crisis and shook the experts' belief in EMH.

The Prospect theory: Foundation of behavioural finance

It is a theory of behavioural economics that describes how people tend to choose among choice alternatives that embroil risk, and where the probabilities of expectations are given. The theory maintains that individuals decide on the basis based on the probable assessment of gains (or losses) instead of the final position, and that individuals appraise such gains (or losses) applying some rule of thumbs (known as heuristics). The model of prospect theory is descriptive and demonstrates the real-life choice situations which may be suboptimal as opposed to what normative theory prescribes. The theory, which was first proposed in 1979 and later on furthered by Daniel Kahneman and Amos Tversky in 1992, provides a more accurate account of human decision making, contrasted to the expected utility theory. In the original connotation, the term prospect denoted to a 'lottery'.

The paper "Prospect Theory: An Analysis of Decision under Risk" (1979) has been called a "pivotal work in area of behavioural finance. The prospect theory illustrates the decision processes in two stages. The first process is known as "editing" expected outcomes of choice alternatives are arranged according to some rule of thumbs. In the editing stage individuals try to substitute for framing. The editing process involves a series of sequential activities "coding, combination, segregation, cancellation, simplification and detection of dominance" (Kahneman & Tversky, 1979). In the next phase which is the *evaluation* phase people act as if they would calculate a choice or utility on the basis of future outcomes and their corresponding possibilities, and then choose the options which may provide more utility.

Conceptual Framework

This paper proposed a conceptual framework that relates seven direct hypotheses and five moderating hypotheses. Direct hypotheses presented in the model contemplates that Loss aversion, regret aversion, mental accounting, anchoring representativeness, overconfidence, and herding are positively correlated to the investors Behaviour. Thus, the author proposes that above mentioned factors significantly and directly influences the investors' Behaviour. Further, there are moderating hypotheses which posits that personality moderates the relationship between the investors' behavior and its antecedents. In the conceptual framework eight independent factors are clubbed in four sub factors. The four main factors are Prospects, Heuristics herding, and personality. Within prospect, there are three sub factors: representativeness, overconfidence, anchoring and within heuristics there are three: loss aversion, regret aversion, mental accounting. Herding factor is conceived as one-dimensional. Last factor which is personality has five distinct types (Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism) and each act as a moderator in the relationship of independent variables with the dependent variables.

Mental Accounting

Mental accounting is used to describe the people's tendency of placing certain events into various mental accounts based on superficial attributes (Pompian, 2012). Investors have been found to have a tendency of placing their investments into arbitrarily separate mental compartments and they tend to react separately and in different manner to investment depending on the compartment they are in. Mental accounting denotes to the predisposition for individuals to group their money into separate accounts by a number of subjective, even implausible, criteria like the from where the money has come and what will be its use. In layman's term mental accounts can be seen as that of "mental piggy banks" According to this theory people allocate unique meanings to different asset group which can be termed as irrational and could be harmful to the consumption decisions and other behaviours both financial and non-financial.

Regret Aversion

Regret phenomenon is related to familiarity bias. Regret aversion mainly deals with the question, how previous regret can shape future decision processes? Loomes et al (1982) offered unconventional rather affirmative sides of 'regret theory', (contrasting that of Tversky and Kahneman's negative portrayal of the regret theory) which explains a number phenomenon related to choice and decision making, which the earlier theory couldn't explain. Bell in (1983) described 'regret aversion' as individual's disposition to pay a price to help them avoid things that cause the regret. He added that when there is uncertainty, people fear of making wrong decision and they postpone the act of decision making. Thus, not choosing any alternative associated with an expected outcome and would not result in a solution.

Bell's study also provided a model of preference which has two main components, first is the "diminishing marginal utility" and second is the "regret aversion". They observed that investors evaluate possible losses against benchmark in the expected utility than in profits. Simonson (1992) posited that individuals who are influenced by phenomenon of regret aversion are unwilling to take risk despite the fact that risk may adjust the losses arrived out of poor results. Regret is one of the most widely studied emotions which intertwined with the decision making of individual investors.

