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Risk capacity and investment priority as moderators in the relationship between big-five personality factors and investment behavior: a conditional moderated moderated-mediation model

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Abstract
This paper aims to explore the relationship between big-five personality traits and investment behavior, particularly in the Indian context. Riding on the theory of planned behavior (TPB), we built a multi-layered moderated moderated-mediation model exploring the complex relationships between personality traits, investment attitude, and investment strategy. We collected data from 934 respondents from the southern part of India and analyzed using the Hayes (2018) PROCESS macros to test the hypotheses. The results indicate that (i) Personality traits (extraversion, emotional stability, conscientiousness, agreeableness, and openness to experience) are positively related to investment attitude and investment strategy, (ii) Investment attitude is positively related to investment strategy, (iii) Risk capacity moderates the relationship between personality traits and investment attitude, and (iv) Investment priority (second moderator) moderates the moderated relationship between personality traits, risk capacity (first moderator), and investment strategy mediated through investment attitude. Finally, the implications for behavioral finance and practicing managers are discussed.

Keywords Big-Five personality traits · Investment attitude · Investment strategy · Risk capacity · Investment priority · Moderated-mediation model

1 Introduction

This paper aims to shed light on the relationship between personality factors and investment behavior. Investment decisions are crucial for managing the present needs and future goals, and individuals and families spend a considerable amount of time and resources in financial planning (Baker et al. 2021; Barber and Odean 2013; Nadeem et al. 2020), and a plethora of research has been documented about the importance of such decisions (Aydemir and Aren 2017; Aydin and Selcuk 2019; Saurabh and Nandan 2018) The literature on the

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portfolio of choices and risk attitudes has been exhaustive (Barasinska et al. 2012; Friend and Blume 1975; Heo et al. 2021; Kapteyn and Teppa 2011; Kimball et al. 2008; Riley and Chow 1992).

For the last two decades, researchers in behavioral finance have been studying how the cognitive thinking process of individuals affects their investment decisions: saving, spending, borrowing, lending, and short term versus long term investments (Belsky and Gilovich 1999). There is growing consensus among the researchers in psychology, economics, and finance that investors behave irrationally and do not follow rational decision-making processes, thus resulting in making monumental mistakes in their decisions (Dam 2017), and some researchers documented there are significant differences in the behavior of investors (Riitsalu and Murakas 2019; Wood and Zaickowsky 2004). Often these differences depend on the personality of individuals, socio-economic background, risk tolerance, risk-seeking, and risk-avoidance and risk capacity, and hence researchers focus on studying these variables (Bhoj 2019; Kansal and Singh 2013; Shtudiner 2018).

The financial tsunami that engulfed the world sometime between 2007–2008, the researchers have switched their gears from traditional finance where investors' decisions are rational to argue that decisions are irrational most of the time. The underlying assumption of behavioral finance scholars is that a complex combination of psychological factors influences investment decisions. As opposed to the belief of rational decision-making of investors according to traditional finance theories, behavioral scholars argue that investor behavior is irrational (Chiang et al. 2010; Tekce and Yılmaz 2015). There is consensus among the researchers in the field of economics and finance that it is important to consider psychological, sociological, demographic, and personality factors that may have a profound influence on investment decisions (Fung and Durand 2014; Zhang and Zheng 2015). The objective of this research is to explore the impact of personality factors in influencing the investment decisions.

1.1 Motivation and justification for this study

In response to the call by behavioral finance scholars to add a new dimension of research focusing on exploring the effect of the psychological and personality of individuals on investment decisions, several studies were conducted in that direction (Jain et al. 2015; Mak and Ip 2017). Subsequently, researchers in behavioral finance have examined the personality factors, risk-taking, financial attitude, and financial decisions (Filbeck et al. 2009; Mayfield et al. 2008). However, the extant research on the relationship between personality traits and investment decisions revealed mixed results (Belcher 2010). For example, Baddeley et al. (2010) found that extraverted individuals tend to follow others and exhibit herd behavior investments, Rzeszutek et al. (2015) found that extraverted individuals make rational decisions by taking into account the sunk costs, uncertainty, biases, etc. Paradoxically, the research by Belcher (2010) revealed that personality does not have any effect on investment decisions. Further, some researchers contend that personality traits such as extraversion and openness to experience are related to risk-taking behavior (Mayfield et al. 2008), and some others argue that behavioral biases, risk profile, and cognitive ability are the significant factors influencing the risk-taking behavior, in addition to personality traits (Mandal and Roe 2014; Verma and Verma 2018). Amid these controversial findings, the present study aims to bridge the gap by exploring the relationship between personality factors, investment attitude, and investors' investment strategies. Most importantly, the research examines the moderating role of risk capacity and investment priority in the

decision-making process. To achieve this objective, we develop a double-layered conceptual model (moderated-mediation), which is not done by previous research to the best of our knowledge, by exploring the complex relationships between personality factors and investment strategy.

The outline of the paper is as follows. The following section briefly explains the relevance of Big-Five personality traits, followed by the theoretical framework and hypotheses development. Section 3 discusses methodology, and Sect. 4 provides the analysis of the results. In the final section, we discuss the effects, contribution of the research, theoretical and practical implications, limitations, and suggestions for future research.

1.2 Big-Five personality traits

An individual's thoughts, actions, and behaviors are guided by their personality traits (Allport and Vernon 1930). Though there are several theories of personalities, there is consensus among the researchers that personality represents a whole system of characteristics an individual possesses and individuals differ in their thoughts, processes, feelings, emotions, and resultant behavior; and personality is one of the strongest predictors of the emotional and physical well-being of individuals (Manner 2017). The Big-Five personality traits (called FFM i. e five-factor model) of McCrae and Costa (1997) has been one of the widely used taxonomies of traits in organizational behavior and personnel psychology. This study incorporates Big Five personality traits as the primary independent variable that affects an individual's investment behavior. These traits are openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability. Briefly stated, individuals who are high on (i) Agreeableness tend to be reliable, generous, and well-mannered, (ii) Conscientiousness tend to be trustworthy, time-conscious, and well-organized, (iii) Extraversion tend to be active, social, and talkative, (iv) Emotional stability tend to be vigilant, stable, and balanced, and (v) Openness to experience tend to be versatile, dynamic, original, unique, and imaginative (McCrae and Costa 1997; John et al. 2008). Extant reported a close relationship of these personality traits with various outcomes: stress, burnout, self-efficacy, turnover, job satisfaction, sales performance, academic success, and financial decision making among others (Fernandes et al. 2014; Greenberg and Shtudiner 2016; Furnham and Fudge 2008; Shi et al. 2018; Soldz and Vaillant 1999). Particularly concerning behavioral finance, personality characteristics were linked to short–term and long–term investment choices (Mayfield et al. 2008; Durand et al. 2008) and investment in mutual funds (Chang et al. 2016). It was also found that individuals who are high on extraversion and openness to experience tend to have a high-risk tolerance. In contrast, individuals high on neuroticism tend to be risk-averse (Oehler et al. 2018).

The investment strategy consists of the investor's short-term and long-term investments. Short-term investments include setting aside some money for use shortly, and long-term investments may consist of setting aside money for the long term, post-retirement requirements, medical necessities, etc. Investment attitude refers to how individuals are motivated to save and invest rather than immediate consumption. Investment attitudes are also concerned with Individuals who keep watching how their investments are performing and periodically changing their portfolios. The risk capacity, another critical variable in this study, refers to the extent to which individuals can take the risk of investment, which is different from their willingness to take the risk. For example, a reasonably well-to-do investor with a substantial amount in fixed, tangible, and intangible assets has more risk capacity than an individual with a lower income and assets.

