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Impact of investors' non-cognitive factors on financial behavior and financial well-being: An empirical investigation for investment performance from a self-control perspective

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Abstract

This study investigates the impact of investment characteristics on financial well-being and behavior, with an especially strong focus on financial anxiety. The study looks at non-cognitive factors such as anchoring, overconfidence, and optimism, as well as their impacts on investment performance, with the mediating role of financial management behavior and anxiety. We used confirmatory factor analysis (CFA) and structural equation modeling (SEM) to investigate 206 active traders on the Pakistan Stock Exchange. The results indicate that excessive overconfidence and anchoring have a negative impact on financial management, whereas optimism has a positive effect. Self-control influences the relationship between financial management behavior, anxiety, and investment performance, enabling investors to manage their anxiety and achieve better results. Discussions also cover the effect of management styles on various outcomes.

Keywords: Overconfidence, Investment performance, Financial behavior, Financial anxiety, Self-control

Introduction

Behavioral finance has grown significantly as researchers recognize the impact of psychological factors on investor behavior and the operation of financial markets (Shefrin, 2010; Konstantinidis et al., 2012). Prior research suggests that investors do not always make decisions in a fully rational way. Emotions, attitudes, and cognitive heuristics influence individuals' risk assessment and investment decisions (Ricciardi & Simon, 2000; Cox, 2012). Studies in behavioral finance suggest that psychological factors may be linked to market deviations and unusual price patterns (Schwert, 2003; Chaudhary, 2013). Previous research indicates that behavioral biases play a crucial role in investment decisions. Investors facing risks may rely on biases, including overconfidence, anchoring, and optimism, which can affect their expectations and behaviors (Le Luong & Thi Thu Ha, 2011; Burakov, 2014). Variations in personality and decision-making styles among investors can lead to differing financial outcomes for individuals (Browning & Crossley, 2001). Recent research confirms that biases continue to influence financial decision-making in various contexts (Ariely, 2010; Greenberg & Hershfield, 2019; Hirshleifer, 2015). The Efficient Market Hypothesis and other common economic theories say that buyers are smart and take in all the relevant information (Shiller, 2002). Still, there is proof that investors sometimes spend too much, don't save enough, or feel negative about the purchases they make (Lusardi & Mitchell, 2011; Sotiropoulos & d'Astous, 2013). These findings show that models that are based solely on logic can partially explain how people choose to spend their money. Heuristic theory explains why investors make easier choices when they are unsure about what to do (Kahneman & Tversky, 1974). Investors may rely on historical performance, intuition, or insufficient information when making decisions. The downside is that this means investors might make decisions more quickly, but the upside is that it can potentially cause errors (Betsch et al., 2016). This study examines anchoring, overconfidence, and optimism as significant non-cognitive factors that may indirectly influence investment performance by impacting individuals' money management and their anxiety regarding financial matters (Babajide Adetiloye, 2012; Scheier & Carver, 1985).

This study investigates the impacts of these biases on investors' financial behavior and well-being. It also examines how self-control serves as a limit. People with poor self-control tend to spend more, save less, and have lower long-term financial outcomes (Riaz & Iqbal, 2015). Thus, investors with greater self-control may be better able to prevent poor financial judgments and detrimental biases (Achtziger et al., 2018). The purpose of this study is to better understand how psychological factors influence financial decisions and investment performance by examining these linkages. The findings could help financial advisors, politicians, and individual investors develop strategies for smarter saving, investing, and risk management. Understanding how behavioral biases influence how people manage their money and how well they perform can result in improved financial outcomes and happier investors.

LITERATURE REVIEWS

Overconfidence

Overconfidence is a mental state in which people think they know more than they do or that their information is more accurate than it is. According to Shefrin (2007), people who are too confident tend to ignore available information because they believe too much in their own abilities. Due to this behavior, investors might not be able to properly assess risk, which could lead to adverse investment decisions (Coleman, 2016). People think they can trust their own judgement and gut feelings too much when they are overconfident (Pompian, 2006). There are two main types of overconfidence: certainty overconfidence, when investors are completely sure about their decisions, and prediction overconfidence, when investors think they can accurately guess what will happen in the future. Overconfident investors often don't pay attention to logical analysis and instead rely on their own judgement (Sadi et al., 2011). Therefore, they might create diversified portfolios and underestimate potential losses (Pompian, 2006). Barber and Odean (2002) also say that investors who are too sure of themselves usually make less money because they trade too much.

Studies indicate that markets occasionally favour overconfident leaders. Gervais and Odean (2001) say that shareholders might like managers who are too sure of themselves better than those who are rational. Shiller (2002) says that overconfidence is a human trait, not a market trait. However, persistent overconfidence can result in unprofitable trading (Barber & Odean, 2001). People who have overconfidence bias may show three things: over-precision, over-estimation, and over-placement (Moore & Healy, 2008). Over-precision means being too sure of your judgement, overestimation means thinking you did better than you really did, and over-placement means thinking you are better than others (Larrick et al., 2007). These traits make people more likely to take risks (Odean, 1999). There are also differences between genders. Women are generally less overconfident and trade less often, which leads to better performance than men (Barber & Odean, 2001). Even though irrational behaviour can sometimes make the market more efficient by adding information, repeated success can make people more confident and lead to market inefficiency (Malkiel, 2003; Ko & Huang, 2007).

Overall, overconfidence generally influences investment behaviour, trading frequency, and overall performance. While it may offer advantages in certain instances, it often results in excessive risk-taking and unfavourable outcomes.

