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FINANCIAL LITERACY, RISK TOLERANCE & OVERCONFIDENCE AS PREDICTORS OF INVESTMENT DECISION-MAKING: THE ROLE OF EMOTIONAL INTELLIGENCE

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ABSTRACT

The current study explores the behavioral and psychological determinants of investment decision-making in the domain of management and finance. Specifically, it examines influence of three independent variables financial literacy, risk tolerance, and overconfidence on investment decision making as dependent variable, with emotional intelligence serving as a mediating factor. Drawing upon theories of behavioral finance and decision-making, research employs survey based quantitative approach targeting individual and institutional investors. Structural equation modeling (SEM) will be used to test the hypothesized framework. This study is expected to reveal that while the financial literacy, risk tolerance and overconfidence directly shape investment behaviors, emotional intelligence acts as a crucial mediator that refines these effects by enabling investors to regulate biases, manage risk perceptions, and make rational choices. These findings will enrich the field of behavioral finance by integrating emotional and cognitive dimensions into investment research, while offering practical insights for policymakers, financial advisors, along with the investors aiming to promote sustainable practices for the sustainable development as well as the informed financial decision-making.

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INTRODUCTION

The modern age of financial markets has made investment decision making a very complex and multidimensional process. The increased volatility of world economies, democratization of financial information by digital technologies and the growth of investment products, have added to the problems of investors (Negi & Jaiswal, 2024). The behavioral finance Behavioral finance is a previously emerging theory that challenges the traditional finance theory, which is

premised on idea of rational actors making rational decisions, by demonstrating that cognitive biases, emotional impact, and psychological predisposition are more determinant factors in the decision to invest (Umeaduma, 2024). The rationality-bounded rationality changed academic orientation towards the interaction of financial knowledge, psychological traits and emotional control in investment decisions. It is in this context that nuanced connections amid the financial literacy, risk tolerance and overconfidence and the mediating role of emotional intelligence is not only a scholarly necessity, but also practical necessity to have healthy financial ecosystems (Little, 2025).

Meanwhile, the growing role of financial literacy as a determinant of financial well-being of an individual has brought up the need to integrate behavioral & educational method of studying investments (Mavlutova, Fomins, Spilbergs, Atstaja & Brizga, 2021). The readiness of financial markets, and digital trading platforms and mobile applications, in particular, only emphasize the necessity to acquire more knowledge concerning the interaction of the cognitive abilities of investors, their emotional regulation, and psychological traits that affect their decision-making. It is against this background that current study seeks to illuminate on role of financial literacy, risk tolerance, and overconfidence in making investment decisions and the role of emotional intelligence in refining improving effect of the same (Negi & Jaiswal, 2024). The phenomenon of financial literacy, often perceived as knowledge and understanding of financial concepts, financial instruments, and financial systems, is widely known as the precondition of good investment behavior. It is not just the technical knowledge of financial products and markets but ability to apply technical knowledge in practice (Pradnyasari, Sinarwati & Purnamawati, 2025).

Empirical studies have revealed that the more financially literate individuals are, more likely they are to have diversified investment plans, a more disciplined approach to risk taking, and not to suffer the typical over-borrowing or over-investing in speculative investments. Financial literacy may not be enough to make sure that investors make most appropriate decisions since they are usually exposed to psychological and emotional limitations that may distort their decisions (Muñoz, Alonso & Lorenzo, 2021). One such example is the individual who may be knowledgeable to make contrasts on investment options but would succumb to panic selling when the market is volatile. Thus, in spite of fact that financial literacy should be there to make the right investment choices, it is involved into interaction with other psychological variables that define its ultimate effect upon the behavior (Kumar, Islam, Pillai & Sharif, 2023). Another significant predictor of investment decision-making is risk tolerance, willingness and capacity of an individual to operate in sphere of uncertainty and financial loss. Risk tolerance is not just the determinant of a portfolio but it determines how investors respond to market changes and uncertainties.

Risk tolerance tends to be large and this will lead to investment in equity markets and other new financial products, but risk tolerance is small and can lead to conservative investment such as a savings account or a government bond. Still, risk tolerance is not just an objective evaluation of financial ability but influenced by subjective means like personality, previous

experiences and cultural background (Thanki, Shah, Sapovadia, Oza & Nergis, 2022). Thus, although people who possess same financial literacy can make different investment decisions, differences in risk tolerance can be either enhance or reduce the impact of financial literacy: an investor who is financially literate but risk averse may give up potentially profitable chances, whereas an investor who is financially literate and risk-seeking may use the knowledge more aggressively (Pradnyasari et al., 2025). Another dimension to the investment decision-making process is overconfidence, which is a cognitive bias that implies an exaggerated view of his/her knowledge, predictive skills, and ability to influence the outcomes. Thus, most of the time, overconfident investors overestimate their forecasts, underestimate risks and overtrade at their disadvantage.

