

Investing with Emotions: Exploring the Impact on Academic Decision-Makers

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Abstract

This study aims to test the effect of positive and negative emotions on the investment decisions of academicians in India, as well as the mediating role of biases, namely, overconfidence, mental accounting and herding bias. The relationship was tested using partial least squares structural equation modeling through SmartPLS 4.0. Further, a bootstrapping method was employed to determine the mediation effect in the study. The findings indicate that positive emotions have a significant and positive effect on academicians' investment decisions, while negative emotions have a negative but insignificant effect on academicians' investment decisions. Furthermore, partial mediation of overconfidence bias on the effect of positive emotions on the investment decisions of academicians is observed. In addition, a significant mediation effect of herd behavior is found between negative emotions and investment decision of academicians. This study provides novel insights into the impact of behavioral factors on the investment decisions of highly educated investors, that is, academicians. In particular, it enhances the understanding of the role of emotions in investment decision-making in an emerging market.

Keywords: Emotions, overconfidence, investment, herding, academics.

Introduction

The behavioral approach to investment decision making includes studies related to investor behavior and behavioral biases (Jain et al., 2023; Kartini and Nahda, 2021; Singh and Kumar, 2022; Qasim et al., 2019; Quang et al., 2023), financial literacy and behavioral biases (Ateş et al., 2016), market efficiency in presence of bias (Shah et al., 2018), personality traits (Ahmad, 2020; Lai, 2019) and investor sentiment (Anusakumar et al., 2017; Baker et al., 2021). However, emotions are generally studied in relation to trading performance (Hinvest et al., 2021), the propensity to continue investment (Brundin and Gustafsson, 2013), emotion and investment returns (Wang et al., 2014) and emotions and attitude to risk (Brooks et al., 2022).

Emotion comprises diverse cognitive and physiological reactions to stimuli that shape our perception and response to the world around us (Ledoux and Brown, 2017). Emotions can be said to be subjective, and despite being difficult to identify and assess, emotions have been widely studied across various fields such as philosophy, psychology and neuroscience. Some emotions, including joy, sadness, fear, and anger, appear to be universal as identified across cultures (Ekman, 1999). Also, it is observed that emotions can change with a change in situation or environment (Lazarus, 1991). As per the recent finance literature, numerous empirical studies have been conducted relating to the impact of major investor emotions (stress, anger, doom, and joy) on financial markets. Also, biases such as overconfidence, are found to be closely associated with and derived from strong positive emotions (Im and Oh, 2016). Thus, the present study explores the impact of positive and negative emotions on investment decisions.

The idea of irrationality and biasness of investors came into view as a result of the experimental and theoretical propositions given by Tversky and Kahneman (1970), which led to the concept of psychological biases in financial behavior. Although the impact of biases can be increased or decreased for specific decisions, it is not possible to completely eliminate them from an investor's innate behavior (Fernandes and Luiz, 2007; Grable, 1999). In present study, the effect of behavioral biases, notably the effect of overconfidence, mental accounting and herd behavior, is studied. Thaler (1999) defined mental accounting as 'the set of cognitive functions applied by individuals and households to plan, assess, and manage financial activities'. Mental accounting results in misinterpretation of risk, which hampers the diversification of investment portfolios (Nofsinger, 2017). People allocate resources into various mental accounts depending on available funds and choices, against the fungibility theory (Henderson and Peterson, 1992; Shefrin and Thaler, 1988). Furthermore, individuals exhibit a tendency to set up a distinct mental account for each spending, keeping in line with the budgeting task. Mental accounting manifests itself in the disposition effect and the equity premium puzzle (Shefrin and Statman, 1985). 'Herd mentality in financial market is expressed as the behavior of individual investors to imitate the choices of other investors' (Chang et al., 2000). As per Durand et al. (2013), investors having less confidence adhere to the opinions of others. Several studies have found substantial evidence of the impact of herd behavior on investment decisions (Jhandir and Elahi, 2015; Kamil and Abidin, 2017). Clarke et al., (2010) examined the presence of herd mentality among institutional investors. Garg and Gulati (2013), Ramadan (2015), and Cakan and Balagoyozyan (2016) conducted research on considerable evidence of herding in the Indian Stock Exchange, Amman Stock Exchange (ASE), and Turkish Stock Exchange, respectively. Overconfidence in decision-making is often expressed by egocentrism (Miller and Ross, 1975; Ricciardi and Simon, 2000; Strong, 2007; Svenson, 1981), illusion of control (Langer and Roth, 1975), and unreasonable optimism (Russo and Shoemaker, 1992; Taylor and Brown, 1988). Overconfidence bias is found to have a significant impact on financial decisions. Also, Bakar and Yi (2016) noted the adverse impact of overconfidence on investment decision-making. Odean (1998) and Statman et al., (2006) established a link between the volume of trading and investor overconfidence. Optimistic investors believe that they will only make good decisions, which leads them to underestimate costs and maximise benefits. As a result, they perceive themselves as impervious to certain negative outcomes. This bias leads to misinterpretation and a considerably lower risk perception (Barnes, 1984; Nofsinger, 2017; Russo and Shoemaker, 1992). Keeping in view the previous literature on biases and emotions on investment performance and returns, the present study assesses the effect of biases as mediators while analysing the relationship of emotions and investment decisions.

An investor's financial decision usually depends on several factors, which include education. Education is a major factor which influences investment decisions (Quang et al., 2023; Metawa et al., 2019). Higher education levels are correlated with higher risk tolerance (Lewellen et al., 1977; Schooley and Worden, 1999). Investors with a degree level education can anticipate a variety of factors relating to investment activities while making a decision. According to a study by Fachrudin and Fachrudin (2016), it was found that the rise in the level of education is positively associated with the increased financial literacy of an individual, which in turn affects the investment decision. As academicians possess a high degree of education, their economic behaviour and attitude towards saving, consumption, and investment impact their quality of life and influence their profession and educational system. The existing literature puts emphasis on investment preferences of academicians in relation to tax planning schemes (Pallavi, 2018), investment behavior and risk (Sairam, 2016), awareness and investment patterns (Patel and Bhatia, 2015). A study by Singh and Raheja (2019) suggested that future prospects, knowledge, investors' own experience, and general information lead academicians to make a particular choice of investment. Since the previous researchers did not assess the emotional and behavioral aspects of investment decisions of academicians, the study formulates the following research questions:

'Q1. Do emotions influence the investment decisions of academicians?'

'Q2. Do mental accounting, herd behavior and overconfidence mediate the relationship of emotions and investment decisions of academicians?'

