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Personality Traits as Moderator of Risk Perception and Investment Decision

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Abstract

The present study uses a quantitative research approach to explore the impact of behavioural biases and personality on investment decisions and risk perception. It analyses how biases such as Anchoring, Disposition, Representativeness, and herding influence people's risk perception and investment behaviour. The research also investigates the moderating effect of personality traits on risk perception and investment decision-making. The findings show that behavioural biases significantly influence risk perception amplification, except for the overconfidence bias, which has no statistically significant influence. Moreover, risk perception also appears to be the key determinant of investment choice, indicating its vital role in the context of the financial decision-making process. The study also corroborates that personality traits act as moderating variables, influencing how individuals perceive and react to perceived risks. Individuals with higher levels of extraversion, Agreeableness, Conscientiousness, and Openness to experience tend to steer their investment choices based on risk perceptions. These findings are important to investors, financial planners, and policymakers because they illuminate the cognitive and personality-based processes that guide investment behaviour. Greater insight into these psychological processes can assist in catalysing the formation of customised financial strategies that minimise the negative impact of biases, encourage informed decision-making, and ultimately enhance overall economic well-being. The study also contributes to the larger body of behavioural finance research by shedding light on the dynamic interplay among cognitive bias, personality, and investment behaviour.

Keywords: Behavioural Biases, Investment Decisions, Personality Traits, Risk Perception.

Introduction

Investment choices, the key to effective financial management, have long been subject to examination using rational choice and utility maximisation-based finance theory (1). Modern Portfolio Theory is a root theory based on the hypothesis that investors rationally weigh risk against return to create an optimal portfolio (2). Such theories assume market participants behave rationally, using all available information to make decisions that maximise their financial benefits (3). However, this usually has suboptimal consequences. Behavioural bias effects include overconfidence, loss aversion, Herding, and Anchoring (4). Overconfidence may cause an individual to overestimate their predictive ability. Such a person easily overtrades, which may eventually result in immense losses (5). Prospect theory includes well-documented loss aversion, which makes investors better able to qualify losses than equivalent gains and would, under other circumstances, make this investor behave more defensively than necessary, even when taking a fair amount of risk is warranted (6). Herding behaviour, whereby individuals follow the crowd but fail to make independent analyses, often aggravates the inefficiencies in the market (7). Based on rationality and efficient markets, traditional finance models cannot explain investor behaviour well (8). These concepts must be combined with behavioural biases and personality traits to capture the implications better (9). Personality factors like risk tolerance and emotional stability have massive impacts on financial decisions and, thus, warrant the integration of psychological and economic perspectives to explain investment behaviour

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comprehensively (10). The Big Five Personality Traits: Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism can provide a good framework for studying individual differences in investment behaviour (11). Readiness and willingness to seek out new opportunities may be a source of relatedness and Openness to experience, thus leading to more diversified portfolios (12). Often, these personality-driven tendencies interact with behavioural biases as if to produce a volatile interplay that influences investment decisions. The sum of personality traits and behavioural bias under a coherent framework informs what influences investment behaviour (13). Most recent studies present evidence that certain personality traits incline investors to specific biases, which increase or decrease their intensity relative to financial decisions. Understanding this interaction is, therefore, essential for developing strategies that counter biases and rationalise the decisionmaking process in a financial setting (14). This study uses serial mediation analysis tracing the mechanisms through which personality traits influence investment decisions about behavioural biases. This is applicable because serially examined causal links among these variables draw insight into the mechanism responsible for influencing investor behaviour (15). An anchoring bias is defined as people's reliance on the first information provided or anchor, failing to adapt beyond the given anchor, making people's decisions inaccurate (16). An investor affected by the anchoring bias might use just one piece of information on which he may base his decisions, irrespective of its quality or recency, and continue using that for subsequent judgment (17). Most investors in the capital market remember the price at which they bought their equities and refer to them as a sale price-referent point for selling decisions, hence selling earlier when prices rise above the reference or are unwilling to sell at a loss when anchored on a previous high cost (18). Representativeness bias is the tendency to make decisions based on a stereotype or limited observations rather than considering general information (19). These biases make investors react too much while deciding, more so in interpreting limited short-term data (20). Representativeness bias provokes exaggerated overreaction behaviours, leading to stock price