Investment priority deals with the list of prioritized items in individual investments. For example, some individuals prioritize investment to meet their children's educational requirements, weddings, healthcare or such necessities. Finally, individuals chalk out their strategies and choose their investment portfolio. This study explores the interrelationships between personality traits, investment priority, investment attitude, risk capacity, and investment strategy.

Investigating the relationship between big-five personality traits and investment decisions is essential for at least three reasons. First, the relationship between personality traits and investment strategies and investment priorities explains the differences among individuals and sheds light on inconsistent findings and behavioral biases among single studies that ignored personality factors (Charles and Kasilingam 2014; Pompain and Longo 2004; Moitto and Parente 2015 Mushinada and Veluri 2019). Psychological characteristics determine individual financial behavior and the self-control individuals possess to avoid bad financial decisions (Baker et al. 2021; Strömbäck et al. 2017). Personality traits are central to understanding an individual (Parks-Leduc et al. 2015) and explain how the individuals receive, process, and act on the information. Second, the five-factor personality trait model provides a convenient nomological network of exploring the effect of individual characteristics on risk capacity, risk aversion, and risk-taking behavior in investment decisions. Most importantly, by using the five-factor personality, we avoid the jingle-jangle fallacy: using different constructs with the same name (jingle fallacy) and the same constructs with other names (jangle fallacy) because each of the traits is different and well supported by extensive research. Third, understanding how personality traits affect the complex relationships between risk capacity, investment priorities, and investment strategies are indispensable and affect individuals' financial well-being.

2 Theoretical background and hypotheses development

The theory of planned behavior (TPB) (Ajzen 1991) provides a theoretical platform for the present study. The basic tenet of the TPB is that the attitudes of individuals drive their behavior. Behavioral intentions are influenced by perceived behavioral control, subjective norms, and attitudes. Therefore, the TPB is helpful in understanding and predicting investors' behavior in choosing their investment portfolios. Individuals evaluate their behavior depending on the perceived control. Favorable evaluation results in solid intention to perform that behavior, and unfavorable evaluation would prevent an individual from exhibiting that behavior (Ajzen and Driver 1992).

Several researchers in behavioral finance have employed TPB to explain investor behavior. For example, Yen et al. (2016) used TPB to explore earnings management of accountants by using 'attitude' as a construct, stating that attitude leads to the resultant behavior. The perceived behavioral control, which depends on the personality characteristics, plays a vital role in investment behavior (Elliott and Ainsworth 2012). Therefore, TPB is applicable in this study because the investment attitude depends on personality, chalking out investment strategy. Further, the extroverts and individuals high on openness to experience tend to follow. Hence, subjective norms arising from peers and family members would affect the investment behavior, which may motivate the investors towards socially responsible investments (Adam and Shauki 2014). Therefore, in line with the other researchers, we firmly believe that TPB is an appropriate theoretical platform for the present study.

2.1 Hypotheses development

2.1.1 Direct hypotheses

We would begin by explaining how each of the big-five personality traits relates to financial decision-making before offering the direct hypotheses.

Individuals high on extraversion tend to be active, optimistic, and socialize with others (Leary et al. 2009; McCrae and Costa 1997). As a result, extroverted individuals tend to receive positive information and assess their probability of success in investment decisions; and sometimes they tend to exhibit overconfidence in investments in risky ventures (Brown and Taylor 2014; Mayfield et al. 2008; Pan and Statman 2013). Therefore, the extant research reported a positive association between extraversion and investment attitude.

Agreeableness trait is concerned with altruism, personal warmth, helpful and forgiving attitude, avoiding conflicts, and using inoffensive language (Costa and McCrae 1992). Most of the time, individuals high on agreeableness have a positive and optimistic view of human nature; they receive information from others positively and accept it without critically examining it (Mayfield et al. 2008). Individuals who are high on agreeableness tend to follow the suggestions given by the investment brokers and have a positive attitude towards financial investments (Pak and Mahmood 2015).

Openness to experience is concerned with creativity, novelty, variety, and interest in travel and adventure. Individuals high on openness to experience tend to accept new thoughts and are more likely to have long-term investments (Mayfield et al. 2008) and embrace new investing methods (Nga and Yien 2013). The trait of openness to experience is also related to exhibiting intellectual curiosity, self-awareness, and individualism. Hence, individuals high on openness to experience tend to take risky investment decisions (Gunkel et al. 2009; Nandan and Saurabh 2016).

The conscientiousness trait concerns planning, quality-consciousness, achievement-orientation, persistence, and self-discipline (Ali 2019). Some researchers found individuals high on conscientiousness tend to exhibit a positive attitude towards investment and are also actively involved in the decision-making process (Durand et al. 2013; Gunkel et al. 2010; Sadi et al. 2011). In addition, some researchers documented that individuals who are high on conscientiousness tend to believe that their investment decisions are better than others (Jamshidinavid et al. 2012) as they have a high level of discipline and show carefulness in decision-making.

Emotional stability (opposite of neuroticism) trait is concerned with the balanced approach, stability, high self-esteem, optimistic attitude of individuals Costa and McCrae (1992). Individuals who are high on emotional stability (low on neuroticism) have high levels of cognitive skills, conceptual understanding, and the ability to think analytically and critically. Therefore, emotionally stable individuals are not afraid of investing in risky ventures (Young et al. 2012). On the other hand, some researchers reported that individuals characterized by high neuroticism tend to be risk-averse, shy away from investment decisions, and avoid uncertainty (Gambetti and Giusberti 2012). Thus, high individuals in these five traits tend to make rational investment decisions and exhibit a positive attitude towards financial investments—both short and long run.

While the five-factor theory is applicable in explaining the attitude of individuals towards investment decisions, researchers found a positive association of investment attitude to the investment strategies (Sadiq and Khan 2019). In a study conducted on 534 university students from Brazil, it was found that investment attitude is positively associated

with financial behavior (Potrich et al. 2016). From the literature on financial literacy, extant research provided empirical evidence about the positive relationship between financial attitude, investment strategy, and investment behavior of individuals (Lusardi et al. 2010; Parrotta and Johnson 1998). In a recently conducted study in Pakistan, researchers found that investment criteria were positively related to investment behavior (Saleem et al. 2021). Based on the available empirical evidence and logs, we offer the following hypotheses:

H1 Personality is positively related to investment strategy

H2 Personality is positively associated with investment attitude

H3 Investment attitude is positively associated with investment strategy

2.1.2 Investment attitude as mediator

We argue in this research that the personality traits, in addition, to having direct influence, have an indirect effect through investment attitude. While the immediate impacts of five personality traits: extraversion, emotional stability, agreeableness, openness to experience, and conscientiousness, have been documented in the literature, as discussed in previous sections, the indirect effect of the personality traits through investment attitude has not been examined by earlier researchers to the best of our knowledge. Following the relatively recent approach and call by Nigam et al. (2018) who emphasized the role of mediators in the studies involved in behavioral finance, we argue that investment attitude is one of the potential mediators. The previous research established that personality traits directly positively affect investment attitude (Isidore and Christie 2017; Sadiq and Khan 2019). In addition, there is empirical evidence that investment is a precursor to investment strategy (Lusardi and Mitchell 2008; Mak and Ip 2017). Based on the above and available empirical evidence, we offer the following exploratory mediation hypothesis:

H4 Investment attitude mediates the relationship between personality and investmentstrategy