This study attempts to explore how emotions affect the investment decisions of academicians as individual investors. The study will also investigate the mediating role of specific biases (overconfidence, mental accounting and herd behavior) between emotions and investment decisions of Indian academicians. This research extends the current literature in multiple aspects. First, there is no previous research that addresses the behavioral aspects of investment decisions of academicians. Second, the study is unique in the aspect that it deals with several biases with emotions. The results add to a better comprehension of the dynamics of investment decisions of academicians in the Indian context.

Literature review and hypotheses development

For the purpose of this study, emotions are divided into positive and negative, as suggested by Isen and Geva (1987) and Rafaeli and Sutton (1987). Excited, inspired, alert and proud are some of the positive emotions (Watson et al., 1988) examined in this study. According to Fredrickson (2004), positive emotions extend cognitive capabilities of individuals, enabling them to recognise a broader range of prospective investment opportunities and take more risky decisions. Positive emotions have been associated with high attentiveness and information processing. Lerner et al. (2015) observed that positive emotions improve cognitive processes, causing investors to examine a broader range of factors and conduct more precise and thorough evaluations of investment alternatives. Isen (2000) suggested that people who experience positive emotions are more flexible when considering different investment options, resulting in improved decision-making outcomes. However, as per the findings by Isen (2008), strong positive emotions may not necessarily lead to favorable financial decisions and sometimes even impair it. Thus, strong positive emotions can also negatively effect investment decision. Therefore, the following hypothesis is formulated:

'H1a: Positive emotions have a positive impact on investment decision making of academicians.'

Negative emotions such as sadness, fear and anxiety, can significantly affect how people perceive risk and make investment decisions, which in turn, affects their entire portfolio. In this regard, Lerner and Keltner (2001) conducted experimental studies. They observed that while fearful participants made pessimistic decisions and choices, participants who were angry or happy made optimistic decisions and choices. According to researchers, varying emotions of same intensity can influence investment decisions in multiple ways; for instance, fear encourages negative risk estimations and risk-averse decisions, whereas anger stimulates

positive risk assessments and risk-seeking decisions (Lerner et al., 1998; Lerner and Keltner, 2000, 2001; Tiedens and Linton, 2001). Brundin and Gustafsson (2013) observed that increased levels of uncertainty, as well as hope, challenge, and self - confidence, all improve the probability of continuing the investment. Embarrassment and stress have little impact on this propensity; nonetheless, severe uncertainty reduces the propensity to continue investing. Lerner and Keltner (2000) found that specific negative emotions of fear and anger have substantially distinct impacts on risk preferences: anxious individuals make pessimistic assessments, whereas angry people make optimistic ones. The results of the study by Gambetti and Giusberti (2012) concluded that the attribute of anger predicted riskier judgments, such as a desire to invest in divergent stocks, a preference for medium to long-term investment, and a highly anticipated evaluation in stock trend forecasting. Anxiety, on the other hand, projected cautious financial behaviours, such as not investing savings, keeping hold of interest-bearing accounts, and having low stock trend predictability. Considering these studies, the following hypothesis was developed:

'H1b: Negative emotions negatively affects the investment decision of academicians.'

Positive emotions like excitement and enthusiasm can influence an investor's mental accounting methods. Shiv et al. (2005) suggests that positive emotions results in the less attentive and more impulsive investment choices. This can lead investors to allocate more resources to less important investment avenues and overlook their long-term financial goals. Lerner and Keltner (2001) observed that individuals with negative emotions such as stress or nervousness are more inclined to allocate their resources to conservative saving schemes. Thaler (1999) discovered that mental accounting might produce undesirable investment outcomes as investors may fail to evaluate aggregate portfolio performance and rather emphasise on individual stocks. This can lead to inappropriate diversification of the portfolio as well as wasted profitable investment opportunities. The perception of risk of individual investors can be affected by mental accounting bias. Grinblatt and Han (2005) observed that people perceive risk differently depending on their mental classification of various investment choices. For instance, people may consider more risky investments acceptable, if they perceive them as a part of a speculative account, whereas it is undesirable if they perceive them as some retirement savings account. Keeping in view the significant relationship of mental accounting with emotions and investment behaviour, the following hypothesis is developed:

'H2a: Mental accounting mediates the relationship between positive emotions and investment decision of academicians.'

'H2b: Mental accounting mediates the relationship between negative emotions and investment decision of academicians.'

Emotions like anxiety, excitement and fear can lead to herd behaviour in several circumstances. In extreme situations, fear might cause people to adhere to the decision or acts of others, which results in unified responses (Drury et al., 2019). Also, positive emotions such as enthusiasm or excitement can cause a cognitive contagion effect, resulting in collective patterns like stock market booms or bubbles (Bikhchandani et al., 1992). Individuals often integrate their emotional states with people around them, which intensifies group-based emotions and encourages herd behaviour (Hatfield et al., 1993). In addition, emotions associated with social identity can strengthen in-group biases leading to opinion polarisation within a herd (Hogg, 2016). Herd behavior often occurs in developing markets than in developed ones because of the government's heavy intervention and the inadequate information availability, and thus investors follow the investing strategies of their peer groups (Chen et al., 2003; Raut et al., 2020). Lakshman et al. (2013) conducted a study utilising secondary market return data and found that the presence of herding bias in the Indian market is highly insignificant. Lin (2011) and Kumar and Goyal (2016) suggest that there is no direct relation between herding and investment decision-making, but it might come into play due to factors such as market conditions, etc. Agarwal et al. (2011) observed that herd tendency is found in foreign as well as domestic investors, but foreign investors are more prone to exhibit herd behaviour. Keeping in view the contrast results of previous studies, following hypothesis is developed:

'H3a: Herd behavior mediates the relationship between positive emotions and investment decision of academicians.'

'H3b: Herd behavior mediates the relationship between negative emotions and investment decision of academicians.'