Loss Aversion

The phenomenon of loss Aversion is common to most situations of decision making when confronting risk and uncertainty. The main postulate of this bias is that individual is "more sensitive to losses than gains" (Moore, 2017). Loss aversion is an important aspect of in prospect Theory. Generally loss aversion applies to most areas of human decision making. In case of financial decision making it refers to the observation that people often respond differently to similar circumstances contingent on the context i.e. expected loss or expected gain. Investors tend to express anxiousness while expecting losses and feel positive motivation and happiness while expecting gains. Thus according to Kahneman, Investors are more willing to take risk in case of risk domain and become conservative in domain of gains. This means they show 'loss aversion' willing to take more risks to avoid losses. Interestingly they are not willing to take risk to make profit rather more willing to take risk to avoid the losses.

This also infers that people are more interested (perhaps out of anxiety of fear) to take more risk to avoid any certain future loss and at the same time they are not willing to take risk when they may achieve profit equivalent to the future loss. Loss aversion depicts the fundamental conception that, even if the average investors is predisposed with the biases optimism related to future outcome they are keen to suffer losses than the gains.

This phenomenon was explained by Kahneman and Tversky (1979) with the help of value function. The Value in prospect theory exhibits asymmetry between the values that individuals assign to gains and losses. People are risk averse in domains of gains which lies in (+, +) quadrant while risk takers in domains of losses which lies in the (-,-) quadrant. Quantitative studies conducted by Kahneman and Tversky (1991) demonstrate that individuals evaluate gains as half of the losses. This implies that individuals often tend to take bet in losses in hope that they may win in the next bet and keep on betting. The utility function in the prospect theory is upward slopping towards right in gains domains and downward slopping toward left in domains of losses.

Anchoring

Hede (2012, p.33) defined anchoring as "... the decision-making process where quantitative assessments are required and where these assessments may be influenced by suggestions". Anchoring as a concept draws on the tendency to attach thoughts to some reference point even if it has no relevance to decision at hand. Normally, people tend to have reference points, which are their anchors. For instance, in the stock market, the reference point or anchors people may have is previous stock prices (Hede, 2012). Thus, when people get new information, they tend to adjust the past reference insufficiently to the prevailing or new information. Anchoring, is therefore used to describe the way people focus on recent behavior while giving less attention to longer time trends. Anchoring may seem to be unlikely phenomenon but in real sense, it is quite prevalent in situations in which individuals deal with concepts that are novel (Beck, Maimbo, Faye & Triki, 2011). The anchoring also explains why stock price indices are volatile in the manner in which they are. Anchoring further assist in explaining the reason averaging across stocks, which is inherent in the construction of the index does not more solidly dampen its volatility (Kumar & Abhijeet, 2007). The concept also plays a significant role in explaining why companies' stocks spread across various industries and are headquartered at a specific location tend to have similar price movements compared to tocks of an entity that are in same industryand headquartered in different countries(Olweny, Namusonge & Onyango, 2012).

Representativeness

Representativeness is manifested among investors when they seek to buy what is termed as hot stocks while avoiding stocks that have not been able to perform well in the market in the recent past (Singh, 2010). As a result, investors may make decisions based on information that is not actually representative of facts but may be simply be random in a specific data. Such behaviour among investors could be used to explain the overreaction of investors. According to Kahneman and Tversky (1972) representativeness is a heuristic which is employed while rendering a judgments about the likelihood of an outcome under uncertain conditions. Representativeness was one of the three heuristics biases (among other two were overconfidence and availability) which Amos Tversky and Daniel Kahneman described in in his seminal work in early 1970 (Tversky & Kahneman, 1974). They defined heuristics as "judgmental shortcuts that generally get us where we need to go – and quickly – but at the cost of occasionally sending us off course." For some limited and less demanding and repetitive work heuristics can be very useful as they reduce effort and simplify the decision-making (Shah and Anuj, 2008).

Kahneman and Tversky (1972) defined representativeness as "the degree to which an event 1) is similar in essential characteristics to its parent population, and (2) reflects the salient features of the process by which it is generated" When people depend entirely on representativeness to make decisions they are susceptible to poor judgments for the reason that something is representative does not guarantee its occurrence (Tversky & Kahneman, 1982). The representativeness heuristic is basically explained as evaluating resemblance of entities to help them organizing in the category or pattern (e.g., same goes with same, and "causes and effects relationship leading to resemblance (Gilovich & Savitsky, 2002)

Overconfidence

Overconfidence bias one of the most common bias engrained in human nature. Investors tend to subscribe too much confidence in their skills, abilities and knowledge so that they could not foresee the amount of risk associated with the investment. This myopic vision can make their investment vulnerable and jeopardise their wealth. Previous studies have shown that the overconfidence bias influences rational decision-making behaviour. Overconfident investors may indulge in excessive trading (Odean, 1999). Further, Odean (1999) also asserted that the gain realised (if any) in an attempt of overtrading are not able to trade-off the transaction cost. Similar observations were also made by Barber and Odean (2000) in their study with a very large data set of 78,000 household consumers at an American brokerage firm. They found that too much trading lead to less returns.