2.1.3 Risk capacity as a first moderator

As the risk component, in different degrees, is embedded in all investments, it is essential to consider the risk tolerance and risk capacity of the individuals. Risk consists of two major components in behavioral finance: risk appetite and risk tolerance. An individual's willingness to take risks determines the risk appetite, whereas the amount of risk an individual can handle refers to risk tolerance (Corter and Chen 2005; Grable and Roszkowski 2008; Moreschi 2004). While some individuals are risk-averse, irrespective of whether they have risk capacity, some are active risk-seekers even though they do not possess the requisite risk capacity to survive the loss of money in their investments. Investors calculate the anticipated returns and associated risks (Sindhu and Kumar 2014). Risk capacity is different from risk tolerance. Risk tolerance is concerned with an individual's willingness to trade off potential future outcomes, whereas risk capacity is the cushion an individual has in the event of investment failure. Risk tolerance deals with an individual's willingness to take risk whereas risk capacity is concerned with how much risk an individual can take. Risk capacity refers to the extent to which an individual has financial ability to take

investment risk, the higher the ability the greater the capacity. The amount of risk an individual is comfortable taking may differ from the capacity, which depends on the financial position. A wealthy person may have risk capacity (i.e., the ability to withstand investments loss). In contrast, an individual with fewer financial holdings may have enough capacity to bear the loss from an investment. Furthermore, some researchers documented the positive association between risk capacity and investment decisions of post-graduate students in the Indian context (Ananthan et al. 2017). Therefore, it is more likely that individuals with high-risk capacity may choose risky investment strategies than those with low-risk capacity. Based on the intuitive logic and available sparse empirical evidence, we offer the following exploratory hypothesis:

H2a Risk capacity moderates the relationship between personality and investment strategy mediated through investment attitude

2.1.4 Investment priority as a second moderator

The most important part of this research is to examine the role of investment priority as a second moderator in the relationship between personality and investment attitude. The behavioral finance scholars have been trying to assess the influence of personality traits on financial decisions, taking into account the risk involved in the economic and investment decisions (Charness et al. 2013; Goulart et al. 2013, 2015; Mandal and Roe 2014). As the risk capacity determines the behavior of investors under the conditions of uncertainty, the investment priorities of these individuals influence their attitude of investment. Furthermore, when personality traits help individuals gain access to information from the public domain and change their relationship to risk, it may affect their investment attitude and investment priorities in decision making (De Bortoli et al. 2019). While the direct relationship between investment priority and investment attitude has been examined by previous researchers, exploring the moderating role of investment priority is under-studied. We argue that investment priority (second moderator) moderates the moderated relationship between personality characteristics and risk capacity (first moderator) and investment attitude. We, therefore, propose the following exploratory moderated moderated-mediation hypothesis:

H2b Investment priority positively moderates the moderation effect of risk capacity on the investment strategy from personality via investment attitude as mediator.

The conceptual model is presented in Fig. 1.

3 Method

3.1 Sample

The sample for this study consisted of respondents from the southern part of India. A carefully structured survey instrument was prepared and distributed among the individuals in Tiruchirappalli, a big city in Tamil Nadu. We collected data using convenience non-random sampling. In all, we distributed surveys online because of COVID-19 restrictions and

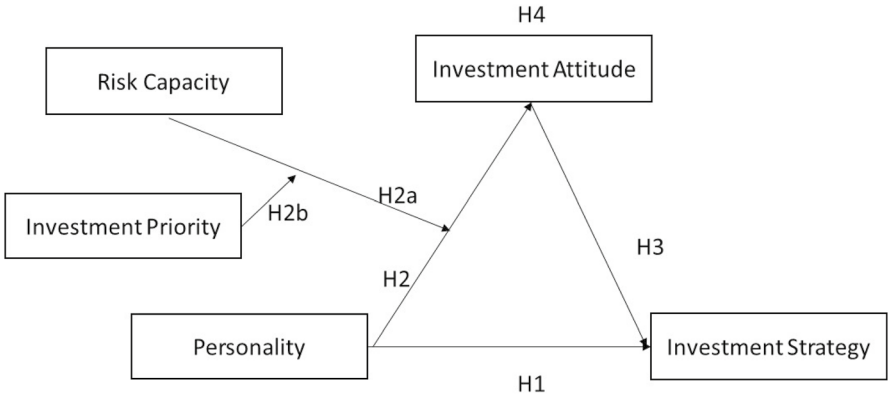

Fig. 1 Conceptual model

periodical lockdowns. This is consistent with the other studies conducted during the global pandemic period. Using google drive, we collected data, and we received 934 respondents.

First, we secured email ids from the respective institutions to contact the respondents. Then, we administered the survey instrument and asked the respondents to fill out the instrument. Google form does not allow the respondents to proceed further if they do not answer any of the questions. We sent surveys in mid-December 2020, and it took four months to get responses from 934 respondents. Based on the population, according to the sample size tables by Krejcie and Morgan (1970), the minimum required sample size is 384. According to Comrey and Lee (1992) sample size of over 500 is very good (100 = poor, 200 = fair, 300 = good, 500 = very good, 1000 or more = excellent). To check the non-response bias, we compared the first one hundred observations with the last one hundred observations and found no significant differences between these two subsamples.

3.2 Demographics

The demographics of the respondents were mentioned in Table 1.

3.3 Measures

After reviewing the literature on behavioral finance, we designed a self-administered survey using the scale items adapted from the established and validated measures. Since most of the measures were developed and used in the context of Western countries, we had to adapt the measures to suit the Indian context. Before adapting the measures to suit the requirements of the context of individuals and families interested in investment and consulted five faculty members to make sure that the indicators tap the intended constructs. We used Likert-type 5-point scale ('1″ representing 'strongly disagree' and '5 representing 'strongly agree').

The term 'personality' is used here to represent the aggregation of five personality traits (from the Five Factor Theory of McCrae and Costa (1997). The Big-Five personality variables were adapted from John and Srivastava (1999) and used by Mayfield et al. (2008): *extraversion* (4 items: Cronbach's alpha = 0.71), *agreeableness* (4, Cronbach's

Table 1 Demographic profile of respondents

Category	Profile	Total number	Percentage
Gender	Male	509	54.5
	Female	425	45.5
Age (in years)	18–31	246	26.3
	32–45	418	44.8
	46–59	222	23.8
	60 and above	48	5.1
Types of investors	Adventurous investor	132	14.1
	Cautious investors	314	33.6
	Balanced investors	399	42.7
	Prudent investors	89	9.5
Annual income	Below Rs.300,000 ($4000)	329	35.2
	Rs 300,000 – Rs. 600,000 ($4000—$8000)	314	33.6
	Rs.600,000 – Rs. 900,000 ($8000—$12,000)	181	19.4
	Rs. 900,000 – Rs. 1,200,000 ($12,000—$16,000)	70	7.5
	Over Rs. 1,200,000($ 16,000—$20,000)	40	4.3
	Over Rs. Rs. 12,50,000($20,000)	329	35.2
Preferred investment Periods	Short term (less than 1 year	225	24.1
	Medium term (1–3 years	381	40.8
	Long term (more than 3 years)	276	29.6
	Intraday	52	5.6
Experience in investments (in years)	Less than 1 year	233	24.9
	1–3 years	252	27.0
	4– 6 years	274	29.3
	7– 9 years	113	12.1
	More than 10 years	62	6.6

alpha = 0.81), *conscientiousness* (5: Cronbach's alpha = 0.82), *emotional stability* (5 items: Cronbach's alpha = 0.81), and *openness to experience* (5 items: Cronbach's alpha = 0.87). The Cronbach's alpha for personality, for all the 23 items taken together, was 0.92. *Risk capacity* was measured using ten items adapted from Filbeck et al. (2009) and Global Asset Management (GAM 2019), and the reliability coefficient Cronbach's alpha was = 0.88. *Investment attitude* was measured using 9 items out of which 4 items were adapted from Lai (2019), and five items self-developed, and the reliability coefficient Cronbach's alpha was = 0.83. *Investment priority* was measured with 8 items adapted from the literature and self-developed to suit the Indian context because the priority of Indian investors are radically different from the individuals in Western countries, and the reliability coefficient Cronbach's alpha was = 0.0.89. *Investment strategy*, consisting of strategies regarding the short-term investments (5 items) and long-term investments (5 items) was measured using 10 items adapted from Mayfield et al. (2008) and the reliability coefficient Cronbach's alpha was = 0.92.