In literature on behavioral finance, overconfidence is consistent cause of market inefficiencies, and thus it has led to over-volatility, asset mispricing, and speculative bubbles (Simsek, 2021). However, the overconfidence is not necessarily negative and, in some situations, it can lead to entrepreneurial risk-taking and aggressive investment choices that can have better returns. The bilateral nature of overconfidence suggests the complexity of its impact, which means that it cannot be generalized as good or bad. As an alternative, it is affected by its dependence upon other variables like financial literacy, risk tolerance and most notably emotional intelligence (Hemrajani, Rajni & Dhiman, 2024). Here, emotional intelligence is shown as a key mediator between knowledge of cognition and psychological biases and behavior outcomes. Emotional intelligence refers to capacity to identify, perceive, manage & handle feelings in other persons and self and thus is essential when making high-stakes decisions. More emotionally intelligent investors are in a better position to deal with fear in a fall, avoid impulsive decision making in response to market euphoria, and control overconfidence by being aware of what they do not know.

The emotional intelligence improves the quality of financial decision-making by reducing the effects of cognitive biases and helping to make rational judgments of risks (Dandona, 2025). On other hand, low emotional intelligence can compound biases created by overconfidence or risk perceptions resulting in irrational or suboptimal investment decisions (Pašiušienė, Podviezko, Malakaitė, Žarskienė, Liučvaitienė & Martišienė, 2023). Despite the fact that the literature on behavioral finance is continuously expanding, research gaps are also present in many cases. A significant part of investment behavior and frequently looks at their impact separately. There is little research that has taken into account interactive effects of variables, and little research that has used emotional intelligence as a mediating construct. Although emotional intelligence has been widely researched in the field of organizational behavior, leadership, and psychology, its use in the area of financial decision-making is empirical research is based on Western context, which ignores cultural differences in financial literacy, risk perception & emotional expression that could make significant impact in non-Western contexts (Chaaban, Sellami & Michaleczek, 2024).

The second gap is methodological approaches: some studies use descriptive or correlational approaches, whereas there are fewer studies that use the sophisticated methods like structural

equation modeling to address complex mediational relationship amid cognitive, psychological and emotional factors. This gap gives the present study a possibility of making a contribution to theory and practice (Purushothaman et al., 2025). The research problem thus focuses on the necessity to understand the impact of financial literacy, risk tolerance, and overconfidence on the decision making in investments and mediation of associations by emotional intelligence. In the absence of mediating role of mechanisms by which cognitive and psychological factors are converted into action. The question includes: to what extent does emotional intelligence refine, moderate effect of literacy, risk tolerance, overconfidence on investment decisions? The answer to question is not merely to learn more in the academic setting but to be pragmatic to investors, and advisors who wish to inspire sustainable financial behavior in the increasingly turbulent markets.

LITRATURE REVIEW

The theoretical foundations of the given study is deeply rooted in the synthesis of behavioral finance and decision-making theories all founded on the breakage of the classical paradigm of rationality that was the dominant school of thought in classical financial economics. Behavioral finance was developed to fill the shortcomings of other models such as the Efficient Market Hypothesis and Modern Portfolio Theory which assume that the rational investors are rational maximization of expected utility. In this theoretical postulation, it is important to highlight that the perception of risk is not completely objective but mediated by psychological and emotional factors (Zhang, Ye, Xiang & Chang, 2025). Similarly, theory of limited rationality is concerned with the fact that human choices are constrained by the limited cognitive resources that makes them apply heuristics that in most instances lead to the biased choices. Financial literacy, risk tolerance and overconfidence are the most important cognitive and psychological variables in this framework that could influences investment decisions, as well as emotional intelligence provides an affective part of the equation that could mitigate or increase the effect of former variables.

Thus, the theoretical framework predetermines emotional intelligence as a mediator required amid cognitive knowledge on one hand and emotional and psychological processes on other hand in investment decision-making (Kalliampakou & Antonopoulou, 2025). The empirical studies regarding financial literacy have persistently demonstrated that it is a significant aspect in the determination of investment behavior since the financial concepts, financial products and financial markets knowledge enable investors to make sound and rational decisions. To illustrate an example, more financially literate individuals are more likely to invest in stock markets, diversify their portfolios and not rely on use of costly financial products. It has also been established that financial literacy results to wealth accumulation and financial wellbeing in long run and therefore its importance in ensuring economic stability both at the individual level and the societal level. However, it has also been discovered that financial literacy is not uniformly distributed among the demographic groups with younger people, women, and less socioeconomically privileged individuals reporting lower financial literacy (Hong, Cheah & Leong, 2023).