Overconfidence emanates from instances where there is little diversification in investments (Singh, 2010). Lack of diversification in investments is attributed to the fact that investors tend to invest in what they are quite familiar with in an effort to minimize risk chances in the investment. It is quite difficult to select common stocks

that would outperform the market. Selecting such stocks is difficult due to low predictability as well as noisy feedback; making stock selection is a kind of task for which people tend to be overconfident (Bodie, Kane & Marcus, 2008). Overconfidence offers explanations on why financial economists normally hold actively managed portfolios, why pension funds hire active equity managers and why portfolio managers trade so much.

Other researchers like Daniel et al. (1998), Barber and Odean (2001), Statman et al. (2006), and Weber and Camerer (1998) have also furthered the understanding of phenomenon of overconfidence by conducting many other quantitative researches in this field.

Herding

People who communicate regularly with each other tend to think similarly (Jagongo & Mutswenje, 2014). As a fundamental observation about human beings this also applies to investors. Thus, it is imperative to understand the basis of similar thinking in order for one to judge plausibility of investment theories, which ascribe changes in price to the faulty thinking. Two main reasons are attributed to herd behaviour (Kumar, Bharti and Bansal, 2016). The first reason is that social pressure of conformity is considered a powerful force since people generally are social beings. Human are sociable and have natural desire to be accepted by a group. Thus, the ideal way to become a member of a group is to follow the group. The next reason is the common rationale that such a large group is likely to be wrong (Hede, 2012). An individual may not be convinced that any given idea is correct or rational but such a person may still end up following the herd believing that the group knows something you do not know. Such instances are common in situation where one has little experience. (Kumar & Bharti 2017)