4 Results

4.1 Descriptive statistics

Before testing the hypotheses it is essential to check the measurement properties of the instrument and observe the correlations between the variables. Table 2 captures the descriptive statistics – means, standard deviations, and correlations.

We also tested for multicollinearity by observing correlations between the variables. As can be seen in Table 2, the correlations were less than 0.75. As suggested by Tsui et al. (1995), correlations of less than 0.75 suggest multicollinearity is not a problem. Furthermore, to double-check the presence of multicollinearity we observed the variance inflation factor (VIF) and found that the VIF values were less than 5, thus reiterating that multicollinearity is not a problem with the data (Hair et al. 2019).

4.2 Common Method Bias and measurement properties

We followed the recommendations of Podsakoff et al. (2003) to check common method bias and performed Harman's single-factor analysis. The results showed that the single factor accounted for 32.46 percent variance, which is far less than the cut-off value of 0.50, and hence common method bias is not a problem with the data.

We also tested the measurement properties of the instrument. All the factor loadings for the constructs were over 0.7, and the Average Extracted Estimates were over the threshold values of 0.50. Further, the composite reliability (CR) are over the acceptable values. The summary of the measures and measurement properties (Confirmatory Factor Analysis) were presented in Appendix 1.

4.3 Hypotheses Testing

To test the hypotheses 1,2,3 and 4 we used model number 4 in Hayes (2018) PROCESS macros, and the results of hypotheses testing are presented in Table 3. First, we tested the effect of control variables (age, gender, income, and education) and found that none of these control variables were significant. So, we did not include these demographic variables in the PROCESS analysis. Therefore, Table 3 shows the effect of main independent variables on dependent variable and the mediator.

Step 1 from Table 3 shows the effect of personality on investment strategy. The regression coefficient of personality was positive and significant ($\beta = 0.84$, $t = 20.60$; $p < 0.001$). The 95 percent bias-corrected confidence interval (BCCI) was 0.7599 (LLCI) and 0.9198 (ULCI). The model was significant and explains 31.3 percent variance in the investment strategy [$R^2 = 0.313$; $F(1,932) = 424.68$; $p < 0.001$]. These results support H1 that personality is positively associated with investment strategy.

Hypothesis 2 proposes that personality will have a positive effect on investment attitude. As shown in the step 2 of Table 2, the regression coefficient of personality on investment attitude was positive and significant ($\beta = 0.71$; $t = 21.75$; $p < 0.001$). The 95 percent (BCCI) LLCI and ULCI were 0.6445 and 0.7754 respectively. The model was significant and explains 32.7 percent variance in the purchase intention because of social adjustive function [$R^2 = 0.327$; $F(1,932) = 452.65$; $p < 0.001$]. These results support H2.

Step 3 (Table 2) shows the results of the effects of investment attitude on investment strategy. The regression coefficient of investment attitude on investment strategy was

Table 2 Descriptive Statistics: Means, Standard deviations, and zero-order correlations

Variable	Mean	Standard Deviation	1	2	3	4	5	6	7	8	9
1.Extraversion	3.33	0.69	1								
2.Agreeableness	3.22	0.68	0.68***	1							
3.Conscientiousness	3.24	0.68	0.62***	0.65***	1						
4.Emotional Stability	3.16	0.71	0.57***	0.59***	0.69***	1					
5.Openness to Experience	3.36	0.70	0.50***	.051***	0.52***	0.52***	1				
6.Risk Capacity	3.22	0.74	0.47***	0.47***	0.53***	0.53***	0.37***	1			
7.Investment Attitude	3.37	0.70	0.51***	0.47***	0.48***	0.39***	0.49***	0.53***	1		
8.Investment Priority	3.28	0.81	0.46***	0.44***	0.42***	0.34***	0.44***	0.48***	0.70***	1	
9.Investment Strategy	3.18	0.85	0.47***	0.46***	0.47***	0.43***	0.46***	0.59***	0.65***	0.61***	1

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

Table 3 Testing H1, H2, H3, and H4 (Mediation Hypothesis)

	DV = Investment strategy				DV = Investment attitude **H2**				DV = Investment strategy			
	Step 1				Step 2				Step 3			
	Coeff	se	t	p	Coeff	se	t	p	Coeff	se	t	p
Constant	0.4348	0.1349	3.2221	0.0013	1.0550	0.1105	9.5482	0.0000	−0.1934	0.1235	−1.5656	0.1178
Personality *H1*	**0.8399**	**0.0408**	**20.6080**	**0.0000**	**0.7100**	**0.0334**	**21.2756**	**0.0000**	0.4171	0.0434	9.6126	0.0000
Investment attitude H3									**0.5954**	**0.0349**	**17.0381**	**0.0000**
R-square	0.313				0.327				0.477			
F	424.68				452.65				423.40			
df1	1				1				2			
df2	932				932				931			
p	.000				.000				.000			
Total effect												
			Total effect		se	t	p	LLCI	ULCI			
			0.8399		0.0408	20.6080	0.0000	0.7599	0.9198			
Direct effect												
			Direct Effect		se	t	p	LLCI	ULCI			
Personality investment strategy			0.4171		0.0434	9.6126	0.0000	0.3320	0.5023			
Bootstrapping indirect effect: H4												
			Indirect Effect		BOOT se	BOOT LLCI	BOOT ULCI					
Personality investment attitude investment strategy			0.4227 (0.5954 × 0.7100)		0.0465	0.3286	0.5126					

N = 934. Boot LLCI refers to the lower bound bootstrapping confidence intervals. Boot ULCL refers to the upper bound bootstrapping confidence intervals. Number of bootstrapping samples for this bias corrected bootstrapping confidence intervals are 20,000. The level of confidence for all confidence intervals in output was 0.95. We have four decimal digits for bootstrap results because some values may be very close to zero

positive and significant (β = 0.59; t = 17.03; $p < 0.001$). The model explains 47.7 percent of variance in investment strategy and the magnitude is statistically significant [$R^2 = 0.477$; F (2,931) = 423.40; $p < 0.001$]. These results render support to H3 that investment attitude is positively associated with investment strategy.

The hypothesis 4 is concerned with the mediation of investment attitude between personality and investment strategy. To test this hypothesis, we had to check the indirect effect. As shown in Table 3, the total effect (0.839) was consisting of direct effect of personality on investment strategy (0.417) and indirect effect through investment attitude (0.422). The indirect effect was calculated as the multiplication of regression coefficient of personality on investment attitude (0.7100) and the regression coefficient of investment attitude on investment strategy (0.5954) [i.e. 0.7100 × 0.5954 = 0.422]. The total effect of personality on investment strategy was 0.417 + 0.422 = 0.839. In order to check mediation effect of investment attitude, it is important to see whether the indirect effect is significant or not. The indirect effect of personality investment attitude investment strategy was significant (β = 0.4227; Boot s. e = 0.0465), and the bootstrapping results based on 20,000 bootstrap samples in Hayes (2018) PROCESS macros, show that 95 percent bias-corrected confidence interval (BCCI) are between 0.3286 and 0.5126. Because zero was not contained in CIs, investment attitude does mediate the relationship between personality and investment strategy, thus supporting the H4.