Individuals experiencing positive emotions are usually more overconfident, which leads them to overestimate profits and increase the willingness to take higher risks (Erdem and Swait, 2004; Lichtenstein et al., 1982). Positive emotions boost their self-perceived expertise and impairs cognitive interpretation, resulting in overconfidence bias. In contrast, negative emotions are found to have mixed effects on overconfidence bias. While Lerner and Keltner (2001) suggest that negative emotions promotes risk aversion and lowers the overconfidence, Dijk and Zeelenberg (2002) found that negative emotions may induce people to overestimate their judgement and expertise, leading them to make aggressive decisions. Positive emotions stimulate heuristic thinking and dependence on intuition, whereas negative emotions generally result in more methodical and logical processing (Forgas, 2001). These various cognitive processes can lead to biased judgements and overconfidence. Positive emotions encourages the enhanced self-perceptions and overconfidence (Sedikides and Gregg, 2008). In contrast, negative emotions may induce a self-defensive bias, leading to reduced risk-taking and under-confident behaviour (Tversky and Kahneman, 1979). Overconfidence bias leads investors to overestimate their skills and abilities to forecast market trends, selection of stocks and cumulative stock performance, which results in high-risk trading, increased transaction cost and lower returns on investments (Barber and Odean, 2001; Biais et al., 2005; Gervais and Odean, 2001; Glaser et al., 2013; Odean, 1998). Overconfident investors ignore or reject contradictory facts and only consider the information that support their investment choices (Barber and Odean, 2008). Therefore, following hypothesis is developed for the study:

'H4a: Overconfidence mediates the relationship between positive emotions and investment decision of academicians.'

'H4b: Overconfidence mediates the relationship between negative emotions and investment decision of academicians.'

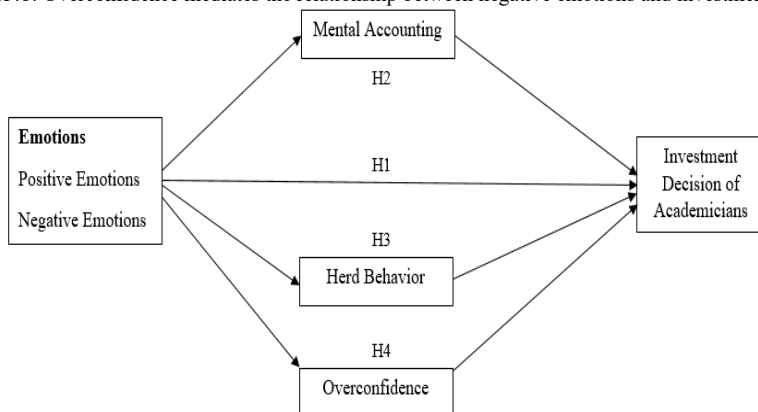


Fig. 1 Proposed model, Source: Author's own work

Methodology: The present study investigates the impact of emotions on academicians' investment decision with the mediating role of overconfidence bias, mental accounting and herding bias. Population of the study are academicians as individual investors working in various universities of India. The data was collected with the help of an adapted questionnaire.

Sampling: The study is based on primary data collected using a structured questionnaire for the survey. The data was collected from academicians working in universities in India. Firstly, university rankings based on National Institute Ranking Framework (NIRF), 2023 was used to select the sample higher education institutions. NIRF is a ranking mechanism of Government of India for performance evaluation and review based on a given set of parameters to be used as metrics for ranking the institutions. The rank band of 1-100 was used for selecting the sample universities. Then, the study applied simple random sampling in which five universities were selected (Kerala University, University of Delhi, Tezpur University, Banaras Hindu University and Jawaharlal Nehru University) and included for data collection using questionnaires.

A total of 900 questionnaires were distributed, and 425 responses with complete data were included in the study. Out of 900 questionnaires distributed, 490 responses were received. In addition, 65 responses were excluded due to inconsistent information and missing data. Hence, 425 valid responses were accounted as final data for the study. Academicians from diverse faculties (e.g. management, science, literature, etc.) served as respondents for the study.

Scales of Measurement: A two-part structured questionnaire: part-one consisting of demographic details and part-two consisting of the variables of the study is used for collecting data. The scale to measure the variables in the study were adapted from previous studies. Emotions was measured by using the nine-item scale categorised as ‘emotions towards investing’ by Brooks et al. (2022) which is an adaptation of positive and negative affect scale (PANAS, Watson et al., 1988). Out of these, four items measured positive emotions i.e., happy, excited, inspired or enthusiastic about financial investing; five items measured negative emotions i.e., fearful, ashamed, sad, angry and nervous. To measure the investment decision of academicians, a three-item scale was adapted from Waweru et al. (2008). The mental accounting bias was measured by a three-item scale adapted from Baker et al. (2019), overconfidence was measured by a four-item scale adapted from Antony and Joseph (2017), and the scale for herd behavior was adapted from Kengatharan and Kengatharan (2014). A five-point likert scale was used for measuring emotions: positive and negative, ranging from 1 = ‘not at all’ to 5 = ‘extremely’. Also, a five-point likert scale was used for measuring mental accounting, herd behaviour, overconfidence, and investment decision of academicians ranging from 1 = ‘strongly disagree’ to 5 = ‘strongly agree’.

Results

Descriptive statistics: The profile summary of respondents indicate that majority of them were male, i.e., 69 percent males and 31 percent females. The age of respondents fall within the range of < 30 years (10 percent), 30-40 years (40 percent), 40-50 years (27 percent) and >50 years (23 percent). The education levels signify that 80 percent respondents have a Ph.D. degree while 20 percent are only post graduates. Additionally, the income (in lakhs p.a.) range includes < 5 (10 percent), 5-10 (21 percent), 10-15 (33 percent) and >15 (37 percent). Furthermore, the subject specialisation includes Science and Technology (36 percent), Commerce and Management (37 percent), Humanities and Social science (19 percent) and others (8 percent).

Measurement Model: To analyse the research model, the study implemented ‘Partial least squares structural equation modelling (PLS-SEM)’ using ‘SmartPLS 4.0’ software (Ringle et al., 2015). ‘Analysing data through PLS-SEM is a two-step procedure involving assessment of measurement model followed by the assessment of structural model’ (Anderson and Gerbing, 1988; Chin, 2010; Hair et al., 2011). To establish the suitability of the measurement model, reliability and validity of the construct is assessed. As evident from Table 1, composite reliability values of the constructs are greater than 0.80 which is within the acceptable range of 0.70 – 0.90 (Hair et al., 2017). To assess the validity of the construct, convergent validity and discriminant validity is observed. ‘To establish the convergent validity, each item loading and average variance extracted (AVE) of the construct should be above 0.50’ (Hair et al., 2011), which stands true in this study as shown in Table 1. Now, to assess the differentiation of the constructs, discriminant validity is measured. ‘To establish the discriminant validity, two methods, namely, Fornell and Larcker criterion and Heterotrait - Monotrait Ratio (HTMT) is used’ (Hair et al., 2017). Table 2 shows that ‘AVE of each construct is more than its squared correlation with every other construct’ as suggested by Fornell and Larcker (1981), and hence the criteria is fulfilled. Additionally, all the HTMT values are within the specified limit i.e., below 0.90 (Henseler et al., 2015), thus the discriminant validity of the constructs has been established. ‘To check the collinearity among the items of the constructs, variance inflation factor (VIF) is measured’ (Hair et al., 2017). The highest VIF value is 2.18 for an indicator of positive emotions and all other values are less than 5.0, which indicates non-collinearity among the items of each construct as suggested by (Sarstedt et al., 2017).