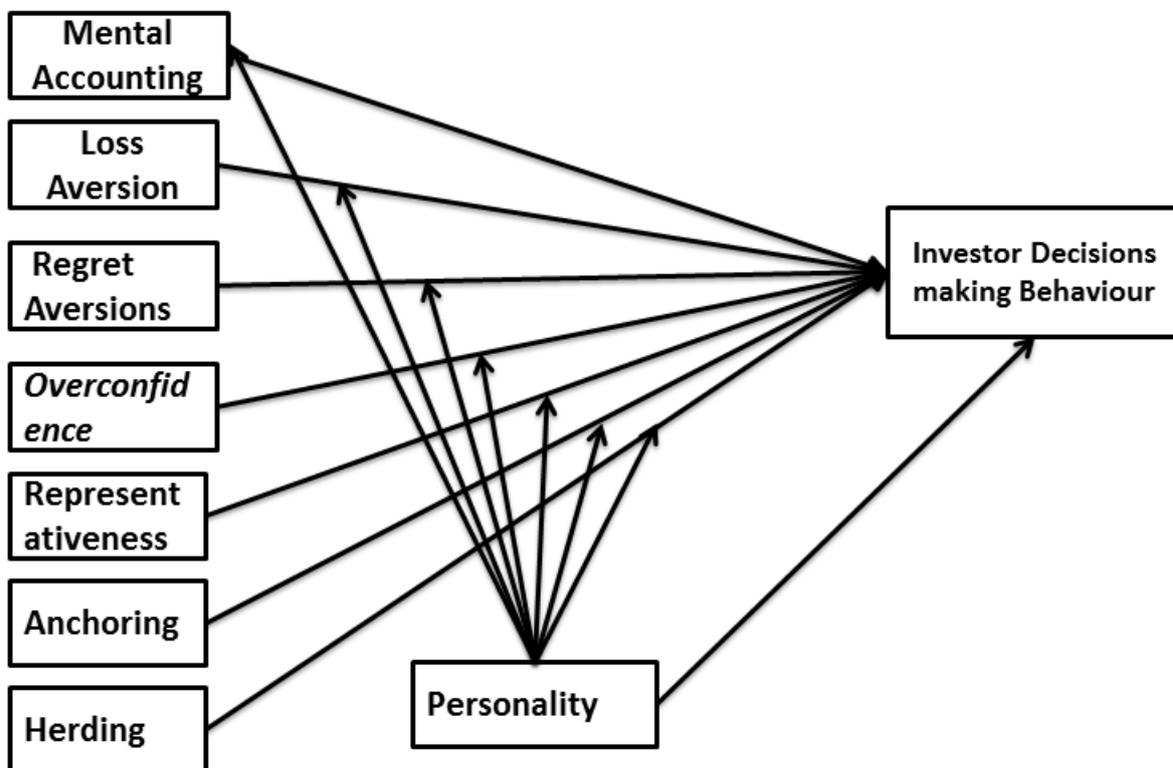


Figure 1 Proposed conceptual Framework

Personality

People respond in a different way to the similar situations. In modern psychology, the Big Five personality traits are the five distinct constructs which define human personality and account for differences at person to person level. These factors are openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. This section discusses about the Big Five personality theory. The earliest model was evolved by two researchers in 1961, Ernest Tupes and Raymond Christal (1961) however they were not successful to influence an academia until 1980. Later on in 1990, J.M. Digman advanced his five-factor model of personality, and which was furthered by Lewis Goldberg extended to its epitome. These five central factors have been recognised as most acknowledged personality traits and are supposed to epitomise the very foundation behind all personality types. A number of studies have investigated the influence of personality traits in decision making however its application in understanding behaviour biases is limited.

Rad and Chirani (2014) analysed the perception errors with personality and moderating role of age and gender in stock exchanges. The authors have revealed that there is a meaningful relationship occurred between the perceptual error and the personality of the investors. In fact, there is only significant relation between the conscientiousness and openness of personality with two dimensions and perceptual errors. Extroversion,

agreeableness, conscientiousness, neuroticism and openness to experience are some of the personality traits related to the investor's decision making. He studied about the personality and market returns affect the portfolio monitoring behaviour of the investors. The personality trait of neuroticism has associated with the anxiety at higher level. The authors revealed that this type of personality has reflected in their reactions to negative market returns. The personality has played an important role in predicting the social and economic outcomes including the labour market, crime, schooling decision and longevity. Charles and Kasilingam (2014) pointed that the personality of individual's investment has played the significant role to determine the success of investment. Personality has identified by using the style of attitude, cognition and decision making. The authors also have found out that the personality has affected the preferences. In fact, the cognitive play of the investors has played a vital role on defining the personality of the investors. Khan (2017) has analysed the cognitive, decision making styles and cultural effects of the investor. Achievement, vigilance and emotions are some of the personality traits which are affecting financial risk tolerance in an uncertain environment. In fact, the personality factors have played a significant role to identify the financial risk tolerance of an individual. It has created some impact on risk tolerance of the investors which effect the decisions related to the investment. Parsaeemehr, Rezeai and Sedera (2013) studied about personality type of investors and perception of finance information to make decisions. The personality and temperaments have affected the decisions of the investors. The authors have analysed that there is a strong link between financial knowledge, investment behaviour and investment performance (Clark, Lusardi and Mitchell, 2015).

Conclusions

In this study most important human behavioural biases relevant to financial decision making are identified. These are representativeness, overconfidence, Anchoring, availability bias, mental accounting, and herding. These biases were further clubbed in the broad categories: heuristics prospects and herding. Further moderating role of personality variables on relationship between behavioural biases and investment performance is also proposed to study in a future quantitative research. There are five types of personality: openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. The author proposes that each group of personality will moderate the relationship between behavioural biases and investment performance. The outcome of this study is to test a model by using sophisticated technique like Partial least square SEM (PLS-SEM) or Variance based SEM. This study will have implications for researchers, managers and policy makers.

Understanding of behavioural biases and personality is important for the investor as well for the advisor. The first step is to understand which bias is prominent and what are the challenges arising from the bias. In this the advisor can keep better guide their clients to achieve their goals. The bottom line is to amalgamate insights of behavioural finance in traditional financial activities like investment as discussed in the present study.

Individual investors should also try to understand themselves. Self-awareness is the one of the earliest step in investment. Individual investors should assess his/ her risk potential and tolerance. Further he should be aware of his her personality type and other biases which s/he may be struggling with. Understanding these basic behavioural aspects will help people realising their true potential.

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