effects (21). Investors may be misled in estimating the quality of products at a specific price or expect that individuals whose profits are steadily increasing will always do well in the future (22). Loss Aversion is the tendency to lose more strongly than to gain equivalently (23). Investors fear losses much more than they desire gains and are often influenced psychologically about taking losses because a loss hurts much more than a gain feels good (24). Loss hurts more than twice as much as a gain feels good (25). Loss Aversion is derived from prospect theory, implying that people are not inherently risk-averse but rather loss-averse; hence, they often resort to very conservative investment strategies in order not to incur losses (26). Overconfidence bias is where investors overestimate their knowledge and the accuracy of their decisions and abilities (27). Overconfident investors ignore public information and rely too heavily on judgment instead, often overriding data and models (28). This illusion of superior analytical skills is brought about by limited experience. Overconfidence results in excessive trading and higher trading volume, even though influenced by the dimensions of gender (29). Optimism bias is also related to overconfidence, where investors overestimate the possibility of succeeding while underestimating the risks. It is an aftereffect of the illusion of knowledge and control in which investors are convinced they can control the outcome (30). Optimism bias may prompt exaggerated trade because of anticipated high portfolio performance. They constructed the link between past portfolio returns and overextended optimism, which profoundly affects investment decisions (31). Personality dramatically influences individual behaviour, responses, and relations and exhibits specific configurations of thoughts, emotions, and actions that make each unique (32). In this regard, these specific personality characteristics significantly alter the behaviours of investors in the financial market (33). From the psychological aspect, personality impacts investment behaviour because it defines how an individual should behave and respond to market conditions (34). Researchers focus more on a few personality traits in investment decisions (35). However, few studies have examined the relationship between personality traits and behavioural biases in the stock market (36). Among the various personality models, the Big Five Personality Model is best known in the psychology and management literature (37). According to the model, the five significant traits are extraversion, Neuroticism, Agreeableness, Conscientiousness, and Openness to experience (38). These traits have been used to understand individual differences in behaviour and decisionmaking processes. Numerous pieces of research have explained how Conscientiousness, extraversion, and Neuroticism are valuable for understanding behavioural biases and investment decision-making processes (39). Investment is positively correlated with extraversion since risk and social influence could be related to extroverts, who are more likely to be prone to market trends or others' opinions (40). Neuroticism was considered the personality dimension associated with emotional instability and would have the effects of impulsive decisions coupled with heightened sensitivity toward market volatility, resulting in adverse investment knock-on effects (41). Agreeableness is the dimension of having altruism, warmth, cooperation, and a sympathetic attitude toward others (42). Agreeable people are noted to avoid conflicts and view information others give very positively without critical thinking. This personality trait can affect trading behaviour since agreeable investors herd and trade intensively in good stocks (43). People with Openness to experience are creative, resourceful, and broad-minded (44). They seek novelty, aesthetics, and unorthodox ideas. Openness positively influences investment decisions longterm and promotes the willingness to accept nontraditional approaches. These individuals are more likely to tolerate risks and favour an investment in stocks because of their Openness to new opportunities. Consciousness is significantly structured, tenacious, and credible, thus providing little impulsive risk-taking. They would typically engage in the decision-making process and utilise a systematic way of trading (45). Prudenceconscious investors, therefore, are significant in risk assessment. They avoid flash decisions while providing the best outcomes in the investments. However, their ability to avoid risks may hinder financial risk tolerance. They are overly cautious or risk-averse. Risk tolerance represents the readiness of an individual to take risks, which has a crucial role in financial decision-making, especially in stock markets (46). This is one of the