Anchoring

People who anchor their decisions on an initial reference point and don't change them enough afterward are said to be anchoring (Aziz & Khan, 2016). When deciding whether to buy or sell, investors often look at the opening or initial share prices instead of the true historical values. Anchoring makes it hard for people to make rational decisions because they put too much trust in early information (Baker & Ricciardi, 2014). Investors don't change their estimates enough when new information comes out (Barberis & Thaler, 2003). Because of this, they might not understand changes in stock prices and act inappropriately. According to Cen et al. (2013) and Shah et al. (2018), anchoring bias can affect price predictions, the quality of analysis, and the overall efficiency of the market. Forecasters may base their predictions on past economic indicators, which can lead to systematic mistakes (Campbell & Sharpe, 2009). Investors are more likely to make mistakes and lose money when they base their decisions on unrelated reference points (Chaudhary, 2013).

Optimism

Optimism bias is when an investor thinks that adverse events are unlikely to happen and that things will always go well in the future (Heaton, 2002). While optimism can drive people to take action, too much of it stops them from carefully thinking about financial risks (Icekson et al., 2014). Investors who are optimistic trade more aggressively and may not realise how much they could lose (Puri & Robinson, 2007). Managers who are too optimistic may also make biased decisions about financing and mergers for the company (Perek & Oran, 2013). Mood affects optimism: when you're in a favourable mood, you're more likely to take risks, and when you're in a poor mood, you're less likely to trust your investments (Baker & Nofsinger, 2002). Optimism affects how people expect their investments to do, which can lead to unrealistic predictions, bubbles, and bad financial decisions (Brown & Cliff, 2005; Hüsler et al., 2013). Optimism can lead to debt and financial instability when adverse outcomes are ignored, even though it can make people more likely to invest in risky portfolios (Balasuriya et al., 2010; Zia-ur-Rehman et al., 2017).

Financial Anxiety

Financial anxiety is the stress and worry that comes from making financial decisions. It changes how we see things, how we make decisions, and how we weigh risks (Slovic et al., 2004). Anxious investors often see situations as more dangerous and uncertain, which makes them less likely to take risks (Smith & Ellsworth, 1985). Some people may act carefully when they are worried about money, but others may avoid it, make poor choices, or even become depressed (Archuleta et al., 2013; Black et al., 2013). High anxiety during financial stress can hinder focus and decision-making (Krane & Williams, 2006).

Financial Management Behavior

Financial management behaviors encompass choices related to budgeting, savings, investing, credit management, and cash flow (Horne & Wachowicz, 2002). Effective money habits help you succeed in the long run (Jorgensen, 2007), but detrimental habits like spending too much and not planning ahead make you more vulnerable financially (Shapiro & Burchell, 2012). Knowing about money is important, but how you feel about yourself and how you see yourself also have a big impact on how you handle your money (Joo & Grable, 2004; Perry & Morris, 2005). Young people have many problems because they can easily acquire credit and feel pressure to live a certain way.

Self-Control

Self-control means controlling your thoughts, feelings, and actions to reach your long-term goals (Baumeister et al., 2007). People who have a lot of self-control are better at saving money, staying out of too much debt, and making smart investment decisions (Tangney et al., 2018). On the other hand, acting on impulse can lead to spending too much, not saving enough, and financial stress (Gathergood, 2012).

Investment Performance

Investment performance is the result of making investment decisions, and it is usually measured by returns, risk levels, portfolio growth, and how well assets are allocated. Satisfactory investment performance shows that the investor can weigh the expected returns against the acceptable risk. Overconfidence, anchoring, optimism, financial anxiety, and a lack of self-control are all behavioral biases that have a large effect on performance. Investors who are too sure of themselves trade too much and often receive returns that are lower than average. Anchored investors don't change their minds when they receive new information, and optimistic investors don't take enough risk and could lose money they didn't expect. Worried individuals may refrain from investing or panic sell their stocks. People who lack self-control may make rash investment decisions. Investment performance is based on psychological factors and behaviors, not just financial knowledge. Investors can make better decisions, achieve better results from their portfolios, and make fewer mistakes if they understand these relationships.

Theoretical Background

Behavioral finance looks at how psychological factors affect the choices investors make. This study employs heuristic theory to understand how individual investors make their investment decisions.

Heuristic Theory

Heuristics are simple, useful "rules of thumb" that help people make decisions quickly, especially when they don't have a lot of information or when things are complicated (Kahneman & Egan, 2011; Tversky & Kahneman, 1974). Investors use heuristics to make decisions easier, but they can also cause cognitive biases (Ricciardi & Simon, 2001; Waweru et al., 2008). Overconfidence, anchoring, and representativeness are all common heuristic biases that can change how people invest (Kahneman & Tversky, 1974; Waweru et al., 2008).

Behavioral Factors

Behavioral finance is a discipline within finance that examines the influence of emotions, cognitive biases, and psychological flaws on financial decision-making. These factors may influence the trading performance of individual investors while simultaneously challenging conventional market efficiency ideas (Shefrin, 2015; Härtel & Liu, 2012).

Behavioral Biases

Overconfidence: Investors are much more active than they should be by thinking that they will gain more from the market and often ignoring the risks (Baker et al., 2017; Waweru et al., 2008).

Anchoring: Investors base their present-day decisions on past data or prices, even if the information has become irrelevant (Pompian, 2011; Akhtar & Thyagaraj, 2018).

Optimism: When investors have performed well, they tend to be more risk-taking; however, they become more conservative if they have endured losses (DeBondt & Thaler, 1985).