Constructs	Measurement Items	Loadings	CR	AVE	α
Positive Emotions (PE)	PE1	0.757	0.884	0.656	0.824
	PE2	0.870			
	PE3	0.785			
	PE4	0.823			
Negative Emotions (NE)	NE1	0.762	0.858	0.548	0.796
	NE2	0.745			
	NE3	0.690			
	NE4	0.780			
	NE5	0.722			
Mental Accounting (MA)	MA1	0.734	0.835	0.629	0.721
	MA2	0.788			
	MA3	0.853			
Herd Behavior (HB)	HB1	0.822	0.854	0.662	0.745
	HB2	0.855			
	HB3	0.762			
Overconfidence (OC)	OC1	0.680	0.843	0.574	0.749
	OC2	0.831			
	OC3	0.797			
	OC4	0.713			
Investment Decision (ID)	ID1	0.869	0.877	0.704	0.791
	ID2	0.816			
	ID3	0.832			

*Note(s): CR: composite reliability, AVE: average variance extracted, α : cronbach alpha, Source: Author's own work

Table 1 Assessment of measurement model

	HB	ID	MA	NE	OC	PE
HB	0.814					
ID	0.213	0.839				
MA	0.134	0.273	0.793			
NE	0.229	-0.2	-0.033	0.74		
OC	0.144	0.438	0.407	-0.068	0.758	
PE	0.092	0.297	0.265	0.007	0.366	0.81

*Note(s): PE: positive emotions, NE: negative emotions, MA: mental accounting, HB: herd behavior, OC: overconfidence, ID: investment decision

Source: Author's own work

Table 2 Discriminant validity assessment

Hypothesis testing - direct paths: A structural model evaluate the hypothesised relationships within the research model. ‘The criteria to assess the structural model includes: Coefficient of determination (R^2) construct crossvalidated redundancy (Q^2) and path coefficients’ (Hair et al., 2021). ‘ R^2 shows the predictive accuracy of the research model and its value must lie between 0 to 1’ (Henseler et al., 2009; Hair et al., 2011). In this study, the value of R^2 of investment decision is 0.286, which establishes the predictive accuracy. ‘ Q^2 shows the predictive relevance of the research model and ideally the value should be more than zero’. The value of Q^2 of investment decision is 0.19, which establishes the predictive relevance of the research model.

‘To avoid model misspecification, standardised root mean square residual (SRMR) is used as a goodness of fit measure’ (Hu and Bentler, 1998). The value of SRMR is 0.073, which is within the threshold of 0.08 (Henseler and Sarstedt, 2013), thus ensuring the model fit.

The analysis of path coefficients (Table 3) shows that positive emotion has a positive and significant relationship with investment decision of academicians ($\beta = 0.147$; t-value > 1.96, $p < 0.05$), supporting H1a. In contrast, the results show that negative emotion has a negative and significant relationship with investment decision of academicians ($\beta = -0.022$; t-value > 1.96, $p < 0.05$), thus supporting H1b.

Hypothesis	Relationship	β	STDEV	T Statistics	P Values	Decision
H1a	PE $\rightarrow$ ID	0.147	0.058	2.558	0.011	Supported
H1b	NE $\rightarrow$ ID	-0.222	0.059	3.793	0	Supported

*Note(s): PE: positive emotions, NE: negative emotions, ID: investment decision, $p < 0.05$, Source: Author's own work

Table 3 Path analysis

Hypothesis testing - mediation effect

Table 4 provides a comprehensive overview of mediation analysis of PE, NE and ID through MA, HB and OC. The results reveal that H2a and H3a were not supported as there is no mediation of mental accounting ($\beta = 0.02$, $t = 1.136$, $p = 0.256$) and herd behaviour ($\beta = 0.018$, $t = 1.196$, $p = 0.232$) between positive

emotions and investment decision of academicians (Table 4). In contrary, H4a is supported as the indirect effect of overconfidence ($\beta = 0.114$, $t = 3.839$, $p = 0$) is significant (Table 4) which shows that overconfidence partially mediates the relationship between positive emotions and investment decision of academicians. In case of negative emotions, H2b and H4b were not supported as there is no mediation of mental accounting ($\beta = -0.003$, $t = 0.407$, $p = 0.684$) and overconfidence ($\beta = -0.022$, $t = 0.966$, $p = 0.334$) between negative emotions and investment decision of academicians (Table 4). In contrary, H3b is accepted as the indirect effect of herd behavior ($\beta = 0.045$, $t = 2.104$, $p = 0.035$) is significant (Table 4) which shows that herd behavior partially mediates the relationship between negative emotions and investment decision of academicians.

Hypothesis	Relationship	Coefficient	STDEV	T values	P values	Decision
H2a	PE $\rightarrow$ MA $\rightarrow$ ID	0.02	0.017	1.136	0.256	Not Supported
H3a	PE $\rightarrow$ HB $\rightarrow$ ID	0.018	0.015	1.196	0.232	Not Supported
H4a	PE $\rightarrow$ OC $\rightarrow$ ID	0.114	0.03	3.839	0	Supported
H2b	NE $\rightarrow$ MA $\rightarrow$ ID	-0.003	0.006	0.407	0.684	Not Supported
H3b	NE $\rightarrow$ HB $\rightarrow$ ID	0.045	0.021	2.104	0.035	Supported
H4b	NE $\rightarrow$ OC $\rightarrow$ ID	-0.022	0.023	0.966	0.334	Not Supported

*Note(s): PE: positive emotions, NE: negative emotions, MA: mental accounting, HB: herd behavior, OC: overconfidence, ID: investment decision, $p < 0.05$

Source: Author's own work

Table 4 Mediation Analysis

Discussion and Conclusion

The current study seeks to investigate how emotions and biases influence the investment decisions of Indian academics. The results mostly rendered empirical evidence for the proposed model, implying that emotions significantly affect investment decision, and overconfidence and herding bias act as a mediator between them. The study reveals that positive emotions exert a direct and significant impact on investment decision of academicians. Additionally, the mediating effect of mental accounting, herd behavior and overconfidence bias was also examined. Overall, the findings of the study show that H1, H4b and H5a were supported while all other hypotheses stands rejected. The results reveal that the data supports the link between positive emotions and investment decision, consistent with the findings of Wang et al. (2014). It implies that positive emotions encourage academicians to make optimistic assessment of investment alternatives and achieve higher returns. However, the findings contradict the study by Isen (2008), and Isen and Geva (1987) which was conducted on college students and states that positive emotions adversely affects the investment behavior and can hinder an investor's optimistic choices. The difference in the result may be due to disposable income available to the investors as low income individuals are more cautious while considering risky investment avenues.