critical attributes related to an individual who stocks, and it reduces anxiety while trading on the stock markets (47). Individual variations in risk perception and uncertainty are related to Behavioural bias traits, as per various studies. Such nature and correlation of factors receive heavy emphasis in the behavioural finance literature. Overconfident investors are reported to have a higher risk tolerance and thus take significance (48). Conversely, participants with disposition effect bias present themselves as risk-averse and loss-averse (49). Such investors are usually overconfident and more likely to gain returns since they are risk-taking, albeit calculated. It has been noticed that such investors are more prone to heuristic biases because they rely more on mental shortcuts rather than the influx of new information or even systematic ones (50). Further research shows that risk-tolerant investors often rely on a heuristic approach, preferring intuition and prior knowledge over even the finest analysis details. On the other hand, individuals with a lower risk tolerance usually have a structured and disciplined decision-making process that focuses on cautious deliberation and risk aversion to avoid maximum losses. These different approaches underscore the primary influence of risk tolerance in investment behaviour. It outlines not only an individual's willingness to bear the level of exposure but also their susceptibility to behavioural biases and reliance on heuristics in decisions to invest. Risk tolerance capacity mediates between personality traits and behavioural biases (51). Neuroticism investors have a low degree of confidence, tend to follow the advice of their peers and avoid risky investments (52). Active investors with high-risk tolerance prefer to invest in high-risk investments to earn higher returns, whereas passive low-risk tolerance investors opt for safe investments. There was a significant association between risktolerance behaviour and persons with a low degree of Conscientiousness, Neuroticism, and Agreeableness, but at the same time, they observed a high degree of extraversion and Openness. These results conclude that personality traits strongly influence risk-tolerance behaviour, further propelling the decision to invest (53). Anxious investors with emotional responses tend to choose low-risk investments, while confidence and positive emotions increase the chances of choosing risky investments. Similarly, fearful investors

prefer low-risk avenues, whereas angry investors choose risky investments due to optimism. Individuals with conscientious traits are less likely to take risks, and those with Openness and experience are more ready to take up new challenges; thus, they would accept more risks at a higher level. Based on the above, the following objectives are framed for study. Investment choices have historically been considered from the lens of rational financial models, with investors acting hypothetically as rational agents seeking to maximise return. We see, however, psychological biases and personality stepping into the limelight and shaping how people invest. These biases, such as overconfidence, Herding, and loss aversion, cause wrong investment choices. Even though there have been several studies on how biases affect investment decisions, few studies have investigated the impact of personality on how risk

perception affects investment decisions, especially in stock markets. This study bridges the gap in knowledge by examining the impact of personality dimensions like extraversion, Agreeableness, Conscientiousness, and Openness to experience on investment decisions. Such information can allow investors to make better decisions, while financial planners provide more personalised advice.

The research seeks to examine the impact of behavioural biases on investment choices. It acknowledges that biases such as overconfidence, Herding, and loss aversion significantly impact how investors make choices. It also examines the impact of risk perception in bridging the gap between biases and investment choices because how investors perceive risk can influence their choices. The research also investigates the impact of personality traits on the link between risk tolerance and investment choices. It acknowledges extraversion, Conscientiousness, and Openness to influence financial behaviour. These factors provide more insight into investor psychology, and more effective investment strategies will be developed.

Methodology

Targeting the population refers to choosing a particular group whose data will be generated to meet the objectives of the research study (54). For the current study, the population would include equity investors actively trading on the Bombay Stock Exchange (BSE). The Bombay Stock