Self-control: Self-control means being able to say no to something that makes you feel good right now and pick the better choice instead. It's something that makes people's financial decisions better and lessens the effect of bad habits (Vohs et al., 2018).

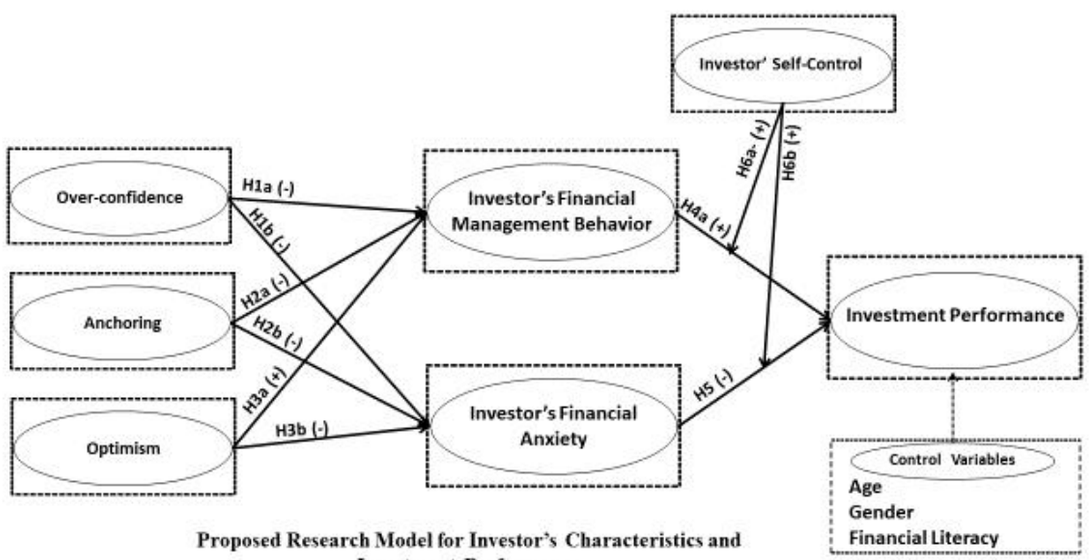
Individual Investors

Research on individual investors examines their saving patterns, risk tolerance, and investment strategies (Thaler & Benartzi, 2004; Wood & Zaichkowsky, 2004). This study analyses the impact of heuristic biases on financial management behaviour and financial well-being, which subsequently affect investment performance.

Conceptual Framework

The theoretical foundation of this study is heuristic theory, which is the basis of the research. Heuristics facilitate decision-making for the investors during the uncertain times; however, they can also lead to bias. The variables considered in the study are overconfidence, anchoring, and optimism as independent variables; financial management behavior, financial anxiety as mediators; self-control as a moderator; and investment performance as a dependent variable. The heuristics of the investors come into play through financial management behavior and financial anxiety, thus not directly affecting investment performance. Higher self-control would enhance both and reduce the negative impacts of biases. The results are more accurate since financially literate individuals have been controlled for.

Figure 1 Proposed model



Proposed Research Model for Investor's Characteristics and Investment Performance

Overconfidence and Financial Management Behavior

The phenomenon of overconfidence is characterized by the fact that individuals overrate their capabilities and lower their risks (Shah, Ahmad, & Mahmood, 2018). It has been found that, to a large extent, overconfident investors do not only trade but also judge their skills incorrectly and consequently, fall into the trap of losing money (Babajide & Adetiloye, 2012; Barber & Odean, 2001). The investors with the highest level of education are the ones that most suffer from this psychological bias by interpreting their victory as a sign of their exceptional skill (Gervais & Odean, 2001; Graham et al., 2009). Thereby, it can be concluded that overconfidence is a factor that hampers financial management behavior.

H1a: Overconfidence is negatively associated with financial management behavior.

Overconfidence and Financial Anxiety

Investors may overlook the risks due to their overconfidence, and if the results are not as positive as expected, it may cause anxiety (Baker & Nofsinger, 2002; Shefrin & Statman, 2000). Stressful situations also worsen the impairment of attention and making decisions, thus raising the anxiety over finances (Kim & Diamond, 2002; Beckmann et al., 2013).

H1b: Overconfidence is negatively associated with Investors financial anxiety.

Anchoring and Financial Management Behavior

Anchoring is a case when the first piece of information is crucial for the investors, and the implication is that it could lead to biased financial decisions and poor control over finances (Tversky & Kahneman, 1974; Shah et al., 2018). The extent of anchoring's effect may vary according to the individual's knowledge and level of expertise (Furnham & Boo, 2011).

H2a: Anchoring is negatively associated with financial management behavior

Anchoring and Financial Anxiety

Anchoring could also escalate financial anxiety by causing investors to give more weight to the initial information regardless of the new evidence, thereby resulting in stressful and avoidant behaviours (Barberis & Thaler, 2003; Radomsky et al., 2018).

H2b: Anchoring is negatively associated with Investors financial anxiety.

Optimism and Financial Management Behavior

Optimistic investors are more prone to saving, making wise financial decisions, and thus obtaining better results (Puri & Robinson, 2007; Xiao et al., 2009). Optimism acts as a stimulus for taking the initiative in financial management and for showing the favourable investment attitude.

H3a: Optimism is positively associated with financial management behavior

Optimism and Financial Anxiety

Optimistic buyers feel like they have more control over the situation, which makes them less worried about their money. Even if you have a favourable outlook on the future, you may still feel anxious in scenarios where you don't have much control (Coval & Thakor, 2005; Nesse & Ellsworth, 2009).