4.4 Testing the first order moderation of risk capacity

One of the most important segment of the model is testing the first order moderation i.e. risk capacity as a moderator between personality and investment attitude. To test this model, we used model number 7 of Hayes (2018) PROCESS Macros. We presented the results of regression in Table 4.

The moderation hypothesis suggests that risk capacity moderates the relationship between personality and investment attitude. The regression coefficient of the multiplicative term (personality x risk capacity) was significant (β = −0.084; t = −3.167; p < 0.01; Boot LLCI (−0.1361; Boot ULCI (−0.0320). The index of moderated-mediation, as shown in the Table 3, was −0.0507 with Boot SE (0.0226) and Boot LLCI (−0.0959); Boot ULCI (−0.0065), thus rendering support to H2a.

The conditional effects of the focal predictor (Investment Attitude) at the value of the moderator (Risk Capacity) were presented at the bottom of the Table 3. The indirect effect shown in the bottom part also corroborate the moderation hypothesis. The interaction effect is presented in Fig. 2.

As shown in Fig. 2, the relationship personality and investment strategy was stronger under the high-risk capacity than at the medium and lower levels of risk capacity. As individuals move from lower scores on personality to higher levels, the higher risk capacity is associated with higher investment strategy than at lower and middle levels of risk capacity These results corroborate the support for moderation hypothesis 2a.

4.5 Testing the second-order moderation effect

Hypothesis 2b posits that risk capacity (first moderator) and investment priority (second moderator) interact with personality to affect investment strategy mediated through investment attitude. To test this moderated moderated-mediation hypothesis, we used model number 11 of Hayes (2018) PROCESS macros and presented the results in Table 5.

Table 4 Testing of Hypothesis 2a (Model number 7 of Hayes PROCESS) (Results of two-way interaction)

	DV = Investment strategy mediator = Investment attitude; Moderator: Risk capacity; IV = Personality											
	Step 1						Step 2					
	DV = Investment attitude						DV = Investment strategy					
	Coeff	se	t	p	LLCI	ULCI					LLCI	ULCI
Constant	0.0839	0.2504	0.3350	0.7377	−0.4075	0.5752	−0.1934	0.1235	−1.5656	0.1178	−0.4358	0.0490
Personality	0.7699	0.0810	9.5054	0.0000	0.6109	0.9288	0.4171	0.0434	9.6126	0.0000	0.3320	0.5023
Risk capacity	0.5238	0.0916	5.7180	0.0000	0.3440	0.7035						
Personality x Risk capacity H2a	**−0.0840**	**0.0265**	**−3.1676**	**0.0016**	**−0.1361**	**−0.0320**						
Investment attitude							0.5954	0.0349	17.0381	0.0000	0.5268	0.6640
R-square	0.402						0.476					
F	233.26						423.40					
df1	3						2					
df2	930						931					
P value	.000						.000					
Index of moderated moderated-mediation												
Index	BOOT SE		BOOT LLCI		BOOT ULCI							
−0.0507	0.0226		−0.0959		−0.0065							
Conditional effects of the focal predictor (Investment attitude) at the value of the moderator (Risk Capacity)												
Risk capacity	Effect		se		t		p			LLCI	ULCI	
2.5000 (Low)	0.5598		0.0375		14.9139		0.0000			0.4861	0.6334	
3.3000 (Medium)	0.4925		0.0402		12.2407		0.0000			0.4136	0.5715	
3.9000 (High)	0.4421		0.0487		9.0849		0.0000			0.3466	0.5376	

Conditional effects of the focal predictor (Investment Attitude) at values of moderator (Risk Capacity)

Risk Capacity	Effect	se	t	p	LLCI	ULCI
1.0000	0.6858	0.0587	11.6876	0.0000	0.5707	0.8010

Table 4 (continued)

Conditional effects of the focal predictor (Investment Attitude) at values of moderator (Risk Capacity)

Risk Capacity	Effect	se	t	p	LLCI	ULCI
1.2000	0.6690	0.0547	12.2369	0.0000	0.5617	0.7763
1.4000	0.6522	0.0509	12.8130	0.0000	0.5523	0.7521
1.6000	0.6354	0.0474	13.3974	0.0000	0.5423	0.7285
1.8000	0.6186	0.0443	13.9585	0.0000	0.5316	0.7055
2.0000	0.6018	0.0417	14.4478	0.0000	0.5200	0.6835
2.2000	0.5850	0.0395	14.8003	0.0000	0.5074	0.6625
2.4000	0.5682	0.0380	14.9425	0.0000	0.4936	0.6428
2.6000	0.5514	0.0372	14.8114	0.0000	0.4783	0.6244
2.8000	0.5345	0.0372	14.3793	0.0000	0.4616	0.6075
3.0000	0.5177	0.0379	13.6696	0.0000	0.4434	0.5921
3.2000	0.5009	0.0393	12.7507	0.0000	0.4238	0.5780
3.4000	0.4841	0.0413	11.7119	0.0000	0.4030	0.5652
3.6000	0.4673	0.0439	10.6367	0.0000	0.3811	0.5535
3.8000	0.4505	0.0470	9.5872	0.0000	0.3583	0.5427
4.0000	0.4337	0.0504	8.6015	0.0000	0.3348	0.5326
4.2000	0.4169	0.0542	7.6980	0.0000	0.3106	0.5231
4.4000	0.4001	0.0581	6.8819	0.0000	0.2860	0.5141
4.6000	0.3833	0.0623	6.1508	0.0000	0.2610	0.5055
4.8000	0.3664	0.0666	5.4982	0.0000	0.2357	0.4972
5.0000	0.3496	0.0711	4.9163	0.0000	0.2101	0.4892

Indirect effect (Personality Investment Attitude Investment Behavior)

	Risk capacity	Effect	Boot SE	Boot LLCI	Boot ULCI
	2.5000 (Low)	0.3378	0.0408	0.2594	0.4207

Table 4 (continued)

Conditional effects of the focal predictor (Investment Attitude) at values of moderator (Risk Capacity)

Risk Capacity	Effect	se	t	p	LLCI	ULCI
	3.3000 (Medium)	0.2972	0.0354	0.2285	0.3677	
	3.9000 (High)	0.2668	0.0370	0.1940	0.3389	

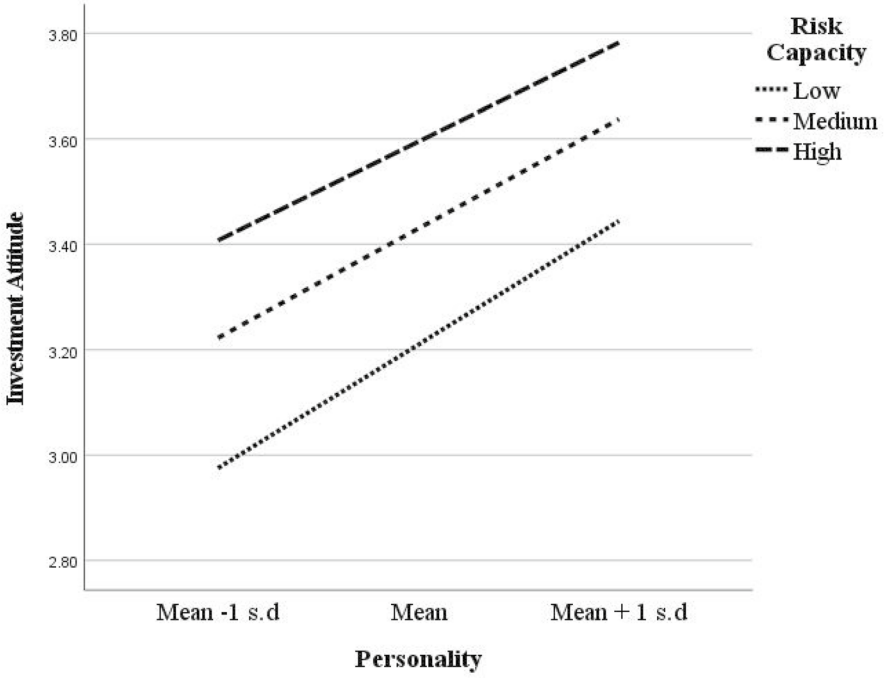

Fig. 2 Risk Capacity as a moderator in the relationship between personality and investment attitude