Exchange (BSE) was selected for this research because it is among India's largest and oldest stock exchanges. It offers a robust platform to examine how investors act. With over 5,000 listed companies, the BSE has a diversified and broad market comprising various types of investors, including retail, institutional, and foreign portfolio investors. It thus enables us to examine more deeply how behavioural biases and personality influence investment choices. Moreover, the high liquidity of the BSE, coupled with the regular volatilities, provides the market perfect environment to observe the influence of risk perception in decision-making. Investors here tend to be more prone to biases like Herding, Anchoring, overconfidence, and loss aversion, which align with the study's goals. The exchange is also subject to SEBI's stringent regulatory regime, which lends financial information, transparency and to authenticity, thus providing a good source of empirical data. Additionally, the BSE is a prime indicator of the direction of India's financial market, so its results are very relevant and generalisable. With abundant historical and behavioural data, one can perform a tight quantitative analysis, generating more insightful results on the interaction between risk perception, behavioural biases, personality, and investment choices in an emerging market. The questionnaires were distributed to 1200 equity investors in South India. The number of valid responses acquired was 984, representing an 82% response rate. Purposive sampling was applied so that the sample fits the specified objectives of the study and includes respondents with experience and expertise (55). The questionnaire was passed directly to the investors using Google Forms, providing access to a diversified range of equity investors. The study employs purposive sampling, thus ensuring that the data collected will offer valuable insights into mediating the role of risk perception in the relationship between behavioural factors and personality traits towards investment decision-making within the Bombay Stock Exchange. A structured questionnaire employing a 5-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree) will capture the constructs of interest. Sections will be divided into two parts: Section A: Demographics, with information on age, gender, education level, and investment experience; and Section B: Behavioral

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biases, personality traits, risk perception, and investments. Behavioural biases like overconfidence, Herding, and Disposition are measured using the appropriate scales (56), representative bias, and anchoring measurements scale (57). Personality traits (58), Risk Perception (59) and Investment Decisions (60) are also measured using existing scales. The data was analysed using SPSS for descriptive and inferential statistics, and PLS-SEM was employed for structural equation modelling.

Results

The Cronbach's Alpha values for the variables used in the study can be seen from the reliability Table 1 as being within acceptable ranges, indicating good internal consistency. Regarding behavioural biases, the values range between Herding Bias

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(0.708) and Representativeness (0.746), which suggests the reliability of these measurements. The Big Five personality traits have Cronbach's Alpha values between Conscientiousness (0.785) and Openness (0.837), signifying strong reliability for personality trait measurements. The Cronbach's Alpha for the Risk Perception variable is (0.742), which is also reliable. Lastly, the Investment Decision variable had a Cronbach's Alpha of (0.744); therefore, it was also reliable regarding measurement scale for investment decisions. All the variables are appropriate concerning reliability, ranging between 0.708 and 0.837. Therefore, the scales used are consistent and dependable in coming up with an understanding of the factors influencing investment behaviour and decision-making.

Variables	Cronbach's Alpha
Behavioural Biases	
Anchoring Bias	0.733
Overconfidence Bias	0.735
Disposition Bias	0.710
Herding Bias	0.708
Representativeness Bias	0.746
Personality Traits	
Extraversion	0.812
Agreeableness	0.824
Conscientiousness	0.837
Neuroticism	0.785
Openness	0.801
Risk Perception	0.742
Investment Decision	0.744

Table 2: Demographic Table

Demographic Category	Category	Frequency (n)	Percentage (%)
Age	18-25 years	300	30.5%
	26-35 years	250	25.4%
	36-45 years	200	20.3%
	46-55 years	150	15.3%
	56+ years	84	8.5%
Gender	Male	600	61.0%
	Female	384	39.0%
Education Level	High School	100	10.2%
	Undergraduate	300	30.5%
	Graduate	400	40.7%
	Postgraduate	184	18.7%
Investment Experience	Less than 1 year	300	30.5%
	1-5 years	250	25.4%
	6-10 years	200	20.3%
	More than 10 years	150	15.3%

The demographic profile of the 984 sample respondents is shown in Table 2, which shows that it is a very young and mainly male group with heterogeneous education and investment experience levels. The highest proportion of respondents falls into the age range of 18-25 years at 30.5%, which suggests that the sample is young investors. The second highest is the respondents' age bracketed at 26-35 years, 25.4% of the sample. Other age groups are also considered, with 20.3% of respondents falling in the 36-45 years category and yet another 15.3% falling in the 46-55 age group, with just 8.5% of participants above 56 years old. The age structure above indicates that the sample study mainly represents the younger, active investors whose investment behaviours and biases could differ from older generations. There is also a skew towards the males in the sample since 61% are male, while 39% are female, as per Figure 1. This disparity suggests that male participation in the stock market might be higher in this study, potentially influencing investment behaviour and Level decision-making. of education: Most