H3b: Optimism is negatively associated with Investors financial anxiety.

Financial Management Behavior, Financial Anxiety, and Investment Performance

Proper financial management makes investments work better, but financial stress has the reverse effect, causing incorrect choices and undesirable results (Joo, 2008; Lim et al., 2014).

H4a: Financial management behavior is positively associated with investment performance.

H4b: Investors financial anxiety is negatively associated with investment performance.

Self-Control

Self-control provides investors the power to resist their urges and make long-term financial decisions. An investor with greater self-control will not only experience the advantages of effective financial management regarding investment performance but will also mitigate the negative impact of financial anxiety (Muraven et al., 2006; Baumeister et al., 2007).

H5a: self-control moderate positive relationship between Investors financial management behavior and investment performance: Such that Investment Performance will be higher when Investors self-control will be higher vice versa.

H5b: self-control moderate positive relationship between Investors financial anxiety and investment performance: Such that Investment Performance will be higher when **Investors self-control will be higher vice versa.**

Control Variables

Financial Literacy: Financial literacy refers to the capacity to understand and apply financial information correctly. This influences how much you save, how you invest, and how you manage your money in general (Mason and Wilson, 2000; Lusardi & Mitchell, 2007).

Material And Methods

Research Design

A cross-sectional design was the method used in the present investigation, which analyzed the connection between the different non-cognitive factors (overconfidence, anchoring, and optimism) and investment performance and then utilized financial management behavior and financial anxiety as mediators and self-control as a moderator.

Sample and Data Collection

The population consisted of stock market investors located in Karachi and Islamabad. A total of 300 questionnaires were sent out with the help of snowball sampling, and 206 of these responses were considered valid (68.06% response rate). Self-administered questionnaires were the means of data collection in order to minimize any bias and allow the respondents to give well-thought-out answers.

Measures

The measurement of all variables was done using a 7-point Likert scale. Major variables consist of overconfidence (3 items, $\alpha = 0.950$), anchoring (2 items, $\alpha = 0.978$), optimism (4 items, $\alpha = 0.957$), financial management behavior (12 items, $\alpha = 0.978$), financial anxiety (4 items, $\alpha = 0.951$), self-control (9 items, $\alpha = 0.983$), and investment performance (3 items, $\alpha = 0.975$). Financial literacy was evaluated using four knowledge-based questions.

Data Analysis

The analysis of the data was completed with the use of SPSS and AMOS. All the questionnaires that contained missing or biased responses were discarded. Descriptive statistics, confirmatory factor analysis (CFA), Cronbach's alpha, and structural equation modelling (SEM) were performed to evaluate reliability and validity and test the hypotheses. CFI (≥ 0.90) and RMSEA (≤ 0.10) were the criteria used for model fit evaluation.

Ethical Considerations

The participants gave their informed consent before the start of the research. It was guaranteed that the participants' information would be kept confidential and their identities anonymous. The data collection was done with the sole purpose of research and thus avoiding any potential harm to the respondents.

RESULTS AND DISCUSSION

Measurement model

Generally, fit indices for the proposed framework were calculated, and the resulting values are commonly accepted within the range, for example, CMIN <5, NFI>0.90, IFI>0.90, CFI>0.90, and RMSEA<0.10. This model had a sufficient fit CMIN=711.339, DF=357, CMIN/DF=1.993, NFI=0.915, RFI=0.904, IFI=0.956, CFI=0.956, RMSEA=0.070 and Each of these values are recommended and estimated fit (Hair, Black, Babin, Anderson and Tatham, 2010). so, the result has appeared as a valid model fit shown in table 1.

Structural model

Generally, fit indices for the proposed framework were calculated using AMOS. The resulting values are commonly accepted within the range like CMIN <5, NFI>0.90, IFI>0.90, CFI>0.90, and RMSEA<0.10 (Anderson and Gerbing, 1988). Structural model has acceptable fit CMIN 664.829, DF=363, CMIN/DF=1.831, NFI=0.921 RFI=0.912 IFI=0.962 CFI=0.962 RMSEA=0.064 so, result has shown as valid model fit result are shown in table 1.

Table 1 Path Analysis

Model Test	CMIN/DF <5	RFI >.9	NFI>.9	IFI>.9	CFI>.9	RMSEA <.01
Structural Model	1.831	.912	.921	.962	.962	.064
Measurement Model	1.993	.904	.915	.956	.956	.070

Table 2 Descriptive statistics, reliability and confirmatory factor analysis.

Constructs	Mean	SD	Loading	Cronbach alpha	CR
OV	3.7055	2.39842	0.785-0.890	0.950	0.89
OPT	3.3184	1.24968	0.781-0.911	0.957	0.95
ANC	3.2015	2.10156	0.950-0.952	0.978	0.95
ANX	4.8095	1.20230	0.875-0.926	0.978	0.94
FMB	3.7998	1.17031	0.796-0.934	0.951	0.98
SC	3.8103	1.30276	0.792-0.927	0.983	0.98
IP	2.8026	1.06579	0.948-0.953	0.975	0.97

Note: All factor loading are significant at the $p < 0.001$

The acceptable reliability of AVE, CR, and Cronbach's Alpha are 0.5, 0.7, and 0.8, respectively (Chin, 1998). I have conducted Confirmatory factor analysis to observe the study where measures show factor loadings more than 0.5 (Hair, Black, Babin, Anderson and Tatham, 2010). The resulting values of factor loading (between 0.78 and 0.953) are fall in the acceptable range so CFA results indices overall model fit. Cronbach's Alpha is utilized to test the all items internal consistency to ensure that reliability of measurements are further uses. The general Cronbach's alpha for the seven factors is 0.897 which shows a high level of internal consistency for the scale utilized. The Cronbach's Alpha for the seven categories, namely, Overconfidence, Anchoring, Optimism, Financial Management Behavior, Financial anxiety and investment performance are 0.950, 0.957, 0.978, 0.978,0.983 and 0.975 respectively which are also greater than 0.6. Along these lines, it is confirming from results of reliability analysis that consistency for each factors is in acceptable ranges as the reliability should be accepted if it is more than 0.60 (Gliner, Morgan and Leech 2011).