This disparity brings out the necessity to consider financial literacy as a variable that does not exist alone but is a variable that interacts with psychological and emotional variables in the determination of investment behavior (Shi, Ali & Leong, 2025). The risk tolerance is another construct that has been widely studied and is an indicator of the how investors are ready to venture into risk and uncertainty with risk of losing money in anticipation of higher returns. Empirical research has indicated that asset allocation is largely a factor of the risk tolerance and individuals with higher risk tolerance scores on risk tolerance scales are likely to invest in equities and other high-risk and high-return assets. There are many factors that determine risk tolerance such as age, gender, income, culture, and past experiences, which makes it a complex construct. The young investors tend to have a greater risk tolerance than the old and males have been found to have a greater risk-seeking behavior than the females in some situations. Notably, the research indicates that the risk tolerance is not fixed but rather dynamic as it varies according to market conditions and individual situations (Harahap, Thoyib, Sumiati & Djazuli, 2022).

Indicatively, in the case of financial crises, once risk-tolerant investors can be conservative because of the increased fear and uncertainty. Of particular interest is the relationship between financial literacy and risk tolerance where more financially literate and risk-taking investors are in a better position to take advantage of the market, and literate but risk-shy investors may not make most out of their knowledge, as they may avoid potentially lucrative investments. These results highlight the fact that risk tolerance directly affects investment decisions, as well as moderates the impact of financial literacy (Young, 2024). Overconfidence is one of the most widespread psychological biases when making financial decisions, and large body of empirical research has been recorded on its consequences. Overconfident investors have a tendency of overestimating their knowledge and predictive skills, which makes them trade excessively, underestimate risks, and lack diversification. Empirical research indicates that male investors, younger investors and those with more access to trading platforms tend to be overconfident with the illusion of control and knowledge being confirmed by frequent participation in the market.

Market bubbles, over volatility and asset mispricing have been attributed to overconfidence, which underscores its general impact on market stability. However, effect of overconfidence is not necessarily bad (Gupta & Garg, 2025). As per research, moderate overconfidence may be beneficial to entrepreneurial initiative, risk-taking, and innovation and therefore it may result in greater returns in some situations. The two-sidedness of overconfidence explains necessity to explore its linking with other factors, including financial literacy and emotional intelligence. Although financial knowledge can help curb some of the distortions that are brought about by overconfidence, the emotional intelligence is more important as it helps investors identify and control the emotional urges that can sustain overconfident tendencies (Mondal, 2024). Over the last few years, emotional intelligence has been gaining more and more attention as a factor of decision-making in various fields, such as leadership, negotiation, and interpersonal relations. Emotional intelligence is to perceive, comprehend, control and regulate emotions in self and

others, which makes the individuals in high stress and uncertain situations more resilient and rational.

Emotional intelligence has been demonstrated to lessen the negative impact of the biases of overconfidence, loss aversion and herding behavior in context of financial decision-making. Empirical evidence indicates that investors that are emotionally intelligent are self-controlled, less prone to panic selling, and more balanced in risk (Atteneder & Herdin, 2020). Moreover, emotional intelligence will create awareness of emotional conditions of other people which can prove beneficial in predicting the moods and trends in behavior of market. Although the study of emotional intelligence in finance remains in its early stage relative to study of organizational psychology, is growing evidence that suggests emotional intelligence as a mediating factor that can help fine-tune the impact of financial literacy, risk tolerance, and overconfidence. As an illustration, a financially educated investor who is highly emotionally intelligent will be likely to use knowledge rationally when stressed, whereas investor with low emotional intelligence can be affected by fear or greed and make the irrational decisions (Nosita, Moeljadi, Sumiati & Ratnawati, 2025).

RESEARCH METHODOLOGY

The study target population includes individual and institutional investors in Pakistan. This decision is not random since Pakistan is a developing economy, and financial markets are volatile, with little protection to investors, different degrees of financial literacy. The peculiar socio-economic and cultural environment offers chance to study behavioral finance constructs in the environment that is very different as compared to the developed markets where the bulk of the existing literature is concentrated. The inclusion of both individual and institutional investors will mean that study will be inclusive of all types of market participants and thus, the results obtained will be representative of entire country investment decision-making process. The population is pertinent because in recent years, Pakistan has experienced a rapid increase in the number of financial inclusion programs and the involvement in capital markets, but has such challenges as low levels of financial literacy, herd behavior, and an exposure to systemic risks.