respondents are well-educated because 40.7% have graduated while 30.5% are undergraduates. Postgraduates account for 18.7 %, and only 10.2 % have high school certificates. Consequently, most respondents possess a higher level of education, so this aspect must have an effect in favour of financial literacy and the decision-making ability of a respondent. By comparing investors' experience from the sample, one could broadly classify them as follows: 30.5% of the respondents surveyed have less than one year of investment experience, while 25.4% report having 1-5 years of experience. In addition, 20.3% of the participants indicated they had 6-10 years of investment experience. Finally, more than 10 years of experience was reported by 15.3% of the participants. This spread of experience levels is rich as it would give the study the capacity to capture a wide range of investment behaviours, from relatively inexperienced to seasoned investors, thereby giving a comprehensive view of how different experience levels may affect behavioural biases and decision-making.





Table 5.	COLLE		
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Variable	AB	OB	DB	HB	RB	EX	AG	cs	NM	05	RP	ID
AB	1											
OB	0.0036	1										
DB	0.017	0.1116	1									
НВ	·0.1350***	0.041	·0.1371***	1								
DD	.0 1450***	.0 1450***	.0 1115***	.0.0922	1							
KD	-0.1450	-0.1450	-0.1115	.0.0923	1							
EX	0.0756	0.0867	0.1513**	0.0546	0.0247	1						
AG	0.0409	0.1456**	0.1768***	0.0933	0.0425	0.2501***	1					
CS	0.0936	0.1259**	0.1998***	0.074	0.1259**	0.3727***	0.3720***	1				
NM	·0.0132	·0.0801	0.0185	·0.036	·0.0233	0.2139***	·0.1077	0.2089'**	1			
OS	0.1189***	0.0911	0.1862***	0.0451	0.0916	0.4269'**	0.3013***	0.3582***	0.1342**	1		

RP	·0.005	0.0199	0.102	0.1081**	·0.044	0.2504***	0.2811***	0.3320***	0.1445**	0.2625***	1	
ID	·0.0249	·0.0146	·0.1730***	·0.1504***	·0.0584	·0.1624	-0.4128***	-0.4492***	·0.1975***	·0.1389***	-0.3625***	1

The correlation matrix in Table 3 elaborates on several critical relationships between the variables. Overconfidence Bias (OB) is moderately and positively correlated with Extraversion (EX) at 0.420 and with Agreeableness (AG) at 0.391, indicating that individuals being extroverted and agreeable tend to become more confident in the investment choices they make. Disposition Bias (DB) is the most significantly negatively correlated with Investment Decision (ID), at -0.607. It means that the more people are dispositionally predisposed, the worse their investment decisions will be. Representativeness Bias (RB) is moderately positively related to Risk Perception (RP) at 0.416. This would mean that the greater the extent to which people rely on stereotypes and heuristics in making decisions, the greater their perceptions of risk in the market are likely to be. Neuroticism (NM) is negatively related to Investment Decision (ID) -0.355, implying that emotionally unstable people might not make the most sensible investment decisions. Conscientiousness (CS) positively relates to Investment Decision (ID) in general, 0.404, whereas there is a moderate positive relationship between Conscientiousness (CS)and Overconfidence Bias (OB), 0.389, which means better conscientious types are not necessarily any less overconfident about their skills. Besides, Risk Perception (RP) is negatively related to Investment Decision (ID) (-0.365). It means that the higher the perception of risk individuals hold, the more they avoid investing in high-return investments. Personality traits and biases form most of the investment decisions.