Table 3 Correlation matrix, reliability and the square root of AVE

Variables	OC	OPT	ANC	ANX	FMB	SC	IP
Overconfidence	**0.85**						
Optimism	-.311**	**0.88**					
Anchoring	.097ns	-.044 ns	**0.94**				
Anxiety	-.181**	.085 ns	-.352**	**0.90**			
Financial Management Behavior	-.514**	.289**	-.186**	.316**	**0.87**		
Self-Control	-.165*	.351**	-.005 ns	.147*	.189**	**0.89**	
Investment Performance	-.269**	.211**	.020 ns	-.098 ns	.174*	.175*	**0.94**

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

The correlation analysis states a significant association among independent, mediating and dependent variables. The overconfidence and anchoring having negative association with mediating variable financial behavior having Pearson correlation values of -514 and -.186 respectively while optimism have positive association with financial behavior having Pearson value of .289. On the other hand, overconfidence and anchoring have negative and significant association with financial anxiety and Pearson values are -.181, -.352 respectively, while optimism have positive and no significant correlation value is 0.85. the significance value p< 0.01 asserting a strong significant positive association except optimism and anxiety have negative association. The mediating variable financial management behavior having a significant and positive correlation with dependent variable investment performance having correlation value of .174 and having significance value P<0.01 while financial anxiety having a non-significant and negative correlation with dependent variable investment performance having correlation value of -.098. self-control which is playing moderation role between mediators and dependent variable having significant and positive association with financial management behavior and financial anxiety having Pearson correlation value of .147 and .189 respectively. so self-control is influencing positively to mediating and dependent variable.

Hypotheses Testing

All hypothesis of the model has shown significant result except for one which is insignificant. The analysis shows that the Overconfidence has a significant negative association with Financial Management behavior (H1a; β= -0.223, p < 0.001), and with Financial anxiety (H1b; β= -0.091 p < 0.05) thereby H1a and H1b is accepted. Anchoring has significant negative association with Financial management behavior (H2a; β = -0.79, p < 0.05) and with financial anxiety (H2b; β = -0.193, p < 0.001) thus both H2a and H2b hypothesis are supported. Optimism has a positive and significant association with Financial management behavior (H3a; β=0.132 p < 0.000), while optimism has a negative and insignificant association with financial anxiety (H3b; β= -0.026 p < 0.), which mean H3a and H3b are fully supported while H3b is not supported.

In the fourth hypothesis I find that financial management behavior has a significant and positive association with Investment performance (H4; β = 0.207, p < 0.001) which is fully supported. The fifth hypothesis is Financial anxiety has a significant and negative association with investment performance (H5; β = -0.151, p < 0.01) which is also supported.

The model illustrated that 0.312 is the value of R Square of Financial management behavior that one unit change in overconfidence, anchoring and optimism produce 31.2% change in financial management behavior, likewise 0.156 is the value of R square of financial anxiety that one unit change in overconfidence, anchoring and optimism produce 15.6% change in financial anxiety.

The dependent variable namely investment performance explains 0.206 variances in the model. that investigate that one unit change in financial management behavior and financial anxiety produce 20.6% change in investment performance. None other variable has significant impact on the dependent variable (investment performance), so I determine that the hypothesized model is fully supported and accepted.