The findings imply that H2 is supported, given the significant relationship observed between negative emotions and investment decisions. This result aligns with the past studies conducted on undergraduate students and graduate professionals as it was found that anger induce investments but some of the negative emotions including anxiety and fear leads an investor to make pessimistic assessments and avoid investments (Gambetti and Giusberti, 2012; Lerner and Keltner, 2000; Lerner and Keltner, 2001). The similarity in result indicates the significance of education in restricting behavioural anomalies as negative emotions are proven to be majorly affective for investment decision making of academicians.

The findings also demonstrates the mediating effect of mental accounting, herd behavior and overconfidence between positive and negative emotions, and investment decision of academicians. As the indirect effect of positive emotions and investment decision of academicians is insignificant when analysed through herd behavior and mental accounting as mediators, there is no mediation between the variables. In contrary, overconfidence partially mediates the relationship of positive emotions and investment decision of academicians because the direct effect as well as the indirect effect is significant (Zhao et al., 2010). It was also found that when mental accounting and overconfidence was introduced as a mediator between negative emotions and investment decision of academicians, the direct and indirect effect both becomes insignificant, which confirms no mediation between the given variables. However, when the mediating relationship was analysed through herd behavior, the indirect effect becomes significant and hence partial mediation is established (Zhao et al., 2010). Thus, H3b and H4a was supported and all other mediation hypotheses i.e., H2a, H2b, H3a, H4b were rejected. Since the indirect effect of these biases (mental accounting, herd behavior and overconfidence) was explored for the first time, no prior studies can be accounted for.

The results disclose the varying effect of positive and negative emotions on investment decision of academicians. As per the analysis, it was found that positive and negative emotions majorly influence the investment decision making of academicians. Also, the effect of biases as a mediator is non-significant in most of the relationships. As discussed, the results are consistent with the outcomes of prior studies of similar nature.

Implications

The findings extends the behavioral finance research by identifying the significance of positive and negative emotions, and mediation of biases, including mental accounting, herd behavior and overconfidence, in influencing investment decisions among Indian academicians. The result shows that despite being highly educated, academicians are also required to be informed of the market and the varying degrees of risk associated with their investments. The research may have implications for academics, personal financial advisors, financial analysts and government. The results imply that financial advisors must guide investors to prevent them from making investment decisions under the influence of various emotions relating to previous gains or losses. This will enable improved efficiency in addressing clients' financial needs. The results of the study could assist the government develop guidelines or programs to increase investor awareness. The findings can help government regulators and financial organisations adopt regulations to improve stock market efficiency, including information accessibility and symmetry. Financial institutions may enhance their effectiveness by tailoring their services as per the diverse mind sets of investors. The study further recommends that investors should use advanced investment techniques instead of relying on their emotions or heuristics in making investment decisions.

Limitations and future scope

The current paper has certain limitations. The study has taken academicians as respondents and thus the findings represent the effect of behavioural factors on them. Further, a comparative analysis can be done between academicians and individuals investors of varied levels of education to better comprehend the influence of education on irrational behavior of individual investors. In addition, the research was centred in India, a developing economy, where the education system and awareness of investment opportunities and ways are still in the growing phase and thus the findings are difficult to be generalised. Therefore, future studies may be conducted in developed and underdeveloped economies to better understand the difference between the education effects and investment patterns across several economies. Also, there is absence of control variables in the study (age, gender, income, work experience). Also, present study has used cross-sectional method to assess the impact at a given point of time. Further research might employ a panel data or longitudinal approach to assess the investment patterns over time for more detailed understanding. In spite of these constraints, the current research offers useful insights into how various emotions and biases influence the Indian academicians' investment decisions.

Conclusion

The current research has examined and established a direct correlation between positive and negative emotions and investment decision of academicians of universities in India. The findings demonstrate that overconfidence and herd behavior act as mediators between emotions and investment decision. The research analysed major emotions towards investing and has found significant implications in context of investment behavior. The present study highlights the need for investors to use quantitative investment strategies and techniques to help remove individual biases, emotions or heuristics while making investment decisions.

References

- Agarwal, S., Chiu, I.M., Liu, C. and Rhee, S.G. (2011), 'The brokerage firm effect in herding: Evidence from Indonesia', *Journal of Financial Research*, Vol. 34 No. 3, pp.461-479.
- Ahmad, F. (2020), 'Personality traits as predictor of cognitive biases: moderating role of risk-attitude', *Qualitative Research in Financial Markets*, Vol. 12 No. 4, pp.465-484.
- Anderson, J.C. and Gerbing, D.W. (1988), 'Structural equation modeling in practice: A review and recommended two-step approach', *Psychological bulletin*, Vol. 103 No. 3, p.411.
- Antony, A. and Joseph, A.I. (2017), 'Influence of Behavioural Factors Affecting Investment Decision—An AHP Analysis', *Metamorphosis: A Journal of Management Research*, Vol. 16 No. 2, pp.107-114.
- Anusakumar, S.V., Ali, R. and Wooi, H.C. (2017), 'The effect of investor sentiment on stock returns: Insight from emerging Asian markets', *Asian Academy of*

Management Journal of Accounting and Finance, Vol. 13 No. 1, pp.159–178.