As shown in the first column of Table 5, the regression coefficient of the three-way interaction (personality x risk capacity x investment priority) was significant ($\beta = -0.0785$; $t = 3.64$; $p < 0.001$). This is labeled as testing the 'moderated moderated-mediation'. Most importantly, as shown in Table 4, the index of moderated moderated-mediation was (0.0467) and Boot SE (0.0141) and Boot LLCI (0.0214) and BOOT UL (0.0769). As zero was not contained in the 95 percent bias-corrected confidence interval (BCCI) Lower and Upper limits, the moderated moderated-mediation hypothesis was supported. The indices of conditional moderated mediation by Risk Capacity, as shown in the bottom of the Table 4, reveal that at higher levels of investment priority the index was significant [Index, 0.954; BOOT SE, 0.0434; BOOT LLCI, 0.0171; BOOT ULCI, 0.1891]. The conditional effects of the focal predictor (Investment Attitude) at values of moderators (Risk Capacity x Investment Priority) were presented in the bottom of the Table 4, also corroborate the results. Most importantly, the indirect effect of personality on investment strategy, (Personality Investment AttitudeInvestment Strategy) as shown in Table 6 also show the support for moderated moderated-mediation hypothesis.

The three-way interaction was shown in Fig. 3 in two panels.

Panel A (Fig. 3) shows the effect of different levels of risk capacity the relationship between personality and investment attitude, under the conditions of lower level of investment priority. As can be seen, when individuals have high risk capacity, the relationship between personality and investment attitude is stronger than at lower levels of risk capacity. As individuals move from lower levels of personality to higher levels, the relationship between personality and investment attitude becomes much stronger (as the

Table 5 Testing of Hypothesis 2b (three-way interaction) (Results of moderated moderated-mediation model)

	DV = Investment strategy; Mediator = Investment attitude; Moderators: Risk capacity (first Moderator) and Investment priority (Second Moderator); IV = Personality											
	DV = Investment attitude						DV = Investment strategy					
	Coeff	se	t	p	LLCI	ULCI	Coeff	se	t	p	LLCI	ULCI
Constant	−1.3137	0.5197	−2.5279	0.0116	−2.3335	−0.2938	−0.1934	0.1235	−1.5656	0.1178	−0.4358	0.0490
Personality	0.6123	0.1686	3.6327	0.0003	0.2815	0.9431	0.4171	0.0434	9.6126	0.0000	0.3320	0.5023
Risk capacity	0.9410	0.2259	4.1650	0.0000	0.4976	1.3843						
Investment priority	1.4070	0.2450	5.7426	0.0000	0.9262	1.8878						
Personality x Risk capacity	−0.1536	0.0662	−2.3201	0.0206	−0.2836	−0.0237						
Personality x Investment priority	−0.2111	0.0706	−2.9895	0.0029	−0.3497	−0.0725						
Risk capacity x investment priority	−0.3579	0.0798	−4.4847	0.0000	−0.5145	−0.2013						
Personality x Risk capacity x Investment priority *H2b*	**0.0785**	**0.0215**	**3.6411**	**0.0003**	**0.0362**	**0.1208**						
Investment Attitude							0.5954	0.0349	17.0381	0.0000	0.5268	0.6640
R-square	0.572						0.476					
F	176.62						423.40					
df1	7						2					

Table 5 (continued)

	DV = Investment strategy; Mediator = Investment attitude; Moderators: Risk capacity (first Moderator) and Investment priority (Second Moderator); IV = Personality											
	DV = Investment attitude						DV = Investment strategy					
	Coeff	se	t	p	LLCI	ULCI	Coeff	se	t	p	LLCI	ULCI
df2	926						931					
P value	.000						.000					
Index of moderated moderated-mediation												
Index	BOOT SE			BOOT LLCI		BOOT ULCI						
0.0467	0.0141			0.0214		0.0769						
Indices of conditional moderated mediation by Risk capacity												
Investment priority	Index			BOOT SE		BOOT LLCI		BOOT ULCI				
2.7333 (Low)	0.0362			0.0394		−0.0358		0.1198				
3.4000 (Medium)	0.0674			0.0406		−0.0067		0.1540				
4.0000 (High)	0.0954			0.0434		0.0171		0.1891				

Conditional effects of the focal predictor (Investment Attitude) at values of moderators (Risk capacity x Investment priority)

Risk capacity	Investment priority	Effect	se	t	p	LLCI	ULCI
Low	Low	0.1874	0.0419	4.4783	0.0000	0.1053	0.2696
Low	Medium	0.1775	0.0518	3.4259	0.0006	0.0758	0.2792
Low	High	0.1685	0.0666	2.5316	0.0115	0.0379	0.2992
Medium	Low	0.2361	0.0432	5.4612	0.0000	0.1513	0.3209
Medium	Medium	0.2680	0.0393	6.8109	0.0000	0.1908	0.3452
Medium	High	0.2967	0.0467	6.3574	0.0000	0.2051	0.3883
High	Low	0.2726	0.0577	4.7205	0.0000	0.1593	0.3859

Table 5 (continued)

Conditional effects of the focal predictor (Investment Attitude) at values of moderators (Risk capacity x Investment priority)

Risk capacity	Investment priority	Effect	se	t	p	LLCI	ULCI
High	Medium	0.3359	0.0490	6.8613	0.0000	0.2398	0.432
High	High	0.3928	0.0527	7.4583	0.0000	0.2895	0.4962

Table 6 Indirect Effect (Personality Investment Attitude Investment Strategy)

Risk capacity	Investment priority	Effect	Boot SE	Boot LLCI	Boot ULCI
2.5000(Low)	2.7333 (Low)	0.1116	0.0430	0.0333	0.2025
2.5000 (Low)	3.4000(Medium)	0.1057	0.0486	0.0092	0.1991
2.5000 (Low)	4.0000 (High)	0.1003	0.0624	−0.0283	0.2166
3.3000(Medium)	2.7333 (Low)	0.1406	0.0390	0.0727	0.2246
3.3000 (Medium)	3.4000(Medium)	0.1596	0.0323	0.0994	0.2263
3.3000(Medium)	4.0000 (High)	0.1767	0.0401	0.0994	0.2554
3.9000 (High)	2.7333 (Low)	0.1623	0.0507	0.0752	0.2754
3.9000(High)	3.4000(Medium)	0.2000	0.0379	0.1319	0.2841
3.9000 (High)	4.0000 (High)	0.2339	0.0384	0.1622	0.3136