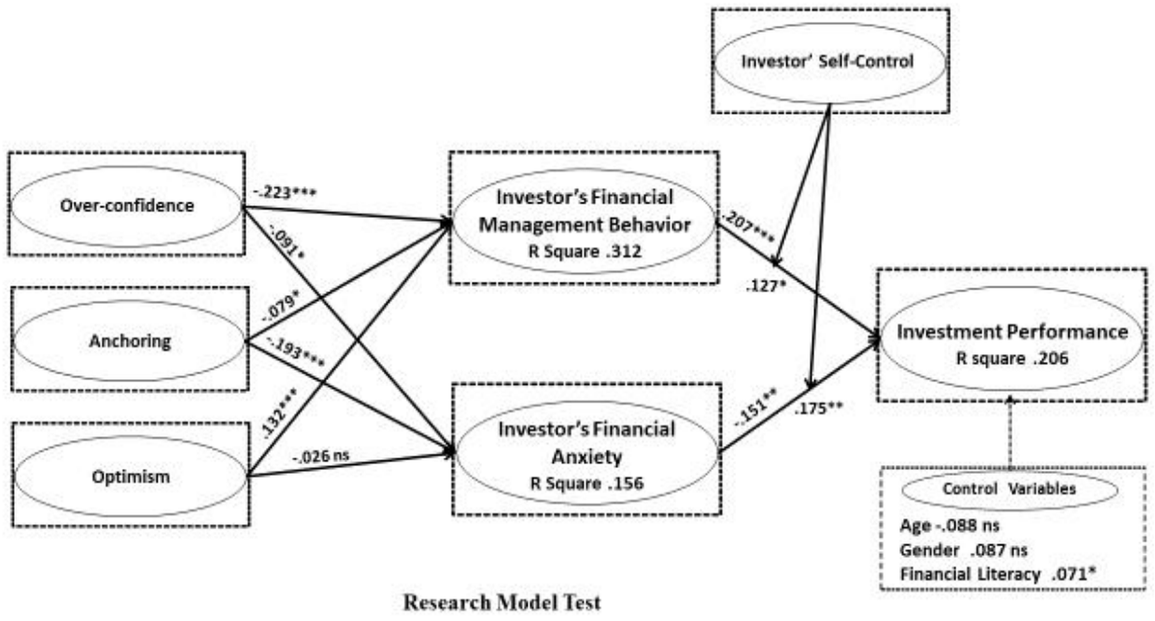


Figure 2 Result of Model Test

Moderating Role of self-control

The bootstrapping approach was used to estimates moderating effect. Preacher and Hayes (2008) have described a complete process to observe the role of Self-control as a moderator positively moderates financial management behavior and Investment performance, (H6a; $\beta = 0.127$, $p < 0.05$) hence, H6a is fully supported. On the other hand, self-control as moderator showing positively moderates financial anxiety and Investment performance, (H6b; $\beta = 0.175$, $p < 0.01$) so H6b is also supported variable.

As shown in fig 4.2 graphs of moderation analysis graphs, that shows that interaction and main effect of IV and DV exist so moderation also exist. The relationship of financial behavior and investment performance is being moderated by self-control if we look down the graph, we can see that self-control is strengthening the relationship between financial behavior and investment performance. In figure 4.3 graphs shows that, the relationship of financial anxiety and investment performance is being moderated by self-control.so if we look at graph we can see that self-control strengthen the relationship between financial anxiety and investment performance.

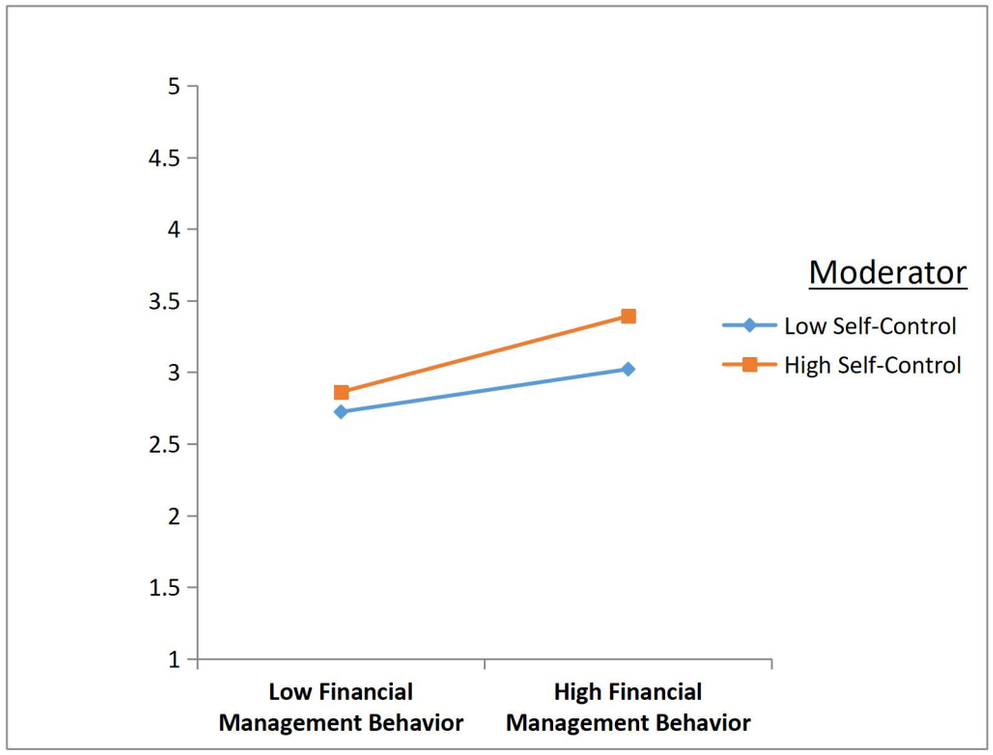


Figure 3 Moderating effect of self-control on FMB and IP.