- Ateş, S., Coşkun, A., Şahin, M.A. and Demircan, M.L. (2016), 'Impact of Financial Literacy on the Behavioral Biases of Individual Stock Investors: Evidence from Borsa Istanbul', *Business and Economics Research Journal*, Vol. 7 No. 3, pp.1–19.
- Bakar, S. and Yi, A.N.C. (2016), 'The Impact of Psychological Factors on Investors' Decision Making in Malaysian Stock Market: A Case of Klang Valley and Pahang', *Procedia Economics and Finance*, Vol. 35, pp.319–328.
- Baker, H.K., Kumar, S., Goyal, N. and Gaur, V. (2019), 'How financial literacy and demographic variables relate to behavioral biases', *Managerial Finance*, Vol. 45 No. 1, pp.124–146.
- Baker, H.K., Kumar, S. and Goyal, N. (2021), 'Personality traits and investor sentiment', *Review of Behavioral Finance*, Vol. 13 No. 4, pp.354–369.
- Biais, B., Hilton, D., Mazurier, K. and Pouget, S. (2005), 'Judgemental Overconfidence, Self-Monitoring, and Trading Performance in an Experimental Financial Market', *Review of Economic Studies*, Vol. 72 No. 2, pp.287–312.
- Bikhchandani, S., Hirshleifer, D. and Welch, I. (1992), 'A theory of fads, fashion, custom, and cultural change as informational cascades', *Journal of political Economy*, Vol. 100 No. 5, pp.992–1026.
- Brooks, C., Sangiorgi, I., Saraeva, A., Hillenbrand, C. and Money, K.G. (2022), 'The Importance of Staying Positive: The Impact of Emotions on Attitude to Risk', *International Journal of Finance and Economics*, pp.15–19.
- Brundin, E. and Gustafsson, V. (2013), 'Entrepreneurs' decision making under different levels of uncertainty: the role of emotions', *International Journal of Entrepreneurial Behaviour and Research*, Vol. 19, pp.568–591.
- Cakan, E. and Balagoyozyan, A. (2016), 'Sectoral Herding: Evidence from an Emerging Market', *Journal of Accounting and Finance*, Vol. 16 No. 4, pp.87–96.
- Chang, E.C., Cheng, J.W. and Khorana, A. (2000), 'An examination of herd behavior in equity markets: An international perspective', *Journal of Banking and Finance*, Vol. 24 No. 10, pp.1651–1679.
- Chen, G., Rui, O.M. and Xu, Y. (2003), 'When Will Investors Herd? --Evidence from the Chinese Stock Markets', *Journal of Financial Research* [Preprint].
- Chin, W.W. (2010), 'How to Write Up and Report PLS Analyses', V. Esposito Vinzi et al. (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications*, Springer, Berlin Heidelberg, pp.655–690.
- Clarke, J., Ornathanalai, C. and Tang, Y. (2010), 'Institutional Herding and Asset Price: The Role of Information', *SSRN* [Preprint], available at: <https://doi.org/10.2139/ssrn.1707868>.
- Dijk, W.W. and Zeelenberg, M. (2002), 'Investigating the appraisal patterns of regret and disappointment', *Motivation and Emotion*, Vol. 26 No. 4, pp.321–331.
- Drury, J., Carter, H., Cocking, C., Ntontis, E., Tekin Guven, S. and Amlôt, R. (2019), 'Facilitating collective psychosocial resilience in the public in emergencies: Twelve recommendations based on the social identity approach', *Frontiers in Public Health*, Vol. 7, pp.1–21.
- Durand, R., Newby, R., Tant, K. and Trepongkaruna, S. (2013), 'Overconfidence, overreaction and personality', *Review of Behavioral Finance*, Vol. 5 No. 2, pp.104–133.
- Ekman, P. (1999), 'Basic emotions', *Handbook of cognition and emotion*, p.16.
- Erdem, L.I.N. and Swait, J. (2004), 'Brand Credibility, Brand Consideration, and Choice', *Journal of consumer research*, Vol. 31 No. 1, pp.191–198.
- Fachrudin, K.R. and Fachrudin, K.A. (2016), 'The influence of education and experience toward investment decision with moderated by financial literacy', *Polish Journal of Management Studies*, Vol. 14 No. 2, pp.51–60.
- Fernandes, B. and Luiz, J.L.P. (2007), 'Risk taking in financial markets: a behavioral perspective'.
- Forgas, J.P. (2001), *Feeling and Thinking: The Role of Affect in Social Cognition*. Cambridge University Press, available at: <https://books.google.co.in/books?id=PSiU9wsJ13QC>.
- Fornell, C. and Larcker, D.F. (1981), 'Evaluating structural equation models with unobservable variables and measurement error', *Journal of marketing research*, Vol. 18 No. 1, pp.39–50.
- Fredrickson, B.L. (2004), 'The broaden-and-build theory of positive emotions', *Philosophical Transactions of the Royal Society B: Biological Sciences*, Vol. 359 No. 1449, pp.1367–1377.
- Gambetti, E. and Giusberti, F. (2012), 'The effect of anger and anxiety traits on investment decisions', *Journal of Economic Psychology*, Vol. 33 No. 6, pp.1059–1069.
- Garg, A. and Gulati, R. (2013), 'Do investors herd in Indian market', *Decision*, Vol. 40 No. 3, pp.181–196.
- Gervais, S. and Odean, T. (2001), 'Learning to be overconfident', *The review of financial studies*, Vol. 14 No. 1, pp.1–27.
- Glaser, M., Langer, T. and Weber, M. (2013), 'True Overconfidence in Interval Estimates: Evidence Based on a New Measure of Miscalibration', *Journal of Behavioral Decision Making*, Vol. 26 No. 5, pp.405–417.
- Grable, J. (1999), 'Financial risk tolerance revisited: the development of a risk assessment instrument', *Financial Services Review*, Vol. 8 No. 3, pp.163–181.
- Grinblatt, M. and Han, B. (2005), 'Prospect theory, mental accounting, and momentum', *Journal of Financial Economics*, Vol. 78 No. 2, pp.311–339.
- Hair, J.F., Hult, G.T.M., Ringle, C.M. and Sarstedt, M. (2017), *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks, Sage.
- Hair, J.F., Ringle, C.M. and Sarstedt, M. (2011), 'PLS-SEM: Indeed a silver bullet', *Journal of Marketing Theory and Practice*, Vol. 19 No. 2, pp.139–152.
- Hair, J.F., Hult, G.T.M., Ringle, C.M., Sarstedt, M., Danks, N.P., & Ray, S. (2021), 'Evaluation of the structural model'. *Partial least squares structural equation modeling (PLS-SEM) using R*, pp.115–138.
- Hatfield, E., Cacioppo, J.T. and Rapson, R.L. (1993), 'Emotional Contagion', *Current Directions in Psychological Science*, Vol. 2 No. 3, pp.96–100.
- Henderson, P.W. and Peterson, R.A. (1992), 'Mental accounting and categorization', *Organizational Behavior and Human Decision Processes*, Vol. 51 No. 1, pp.92–117.
- Henseler, J., Ringle, C.M. and Sarstedt, M. (2015), 'A new criterion for assessing discriminant validity in variance-based structural equation modeling', *Journal of the Academy of Marketing Science*, Vol. 43 No. 1, pp.115–135.
- Henseler, J., Ringle, C.M. and Sinkovics, R.R. (2009), 'The use of partial least squares path modeling in international marketing', *Advances in International Marketing*, Vol. 20, pp.277–319.
- Henseler, J. and Sarstedt, M. (2013), 'Goodness-of-fit indices for partial least squares path modeling', *Computational Statistics*, Vol. 28 No. 2, pp.565–580.
- Hinvest, N.S., Alsharman, M., Roell, M. and Fairchild, R. (2021), 'Do Emotions Benefit Investment Decisions? Anticipatory Emotion and Investment Decisions in Non-professional Investors', *Frontiers in Psychology*, Vol. 12.
- Hogg, M.A. (2016), *Social identity theory*. Springer, pp.3–17.
- Hu, L. and Bentler, P.M. (1998), 'Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification', *Psychological Methods*, Vol. 3 No. 4, pp.424–453.
- Im, M. and Oh, J.E. (2016), 'Effect of emotion regulation as a de-biasing mechanism on overconfidence in investment behavior', *Journal of Financial Services Marketing*, Vol. 21 No. 3, pp.209–225.
- Ministry of Education (2023). *National Institutional Ranking Framework (NIRF) Rankings*, India.
- Isen, A.M. (2000), 'Positive effect and decision making', *Handbook of emotions*, Vol. 2, pp.417–435.
- Isen, A.M. (2008), 'Some ways in which positive affect influences decision making and problem solving', *Handbook of emotions*, Vol. 3, pp.548–573.
- Isen, A.M. and Geva, N. (1987), 'The influence of positive affect on acceptable level of risk: The person with a large canoe has a large worry', *Organizational Behavior and Human Decision Processes*, Vol. 39 No. 2, pp.145–154.
- Jain, J., Walia, N., Singla, H., Singh, S., Sood, K. and Grima, S. (2023), 'Heuristic Biases as Mental Shortcuts to Investment Decision-Making: A Mediation Analysis of Risk Perception', *Risks*, Vol. 11 No. 4, pp.1–22.
- Jhandir, S.U. and Elahi, M.A. (2015), 'Analysis of Herd Behavior Using Quantile Regression: Evidence from Karachi Stock Exchange (KSE)', *SSRN Electronic Journal* [Preprint], (55322).
- Kamil, K.H. and Abidin, S.N.Z. (2017), 'Does Herd Behavior Exist Among Investors of Shariah-Compliant Equities in Malaysia?', *Advanced Science Letters*, Vol. 23 No. 5, pp.4968–4972.