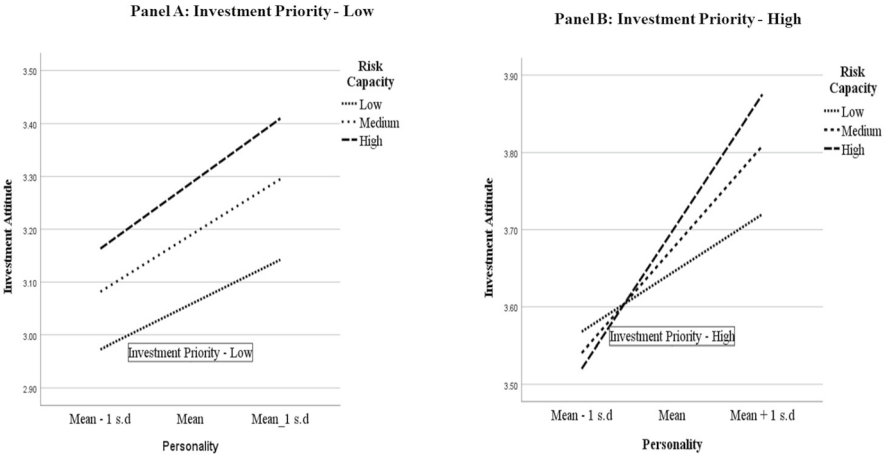

Fig. 3 The moderating effect of Investment Priority and Low and High levels on the relationship between Personality and Investment Attitude moderated by Risk Capacity

slope is greater relative the slope of the curve at lower levels of risk capacity). When we consider the panel B, represented by higher levels of investment priority, the relationship between personality and investment attitude becomes much stronger (as the curve becomes steeper at higher levels of personality), though at lower levels the relationships is not strong. The intersecting curves represent a strong three-way interaction effect at higher levels of investment priority. These graphs render support to three-way interaction hypothesis 2b.

Summary of hypotheses were captured in Table 7.

Table 7 Summary of the results of hypotheses testing

Number	Hypothesis	Result
H1	Personality is positively related to investment strategy	Supported
H2	Personality is positively associated with investment attitude	Supported
H3	Investment attitude is positively associated with investment strategy	Supported
H4	Investment attitude mediates the relationship between personality and investment strategy	Supported
H2a	Risk capacity moderates the relationship between personality and investment strategy mediated through investment attitude	Supported
H2b	Investment priority positively moderates the moderation effect of risk capacity on the investment strategy from personality via investment attitude as mediator	Supported

5 Discussion

The empirical findings of this study support the multi-layered moderated-moderated-mediation conceptual model mentioned in Fig. 1. We analyzed the data collected from 934 respondents and analyzed the data using Hayes (2018) PROCESS macros to test the hypotheses. All the hypotheses found support in this study.

To begin with, big-five personality traits, collectively, are positively associated with investment strategy (hypothesis 1), and this finding is consistent with the previous studies from the literature (Mayfield et al. 2008; Durand et al. 2008; Sadiq and Khan, 2019). The positive relationship between personality traits and investment attitude (hypothesis 2) was demonstrated in this study, which adds to the results from the earlier studies and is consistent with the TPB theory. The direct relationship between investment attitude and investment strategy is also observed in this study (hypothesis 3). These relationships are compatible with the previous studies conducted in various parts of the world, including India (Isidore and Christie 2017; Saleem et al. 2021; Sultana 2010). The results also support that personality traits influence the investment strategy through investment attitude (hypothesis 4). However, earlier researchers did not test the relationship, and they could not vouch for the connection.

Another interesting finding from this study is the role of risk capacity in changing the strength of the relationship between personality traits and investment attitude (hypothesis 2a). This result is consistent with the previous studies that showed the positive effect of the individual's risk capacity on their investment decisions (Ananthan et al. 2017). Finally, the investment priority further moderates the relationship between personality and investment strategy mediated by investment attitude by risk capacity (hypothesis 2b). Again, no previous studies were available to vouch for this finding. However, the finding has intuitive appeal as the positive interaction between risk capacity, and investment priority is expected to influence the relationship between personality traits and investment attitude. Overall, the results support the theoretical assertions of TPB that investment behavior of individuals is led by the attitudinal evaluations about risk factors involved in financial decisions and perceived control individuals have, depending on their personality traits. The perceived behavioral control, though we did not measure in this study, largely depends on individuals' personality traits and thus provides a convenient platform for this study. Our results, therefore, are supported by TPB.

5.1 Theoretical implications

This research has proposed a multi-layered conceptual model for exploring the relationship between five-factor personality traits (extraversion, openness to experience, emotional stability, conscientiousness, and agreeableness) and investor behavior, contributing to the growing body of knowledge in the field of behavioral finance in several ways. First, to be consistent with most of the earlier studies, the conceptual model was built under the theoretical framework of TPB but yet taken a different approach in exploring the relationships. This extends the widely discussed literature linking personality variables to investor behavior. Second, the direct relationships between personality traits and investors' attitudes and investment strategy are expected and supported by the existing research, and the results add to the literature.

Third, a significant contribution of this research is the moderating role of risk capacity in influencing the individual's perception towards investment attitude. Though risk capacity and personality traits directly influence investment attitude, the multiplicative effect of both is fascinating to examine, as we did in this study. Fourth, a significant contribution of this study to the behavioral finance literature is the support for moderated moderated-mediation hypothesis, which has not been examined before, to the best of our knowledge. Particularly in a developing country, the investor's behavior is rarely examined using the variables we considered in this study. Several studies were conducted in an Indian context, but the complex relationships unraveling the three-way interaction were not discussed very infrequently. Therefore, the study makes a unique contribution to the growing body of literature in behavioral finance.

5.2 Practical contributions

This study has several contributions to the practitioners and investment brokers interested in studying the investment portfolios of individual investors. First, this study highlights the importance of personality traits that may profoundly influence the investment behavior of individuals. Second, the investment brokers need to consider the risk capacity of individuals and risk-taking or risk-aversive behaviors because the risk capacity is not a psychological variable but has a significant effect on the investment attitude and investment strategy. Third, the investor's investment priorities need to be considered while suggesting their investment portfolios. Fourth, the practitioners need to understand that the investment priorities of individuals differ from person to person. For example, some individuals express their priority to satisfy their retirement needs, whereas some may express buying a house or property; others may invest in a child plan (for education or marriage needs). Therefore, investment priorities play a significant role in individuals' investment attitudes and investment strategy. The investment strategies of individuals also differ: some individuals act on the information obtained from television, newspapers, magazines, and peers, whereas others may rely on the information provided by the investment brokers or consultants. In the present-day digital information age, individuals have access to various information models, and how the information is received, interpreted, and acted upon depends on the personality traits. For example, individuals who are high on extraversion and openness to experience act positively, whereas emotionally unstable individuals tend to be risk-averse and pessimistic in their investment decisions. Therefore, this study guides the investors as to the essential factors that need to be considered before making decisions.

5.3 Limitations and future research

The results from the study should be interpreted in light of some of the limitations. First, the self-report surveys have the inherent problem of common method bias and social desirability bias. However, we have statistically checked for the common method bias by performing Harman's single-factor analysis and found that a single variable explained less than 30 percent of the variance. Hence, common method bias was not a problem with this study. Second, we assume that social desirability bias is minimized by assuring the respondents that the survey responses would be kept confidential to answer the questions dispassionately. Third, the results from this study may have some generalizability problems because the focus of this study was on the respondents from the southern part of India. However, to the extent the investor's behavior is identical across

different states of India, we expect the results to be generalizable. Another limitation of this study is the representativeness of the sample. We have collected data using convenience sampling. However, since the sample size is significant, we assume no sampling bias.

The present study offers several avenues for future research. First, this study focused on big-five personality traits in an aggregated way. Though individuals exhibit stable personality traits across this five-factor model, it may be likely that each trait may influence the investment behavior of individuals. It would be interesting to explore the investment behavior concerning each of the traits to have a broader understanding of the nature of relationships. Second, the demographic variables (such as income, gender, family size, number of children, etc.) may influence the investment behavior. We controlled for these demographic variables. Future researchers may examine if there are any gender differences in investment behavior. It would also be interesting to compare and contrast the investor's behavior of developing countries with developed countries to see if any cultural differences exist. Further, comparisons of investors' behavior in other developing countries to see if any differences exist, as the personality traits in different countries may impact investors' behavior. Finally, a more significant sample may help test this model on a large scale to make the results generalizable across other countries.