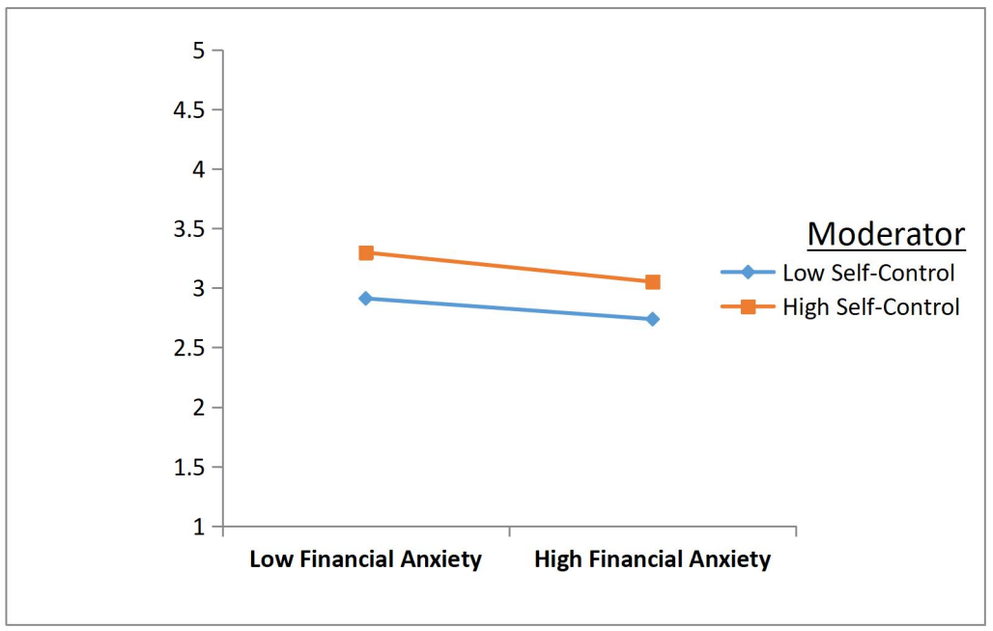


Figure 4 Moderating effect of self-control on FA and IP

DISCUSSION

The key objective of the present research was to analyze the impact of overconfidence, anchoring, and optimism on the investment performance of individual investors with the mediating role of financial management behavior and financial anxiety. I also established the moderating role of Self-control which enhances the impact of Financial management behavior and financial anxiety on investment performance on the Positive consequences attributed to self-control.

Heuristics play a significant part in the making of anomalies. There are three components of heuristic which uses in this research such as overconfidence, anchoring and optimism are the main considerations that investors utilized to avoid complexity in the decision-making process. I explore that heuristics (overconfidence, optimism, and anchoring) not directly affect the performance of investors; their belongings are the consequence of mediation through financial management behavior and financial anxiety.

On the basis of behavioral finance literature, this connection of hypotheses was developed. The data was collected on 7-point Likert scale questionnaires which were adapted from various authors. The collected data was checked for reliability and correlation analysis and Path analysis were run. On the basis of results obtained from the analysis of the six hypotheses, and the results mostly support our hypothesized model.

H1a: Overconfidence is negatively associated with financial management behavior.

In SEM, the P-value of overconfidence is less than 0.001 shows that overconfidence has a significant and negative association with Financial management behavior thus our first hypothesis is supported. Overconfidence has a negative association with the financial management behavior if the one unit of financial management behavior increase then .223 unit of financial management behavior decreases. It is determinate through the beta value. This hypothesis is reliable with the Odean (1998) research, express that investor who is overconfident unreasonably hopeful about the future. Their mentality toward stock determination some of the time makes the market inefficient. Thus proved by results that Investors who are overconfident they are lacking with the planning of financial budgets and save less.

H1b: Overconfidence is negatively associated with Investors financial anxiety.

In the model test, the p-value of overconfidence is less than 0.01 shows that overconfidence has a significant and negative association with financial management behavior thus our second hypothesis is supported. Overconfidence has a negative association with the financial anxiety if the one unit of financial anxiety increase then .091 unit of financial anxiety is decreased. Furthermore, Ahmed and Duellman (2013) have found negative and significant association between overconfidence and financial anxiety. Thus it is proved that overconfident investors may feel anxiety sometimes which affect them negatively.

H2a: Anchoring is negatively associated with financial management behavior.

In the model test, the p-value of anchoring is less than 0.01 shows that anchoring has a significant and negative association with financial management behavior thus our hypothesis is supported. Anchoring also has a negative association with financial management behavior. If one unit of financial management behavior is increased, then .079 unit of anchoring is decreased. This hypothesis is reliable with Anderson (2010) argument that explains that recent experience helps investors on the way to picking the stock. Thus it is proved that investors rely on previous pieces of information for making financial planning.

H2b: Anchoring is negatively associated with Investors financial anxiety.

In a model test, the p-value of anchoring is less than 0.001 shows that anchoring has a significant and negative association with financial anxiety thus our hypothesis is supported. Anchoring also has a negative association with financial anxiety. If one unit of financial anxiety is increasing, then 1.193 unit of anchoring is decreased. The hypothesis is reliable with a strong argument of (Tversky and Kahneman, 1974) Investors rely on an initial piece of information for selecting stock where they want to invest, which in result focus around the change in the price of the stock and target famous stock that is motivation to produce financial anxiety as mediator.

H3a: Optimism is positively associated with financial management behavior.

In the model test, the p-value of optimism is less than 0.001 shows that optimism has a significant and positive association with financial management behavior thus our hypothesis is supported. Optimism bias has a positive association with the in financial management behavior. If one unit of financial management behavior is increased, then .132 unit of availability bias is increase.

This hypothesis is support by argument of Strömbäck et al. (2017) that individual who are optimistic they have good financial behavior. It shows that optimistic people save more for getting more returns.

H3b: Optimism is negatively associated with Investors financial anxiety.

In the model test, the p-value of optimism is greater than all confidence interval shows that optimism has an insignificant and negative association with financial anxiety thus our hypothesis is not supported. Optimism bias has a negative association with the in financial anxiety. If one unit of financial anxiety is increasing, then .026 units of optimism bias

is decreased. it can be justified as Financial well-being can influence positively, psychological wellness, personal satisfaction, relationship quality, general prosperity, achievement and bliss for people (Hubler, Burr, Gardner, Larzelere and Busby, 2016). But it can affect negatively if there is an imbalance in financial well-being such as some emotions like anxiety. Strömbäck et al. (2017) explain that individuals who are more optimistic they are more confident about their financial situations as well as less anxious about their financial matters, so optimism can also affect positively to financial anxiety.so I can say optimistic investors may not feel anxiety during the decision-making process.