- Kartini, K. and Nahda, K. (2021), 'Behavioral Biases on Investment Decision: A Case Study in Indonesia', *Journal of Asian Finance, Economics and Business*, Vol. 8 No. 3, pp.1231–1240.
- Kengatharan, L. and Kengatharan, N. (2014), 'The Influence of Behavioral Factors in Making Investment Decisions and Performance: Study on Investors of Colombo Stock Exchange, Sri Lanka', *Asian Journal of Finance & Accounting*, Vol. 6 No. 1.
- Kumar, S. and Goyal, N. (2016), 'Evidence on rationality and behavioural biases in investment decision making', *Qualitative Research in Financial Markets*, Vol. 8 No. 4, pp.270–287.
- Lai, C.P. (2019), 'Personality traits and stock investment of individuals', *Sustainability*, Vol. 11 No. 19, pp.54–74.
- Lakshman, M.V., Basu, S., & Vaidyanathan, R. (2013), 'Market-wide herding and the impact of institutional investors in the Indian capital market', *Journal of Emerging Market Finance*, Vol. 12 No. 2, pp.197–237.
- Langer, E.J. and Roth, J. (1975), 'Heads I win, tails it's chance: The illusion of control as a function of the sequence of outcomes in a purely chance task', *Journal of Personality and Social Psychology*, Vol. 32 No. 6, pp.951–955.
- Lazarus, R.S. (1991), *Emotion and Adaptation*. Oxford University Press.
- Ledoux, J.E. and Brown, R. (2017), 'A higher-order theory of emotional consciousness', *Proceedings of the National Academy of Sciences of the United States of America*, Vol. 114 No. 10, pp.E2016–E2025, available at: <https://doi.org/10.1073/pnas.1619316114>.
- Lerner, J.S., Li, Y., Valdesolo, P. and Kassam, K.S. (2015), 'Emotion and decision making', *Annual Review of Psychology*, Vol. 66, pp.799–823.
- Lerner, J.S., Goldberg, J.H. and Tetlock, P.E. (1998), 'Sober second thought: The effects of accountability, anger, and authoritarianism on attributions of responsibility', *Personality and Social Psychology Bulletin*, Vol. 24 No. 6, pp.563–574.
- Lerner, J.S. and Keltner, D. (2000), 'Beyond valence: Toward a model of emotion-specific influences on judgement and choice', *Cognition and Emotion*, Vol. 14, pp.473–493.
- Lerner, J.S. and Keltner, D. (2001), 'Fear, anger, and risk', *Journal of personality and social psychology*, Vol. 81 No. 1, p.146.
- Lewellen, W.G., Lease, R.C. and Schlarbaum, G.G. (1977), 'Patterns of Investment Strategy and Behavior Among Individual Investors', *The Journal of Business*, Vol. 50 No. 3, pp.296–333.
- Lichtenstein, S., Fischhoff, B. and Phillips, L.D. (1982), 'Calibration of probabilities: The state of the art to 1980', D. Kahneman, P. Slovic, A. Tversky, (Eds.), *Judgment under Uncertainty: Heuristics and Biases*, pp.275–324.
- Lin, H. (2011), 'Elucidating rational investment decisions and behavioral biases: Evidence from the Taiwanese stock market', *African Journal of Business Management*, Vol. 5 No. 5, pp.1630–1641.
- Metawa, N., Hassan, M.K., Metawa, S. and Safa, M.F. (2019), 'Impact of behavioral factors on investors' financial decisions: case of the Egyptian stock market', *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 12 No. 1, pp.30–55.
- Miller, D.T. and Ross, M. (1975), 'Self-serving biases in the attribution of causality: Fact or fiction?', *Psychological Bulletin*, Vol. 82 No. 2, pp.213–225.
- Nofsinger, J.R. (2017), 'The Psychology of Investing', *The Psychology of Investing* [Preprint], (January 2010), available at: <https://doi.org/10.4324/9781315230856>.
- Odean, T. (1998), 'Volume, Volatility, Price and Profit When All Traders Are Above Average', *Journal of Finance*, Vol. 53 No. 6, pp.1887–1934.
- Pallavi, V. (2018), *Perception on Tax Planning and Investment Pattern among Academicians*, available at: <https://api.semanticscholar.org/CorpusID:191777592>.
- Patel, A.K. and Bhatia, P. (2015), *Attitude of Academicians Towards Stock Markets: Awareness & Investment Pattern*.
- Qasim, M., Hussain, R., Mehboob, I. and Arshad, M. (2019), 'Impact of herding behavior and overconfidence bias on investors' decision-making in Pakistan', *Accounting*, Vol. 5 No. 2, pp.81–90.
- Quang, L.T., Linh, N.D., Van Nguyen, D. and Khoa, D.D. (2023), 'Behavioral Factors Influencing Individual Investors' Decision Making in Vietnam Market', *Journal of Eastern European and Central Asian Research*, Vol. 10 No. 2, pp.264–280.
- Rafaeli, A. and Sutton, R.I. (1987), 'Expression of Emotion as Part of the Work Role', *Academy of Management Review*, Vol. 12 No. 1, pp.23–37.