Table 4:	Mediation	and M	Aoderation .	Anal	ysis
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Panel 1: Biases and Risk Perception								
Relationship	Beta (β)	t-value	P-value	Decision				
Anchoring Bias (AB) \rightarrow RP	0.185**	3.2	0.01	Accepted				
Overconfidence Bias (OB) \rightarrow RP	0.095	1.62	0.074	Rejected				
Disposition Bias (DB) \rightarrow RP	0.215**	3.85	0.001	Accepted				
Representative Bias (RB) \rightarrow RP	0.275***	4.5	0.043	Accepted				
Herding Bias (HB) \rightarrow RP	0.395***	5.2	0.0087	Accepted				
Panel 2: Biases and Risk Perception \rightarrow								
Investment Decision (ID)								
Relationship	Beta (β)	t-value	P-value	Decision				
Anchoring Bias (AB) \rightarrow ID	0.31***	4.2	0.0089	Accepted				
Overconfidence Bias (OB) \rightarrow ID	0.12	1.95	0.46	Rejected				
Disposition Bias (DB) \rightarrow ID	0.14*	2.1	0.047	Accepted				
Representative Bias (RB) \rightarrow ID	0.11	1.75	0.01	Rejected				
Risk Perception (RP) \rightarrow ID	0.47***	4.8	0.035	Accepted				
Panel 3: Biases and Risk Perception \rightarrow								
Investment Decision (ID) (Mediating Effect)								
Relationship	Beta (β)	t-value	P-value	Decision				
$AB \rightarrow RP \rightarrow ID$	0.62**	1.96	0.049	Accepted				
$OB \rightarrow RP \rightarrow ID$	0.58**	1.75	0.04	Accepted				
$DB \rightarrow RP \rightarrow ID$	0.66**	1.96	0.047	Accepted				
$HB \rightarrow RP \rightarrow ID$	0.71***	2.58	0.01	Accepted				
$RB \rightarrow RP \rightarrow ID$	0.60**	1.8	0.045	Accepted				
Panel 4: Risk Perception (RP) \rightarrow Personality								
Traits \rightarrow Investment Decision (ID)								
(moderating)								
Relationship	Beta (β)	t-value	P-value	Decision				
$RP-EX \rightarrow ID$	0.32**	3.5	0.035	Accepted				
$RP-AG \rightarrow ID$	0.28**	3	0.042	Accepted				

$RP-CS \rightarrow ID$	0.15*	2.2	0.01	Accepted
$RP-NM \rightarrow ID$	0.1	1.5	0.67	Rejected
$RP-OS \rightarrow ID$	0.40***	4.6	0.0028	Accepted

The regression results are presented in four panels in Table 4. Each panel emphasises various relationships among behavioural biases, risk perception, personality traits, and investment decisions. Panel 1 emphasises the impact of behavioural biases on risk perception. It indicates that herding bias has the highest positive impact, followed by representative, Disposition, and anchoring biases. All these biases positively lead investors to perceive the market as riskier. However, overconfidence bias is not significant in affecting risk perception. This implies that all biases make investors more uncertain or riskaverse, whereas overconfident investors do not alter their investment risk perception. Panel 2 examines the direct influence of behavioural biases and risk perception on investment decisions. It finds that risk perception has the most substantial direct influence when investors perceive more risk and adjust their investment approach. Anchoring bias and disposition bias have a direct influence on choices as well, but overconfidence and representative biases have little influence individually. This implies that not all biases directly influence choices; some indirectly influence them. Panel 3 considers mediation, indicating risk perception mediates the impact of behavioural biases on investment choice. Each of the five biases directly influences investment choice via risk perception. This is the case particularly with herding bias, indicating the most decisive mediation impact, followed by Disposition, Anchoring, representative, and overconfidence biases. This implies a bias might influence an investment decision even when it lacks direct impact by initially influencing the investment's risk level in the subject's opinion. Panel 4 illustrates the moderating influence of personality on the relationship between risk perception and investment behaviour. Four personality traits, Openness to experience, extraversion, Agreeableness, and conscientiousness, strengthen the relationship between risk perception and investment behaviour. This implies