H4a: Financial management behavior is positively associated with investment performance.

In a model test, the p-value of financial management behavior is less than 0.001 shows that financial management behavior has a significant and positive association with Investment performance thus our hypothesis is supported. Financial management behavior has a positive association with investment performance. If one unit of financial management behavior is increased, then .207 unit of Investment Performances is increased. (Odean, 1998; Gao and Lin, 2014) argument show consistency of the proposed hypothesis that individual investors meet expectation in the market. However, challengers (Ivković and Weisbenner, 2005) contends that in the presence of anomalies individual investor earns an abnormal profit.

H4b: Investors financial anxiety is negatively associated with investment performance.

In the model test, the p-value of financial management behavior is less than 0.005 shows that financial anxiety has a significant and negative association with Investment performance thus our hypothesis is supported. Financial anxiety has a positive association with investment performance. If one unit of financial anxiety is increasing, then .175 unit of Investment Performances is decrease. Veld and Veld-Merkoulova (2008) argue that investors utilize greater than one anxiety measures to get significant results in investment performance.

H5a: self-control moderate positive relationship between Investors financial management behavior and investment performance: Such that Investment Performance will be higher when Investors self-control will be higher vice versa.

In Moderation test, the p-value of self-control is less than 0.01 shows that self-control significantly and positively moderates the association of financial management behavior and investment performance thus our hypothesis is supported. Self-control positively moderates the relation between financial management behavior and investment performance. If one unit of financial management behavior is increased, then .127 unit of Investment Performances is increased.

Better management of finance is associated with high self-control, it leads investors to spend less and save more, also their focus is on long-term outcomes (Tangney, Boone and Dearing, 2005; Baumeister, 2002).so self-control positively and significantly affect the financial management behavior which take toward better investment performance.

H5b: self-control moderate positive relationship between Investors financial anxiety and investment performance: Such that Investment Performance will be higher when Investors self-control will be higher vice versa.

In Moderation test, the p-value of self-control is less than 0.05 shows that self-control significantly and positively moderates the association of financial anxiety and investment performance thus our hypothesis is supported. Self-control positively moderates the relation between financial anxiety and investment performance. If one unit of financial anxiety is increasing, then .175 unit of Investment Performances is the increase. This is supported by argument of Strömbäck et al. (2017) that self-control influence financial well-being all aspects positively.

Limitations

In future research, I can address these limitations. The study is restricted to the information provided by the investors of Pakistan only. The sample size was small. The study is conducted on 206 respondents only. Moreover, the time duration was also short. I can take a big sample size in the future to make the result more appropriate.

In this paper there was only focus on individual investors due to time constraints in future researcher can make their result more reliable related investment performance of investors by paying attention to the behaviors of institutional investors, such security organizations and banks.

Our study has a measurement weakness because I have used two and three-item scale in some constructs like anchoring and overconfidence. In the future by modifying items of particular constructs researchers can check the impact of anchoring and overconfidence on the behavior of investors and the well-being of investors.

In this study for testing research model only self-reported survey method is used, further studies can triangulate these findings by using multiple methodologies and elaborate measuring method. I utilized pre-recognized antecedent factors of heuristics bias.

Our findings recommend that these biases clarify just a part of the change in the heuristic variables and the resulting constructs. Numerous different components could have influences on financial management behavior and financial anxiety towards investment performance, for example, the illusion of control, an illusion of knowledge, gambler fallacy, conservatism.

Also, in future research, it is suggested that this study can also be conducted by taking financial management behavior as a dependent variable and Heuristic bias as an independent variable. Moreover, the results of optimism with financial anxiety are not supported so I can take optimism as a moderator between financial anxiety and investment performance.

Contributions and Implications

I contributed to Heuristic Theory by investigating financial management behavior and financial anxiety which is mostly discussed other psychological phenomenon such as conservatism.

On other hand, investors are happy with their investment performance in the presence of anomalies since they utilized heuristics in an effective way. Our findings can be utilized by specialists and professionals (Gibson and Sanbonmatsu, 2004).

I examined individual difference based on self-regulatory perspective i.e., Self-Control. I also contribute to the extant literature on non-cognitive factors, which is relatively overlooked and mostly focused on cognitive aspects such as financial literacy. It is recommended that Individual investors overcome the non-cognitive factors Institutional investors trained their employees to reduce the influence from non-cognitive factors.

This study has implications for the researchers in the area of behavioral finance as it highlights the behavioral anomalies specific to individual investors. It provides evidence that the individual investors do not behave rationally rather they behave like humans. There are behavioral factors indicated in this study that significantly influence the decision-making process of individual investors. The results of this study can be used to extend the practical, theoretical and methodological boundaries of literature on behavioral finance.

Conclusion

This investigation emphasizes the perception that financial management behavior and financial anxiety have a mediating role in estimating individual investment performance. It demonstrates that investor behavior established by heuristics bias and effects investment performance. in light of the facts when using heuristics to make investment decisions, it is essential for investors to consider financial management behavior and financial anxiety, the reason is that these anomalies impact investment performance of individual investors.

At a more extensive level, this study depends on existing knowledge of behavioral finance (heuristics theory) by enlightening the instruments through which heuristics influence investment performance. Additionally, when the mediating variable financial management behavior and financial anxiety was added to the model as mediating variable, the three independent variables overconfidence, optimism and anchoring were still having a significant impact on investment performance but their level of magnitude restricted by mediators.

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