- Ramadan, I.Z. (2015), 'Cross-Sectional Absolute Deviation Approach for Testing the Herd Behavior Theory: The Case of the ASE Index', *International Journal of Economics and Finance*, Vol. 7 No. 3, pp.188–193.
- Raut, R.K., Das, N. and Mishra, R. (2020), 'Behaviour of Individual Investors in Stock Market Trading: Evidence from India', *Global Business Review*, Vol. 21 No. 3, pp.818–833.
- Ricciardi, V. and Simon, H. (2000), 'What Is Behavioral Finance?', *Business, Education and Technology Journal*, Vol. 2, pp.1–9.
- Ringle, C., Da Silva, D. and Bido, D. (2015), 'Structural equation modeling with the SmartPLS', *Brazilian Journal Of Marketing*, Vol. 13 No. 2.
- Russo, E.J. and Shoemaker, P.J. (1992), 'Managing Overconfidence', *Sloan Management Review*, Vol. 33 No. 2, pp.7–17.
- Sairam, A. (2016), *Study on investment pattern amongst academicians in bangalore*, available at: <https://api.semanticscholar.org/CorpusID:114590565>.
- Sarstedt, M., Ringle, C.M. and Hair, J.F. (2017), *Partial Least Squares Structural Equation Modeling*, available at: <https://doi.org/10.1007/978-3-319-05542-8>.
- Schooley, D.K. and Worden, D.D. (1999), 'Investor's Asset Allocations versus Life-Cycle Funds', *Financial Analysts Journal*, Vol. 55 No. 5, pp.37–43.
- Sedikides, C. and Gregg, A.P. (2008), 'Self-Enhancement: Food for Thought', *Perspectives on Psychological Science*, Vol. 3 No. 2, pp.102–116.
- Shah, S.Z.A., Ahmad, M. and Mahmood, F. (2018), 'Heuristic biases in investment decision-making and perceived market efficiency', *Qualitative Research in Financial Markets*, Vol. 10 No. 1, pp.85–110.
- Shefrin, H. and Statman, M. (1985), 'The disposition to sell winners too early and ride losers too long: Theory and evidence', *The Journal of finance*, Vol. 40 No. 3, pp.777–790.
- Shefrin, H.M. and Thaler, R.H. (1988), 'The Behavioral Life-Cycle Hypothesis', *Economic Inquiry*, Vol. 26 No. 4, pp.609–643.
- Shiv, B., Loewenstein, G., Bechara, A., Damasio, H. and Damasio, A.R. (2005), 'Investment behavior and the negative side of emotion', *Psychological science*, Vol. 16 No. 6, pp.435–439.
- Singh, A.K. and Kumar, M. (2022), 'Analyzing the Relationship Between Psychological Biases and Initial Public Offerings Investment Decision-making in India', *Management and Labour Studies*, Vol. 47 No. 4, pp.407–430.
- Singh, G. & Raheja, D.S. (2019), 'A Study on Factors Affecting Academicians Investment Behaviour', *Pramana Research Journal*, Vol. 9 No. 6, pp.459–472.
- Statman, M., Thorley, S. and Vorkink, K. (2006), 'Investor overconfidence and trading volume', *Review of Financial Studies*, Vol. 19 No. 4, pp.1531–1565.
- Strong, R.A. (2007), *Practical Investment Management*, Thomson/South-Western, available at: <https://books.google.co.in/books?id=UKySAAACAAJ>.
- Svenson, O. (1981), 'Are we all less risky and more skillful than our fellow drivers?', *Acta Psychologica*, Vol. 47 No. 2, pp.143–148.
- Taylor, S.E. and Brown, J.D. (1988), 'Illusion and Well-Being: A Social Psychological Perspective on Mental Health', *Psychological Bulletin*, Vol. 103 No. 2, pp.193–210.
- Thaler, R.H. (1999), 'Mental accounting matters', *Journal of Behavioral Decision Making*, Vol. 12 No. 3, pp.183–206.
- Tiedens, L.Z. and Linton, S. (2001), 'Judgment Under Emotional Certainty and Uncertainty: The Effects of Specific Emotions on Information Processing', *Journal of personality and social psychology*, Vol. 81 No. 6.
- Tversky, A. and Kahneman, D. (1979), *Prospect Theory: An Analysis of Decision under Risk*, available at: <https://econpapers.repec.org/RePEc:cla:levarc:7656>.
- Wang, H., Zhang, J., Wang, L. and Liu, S. (2014), 'Emotion and investment returns: Situation and personality as moderators in a stock market', *Social Behavior and Personality*, Vol. 42 No. 4, pp.561–569.
- Watson, D., Clark, L.A. and Tellegen, A. (1988), 'Development and validation of brief measures of positive and negative affect: the PANAS scales', *Journal of personality and social psychology*, Vol. 54 No. 6, p. 1063.
- Waweru, N.M., Munyoki, E. and Uliana, E. (2008), 'The effects of behavioural factors in investment decision-making: a survey of institutional investors operating at the Nairobi Stock Exchange', *International Journal of business and emerging markets*, Vol. 1 No. 1, pp.24–41.
- Zhao, X., Lynch, J.G. and Chen, Q. (2010), 'Reconsidering Baron and Kenny: Myths and truths about mediation analysis', *Journal of Consumer Research*, Vol. 37 No. 2, pp.197–206.