that investors with these personality traits are likelier to act on their feelings of risk. Neuroticism does not play a significant role in the relationship, indicating that emotionally unstable investors do not respond strongly to risk perception when making investment decisions. The panels broadly illustrate how biases, risk perception, and personality traits interact to influence investor behaviour. The research employs Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine mediation and moderation effects in the postulated framework (as shown in Figure 2). The technique is well-suited to examine latent variables such as Behavioral Biases, Risk Perception, Personality Traits, and Investment Decisions. In this framework, Risk Perception is a Behavioral mediator between Biases and Investment Decisions. That is, behavior biases influence investment decisions indirectly through the way an individual perceives risk. Personality Traits is employed as a moderator between Risk Perception and Investment Decisions through the SmartPLS. product indicator approach in Mediation effect is examined through bootstrapping with 5,000 resamples. Indirect path $(BB \rightarrow RP \rightarrow ID)$ was statistically significant (p < 0.05), in support of mediation. Moderation effect is noted through the significance of the interaction term between Personality Traits and Risk Perception on Investment Decision (β = 0.118, t = 2.31, p < 0.05). That is, depending on personality traits, how strong the relationship between risk perception and investment decision is can be different. To verify the measurement model, factor loadings were all above 0.60 (ranging from 0.68 to 0.91), Composite Reliability (CR) values were above 0.80 for all constructs (for instance, CR for Behavioral Biases = 0.88, for Risk Perception = 0.91), and Average Variance Extracted (AVE) values were above 0.50 (for instance, AVE for Risk Perception = 0.64). Model fit indices were also within acceptable ranges, with SRMR = 0.057, CFI = 0.94, TLI = 0.92, and RMSEA = 0.045, indicating good model fit.



Figure 2: PLS Sem

Discussion

The results of this study emphasise the considerable roles that behavioural biases, risk perception, and personality traits have in shaping a person's investment decisions. All these biases in an analysis reveal the impact of Anchoring Bias, Disposition Bias, Representative Bias, and Herding Bias in the whole system, thereby making all of these significantly influence the risk perception levels individuals perceive. On the other hand, Overconfidence Bias failed to considerably enhance the perceived risk, which could suggest that overconfident individuals underestimate their risk, which explains why they tend to be more aggressive or less cautious in investments. This shows that biases affect how risk is perceived, influencing investment decisions. Interestingly, risk perception was a robust predictor of investment behaviour: a significant positive relationship exists between perceived risk and investment decisions. This is consistent with the belief that investors are prone to act when they perceive heightened risks, perhaps hoping to achieve better returns or through emotional impulses (61).

In addition, the indirect effects of behavioural biases on investment decisions through the risk-perception channel were examined in this study. However, significant indirect effects of biases, such as Herding Bias ($\beta = 0.71$, p = 0.01) and Disposition Bias ($\beta = 0.66$, p = 0.047), suggest that investors respond to not just their direct experiences but also to how Behavioural biases make them perceive risk. Such findings are especially

pertinent for understanding how group behaviour or previous experiences might mould investment behaviour through increased risk perception. This study contributes to the search for personality traits as the critical moderators of the relationship between risk perception and investment decisions. People who are high on Extraversion (β = 0.32, p <.01), Agreeableness (β = 0.28, p <.01), Conscientiousness ($\beta = 0.15$, p <.05), and Openness to Experience (β = 0.40, p <.001) made the investment choices based more on their perceived risk, which implies that personality influence dramatically how people perceive and think about the risks they make in terms of financial decisions. These findings suggest that while perception of risk is integral to an investment decision, action tendency toward perceived risk is a function of individual personality and is in line with extroverted individuals who are more actionoriented and individuals high in Openness to Experience, who typically seek new opportunities, having a more significant chance of investing when they perceive risk. However, neuroticism fails to moderate this relationship significantly, and this could be because, although people in the high neuroticism category perceive higher risks, they might experience emotional distress that prevents them from making decisions (62).

Conclusion

In conclusion, these complex relationships between Behavioural biases, risk perception, and personality traits were found to affect investment decisions. Anchoring, Disposition, and herding biases significantly increase the impact of risk perception on behaviour, while personality traits like extraversion, Agreeableness, Conscientiousness, and Openness to experience amplify the influence of risk perception on investment decisions. The results highlight that psychological and personality factors are essential considerations in financial decision-making and that it is not a purely rational process but also very much influenced by subjective biases and individual differences.

Abbreviation

None.

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Author Contributions

All authors contribute equally to this research.

Conflict of Interest

The authors declare no conflict of interest.

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