5.4 Conclusion

This study is a modest attempt to understand better how various personality traits influence investment behavior, particularly in India's developing country. This study provided evidence that personality traits play a vital role in financial decision-making. Most importantly, the study highlighted the importance of considering investors' investment priorities and risk capacity in deciding about investment strategy. As the investors' behavior constantly changes according to the market situation, researchers continue to examine the impact of personality on financial decision-making. The study provides a simple model, not a pioneering one. Still, it may be extended by adding additional variables to strengthen the understanding of investors' behavior, particularly in a developing country perspective. We hope the model presented may drive future researchers to extend the research to benefit both investors and literature.

Appendix 1

See Table 8.

Table 8 Confirmatory factor analysis

	Alpha	Composite reliability	Standardized Loadings (λ_{yi})	Reliability (λ^2_{yi})	Variance ($Var(\varepsilon_i)$)	Average Variance-Extracted Estimate $\Sigma(\lambda^2_{yi})/[(\lambda^2_{yi})+(Var(\varepsilon_i))]$
Agreeableness" I see myself as someone	0.81	0.80				0.50
AG1: is helpful and unselfish with others			0.73	0.53	0.47	
AG2:Has a forgiving nature			0.68	0.47	0.53	
AG3: Generally trusting			0.67	0.44	0.56	
AG4: Is considerate and kind to almost everyone			0.75	0.56	0.44	
Conscientiousness I see myself as someone	0.82	0.81				0.55
CON1: Does a thorough job			0.71	0.50	0.50	
CON2: Is a reliable worker			0.78	0.61	0.39	
CON3: Perseveres until the task is finished			0.72	0.52	0.48	
CON4: Does things efficiently			0.73	0.53	0.47	
CON5: Makes plans and follows through with them			0.76	0.58	0.42	
Openness to experience I see myself as someone	0.87	0.80				0.54
OE1: Is original, comes up with new ideas			0.71	0.51	0.49	
OE2: Is curious about many different things			0.73	0.53	0.47	
OE3: Is ingenious, a deep thinker			0.75	0.56	0.44	
OE4: Has an active imagination			0.78	0.61	0.39	
OE5: Is inventive			0.71	0.50	0.50	
Extraversion I see myself as someone	0.71	0.74				0.52
EX1: Is talkative			0.74	0.55	0.45	
EX2: Is full of energy			0.73	0.53	0.47	

Table 8 (continued)

	Alpha	Composite reliability	Standardized Loadings (λ_{yi})	Reliability (λ^2_{yi})	Variance ($Var(\varepsilon_i)$)	Average Variance-Extracted Estimate $\Sigma(\lambda^2_{yi})/[(\lambda^2_{yi})+(Var(\varepsilon_i))]$
EX3: Generates a lot of enthusiasm			0.70	0.49	0.51	
EX4: Has an assertive personality			0.70	0.49	0.51	
Emotional stability I see myself as someone	0.81	0.79				0.52
ES1: Is relaxed, handles stress well			0.71	0.50	0.50	
ES2:Is emotionally stable, not easily upset			0.77	0.59	0.41	
ES3: Remains calm in tense situations			0.74	0.55	0.45	
ES4: Can be tense (R)			0.71	0.50	0.50	
ES5: Worries a lot (R)			0.66	0.44	0.56	
Investment attitude	0.83	0.89				0.52
IA1: I trust in managing my investments effectively			0.71	0.51	0.49	
IA2: I am confident in tried and tested investments practices rather than trying new ideas			0.72	0.52	0.48	
IA3: I accept that financial experts cannot win preferred returns in the market for the long term, so index funds are the best investments			0.71	0.50	0.50	
IA4: I accept that with the right information and effort, individuals and the board can get very rich through dynamic portfolio scoring			0.71	0.50	0.50	
IA5: Once I settle for an investments choice, I don't change it for a while			0.70	0.50	0.50	
IA6: I have the confidence to contribute investments continuously throughout my life			0.72	0.52	0.48	
IA7: I believe that it is essential to set clear money-related goals			0.70	0.50	0.50	

Table 8 (continued)

	Alpha	Composite reliability	Standardized Loadings (λ_{yi})	Reliability (λ^2_{yi})	Variance ($Var(\varepsilon_i)$)	Average Variance-Extracted Estimate $\Sigma(\lambda^2_{yi})/[(\lambda^2_{yi})+(Var(\varepsilon_i))]$
IA8: I usually audit the performance of my investments with showcase benchmarks			0.74	0.55	0.45	
IA9: I carefully audit the data related to the money I receive via email			0.79	0.62	0.38	
Investment priority	0.89	0.88				0.53
IP1: I invest my pension amount to satisfy my retirement objectives			0.70	0.49	0.51	
IP2: To ensure a comfortable retirement			0.73	0.54	0.46	
IP3: I invest the money as a principle instalment of my house			0.72	0.52	0.48	
IP4: To achieve high growth in investments			0.75	0.56	0.44	
IP5: To protect income in case of death/disability			0.73	0.53	0.47	
IP6: To ensure transfer of assets to dependents smoothly			0.76	0.58	0.42	
IP7: To invest in an endowment plan (Assured returns + Risk cover)			0.70	0.49	0.51	
IP8: To invest in unit linked insurance plan (Market linked returns + Risk cover)			0.75	0.56	0.44	
Risk capacity	0.88	0.91				0.54
RC1: I pull back my investment funds in money market stores for emergencies			0.75	0.56	0.44	
RC2: I take a loan for promising long term investing opportunity			0.75	0.56	0.44	
RC3: I take a loan for promising short term investing opportunity			0.73	0.54	0.46	
RC4: I make necessary changes to improve my investment performance, using my judgment			0.73	0.54	0.46	
RC5: I wait it out, anticipating future improvements over the long run			0.73	0.54	0.46	
RC6: I consult with a financial advisor before taking any action?			0.72	0.52	0.48	

Table 8 (continued)

	Alpha	Composite reliability	Standardized Loadings (λ_{yi})	Reliability (λ^2_{yi})	Variance ($Var(\varepsilon_i)$)	Average Variance-Extracted Estimate $\Sigma(\lambda^2_{yi})/[(\lambda^2_{yi})+(Var(\varepsilon_i))]$
RC7: I indulge in panic selling			0.71	0.50	0.50	
RC8: I assess the tax implications of the investment			0.73	0.53	0.47	
RC9: I determine my return objective for the investment			0.75	0.56	0.44	
RC10: I am real gambler willing to task risk after completing adequate research?			0.74	0.55	0.45	
Investment strategy	0.92	0.91				0.55
IS1: I review my overall investment goals			0.73	0.54	0.46	
IS2: I consider the variety of investment options			0.78	0.61	0.39	
IS3:I get investment information from financial advisor (Individual / Institutional)			0.72	0.51	0.49	
IS4:I get investment information from television			0.73	0.54	0.46	
IS5:I buy/sell investments over online trading?			0.74	0.54	0.46	
IS6: I use investment analysis/management software?			0.77	0.59	0.41	
IS7: I discuss with my family/friends who are knowledgeable in trading			0.72	0.52	0.48	
IS8:I assess the convenience with which the investment can be made, looked after and disposed			0.73	0.54	0.46	
IS9:I weigh all the pros and cons and analyze all the facts before taking financial decisions			0.70	0.49	0.51	
IS10:Safety of investment is the most important factor I look at when choosing a investment strategy			0.75	0.56	0.44	

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Declarations

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