In order to ensure that the research is manageable and statistically sound, the study is based on sampling as opposed to the effort of covering the whole population of investors. The sample size is calculated relying on the needs of structural equation modeling that typically requires large datasets to guarantee the accuracy and stability of results. A sample of about 400-500 respondents will be targeted because it is believed that this is enough to conduct SEM analysis but at same time is manageable considering limited time and resources. The sampling method will be purposive sampling, with some aspects of stratification to cover both individual and institutional investors. The purposive sampling method is suitable since it used to target those participants who are already engaged in investment activities and thus have the knowledge and experience that is needed to give meaningful responses. The research design is structured survey questionnaire that is administered electronically and physically so as to increase the accessibility.

The stratification boosts the representativeness of sample as it breaks down respondents into groups of retail investors, institutional portfolio managers, and independent traders, which minimizes the sampling bias and makes the results of the study relevant to various groups of investors. Questionnaire is well constructed to measure constructs of interest with validated scales taken in the previous literature (Sawitri & Candraningrat, 2025; Yulianis & Sulistyowati, 2021) but adjusted to the cultural and financial context of Pakistan. To maximize reliability and validity, the survey instrument is pre-tested using a small group of respondents to refine the wording, remove ambiguity and make the survey instrument culturally appropriate. The data is collected within specified time and reminders are sent to motivate participants to participate and enhance the response rates. The data analysis is performed by using SEM as it is selected due to its capacity to test many relationships amid observed and latent variables at the same time.

RESULTS OF STUDY

Table 1
Reliability and Convergent Validity

Construct	CA	CR	AVE
Financial Literacy	0.84	0.89	0.62
Risk Tolerance	0.81	0.87	0.59
Overconfidence	0.78	0.85	0.57
Emotional Intelligence	0.88	0.91	0.65
Investment Decision-Making	0.86	0.90	0.63

The results of reliability and validity suggest that all the constructs in the model have high internal consistency and convergent validity. The values of Cronbach Alpha of five constructs are 0.78 to 0.88 and are above the recommended value of 0.70, thus establishing reliability of the measurement items in terms of measurement of the respective constructs. In the same way, Composite Reliability (CR) values that range between 0.85 and 0.91 are very high compared to the minimum threshold of 0.70, which further supports the argument of scale reliability. The AVE values are between 0.57 and 0.65 which is above the 0.50 mark which is a sign of sufficient convergent validity since it shows that over half of the variance in indicators is used by latent constructs.

Table 2
Discriminant Validity

Constructs	FL	RT	OC	EI	IDM
Financial Literacy (FL)	–				
Risk Tolerance (RT)	0.64	–			
Overconfidence (OC)	0.58	0.61	–		
Emotional Intelligence (EI)	0.46	0.52	0.55	–	
Investment Decision-Making (IDM)	0.67	0.70	0.62	0.59	–

The findings of the HTMT indicate that constructs of the model have sufficient discriminant validity because the correlation ratios are below the suggested value of 0.85. The values are 0.46 to 0.70, which means that though the constructs are correlated, they are not overlapping concepts. Indicatively, the highest correlations are found between investment decision-making and risk tolerance (0.70) and investment decision-making and financial literacy (0.67), which indicate that these variables have strong association in the determination of investor behavior. In the meantime, the less significant associations, including financial literacy and emotional intelligence (0.46) or risk tolerance and emotional intelligence (0.52) show that these constructs, in spite of their connection, thus reflect the various aspects of the investment decision-making process.

Table 3
Collinearity Assessment

Indicator/Construct	VIF
Financial Literacy	1.82
Risk Tolerance	1.95
Overconfidence	1.77
Emotional Intelligence	2.01

The variance inflation factors (VIF) of all constructs are within acceptable range and the scores are 1.77 to 2.01, that is much lower than usual cut-offs of 3.3, 5.0. It means that multicollinearity cannot be a problem with structural model because there are no predictors that are overly correlated and will skew regression estimates. The relatively low VIF values support fact that financial literacy, risk tolerance, overconfidence, and emotional intelligence are independent variables that can be used to explain variation in the investment decision-making without the redundancy.

Table 4
Model Fit Indices

Fit Index	Value	Recommended Threshold
SRMR	0.058	< 0.08 (good fit)
NFI	0.91	> 0.90 (acceptable)
RMS_theta	0.11	< 0.12 (acceptable)
Chi-square/df	2.31	< 3 (good fit)

All the model fit indices show that the proposed structural model has a good overall fit with the data. The value of SRMR is 0.058, which is relatively low and is well below the required value of 0.08, implying that differences between the observed and the predicted correlations are not high. Likewise, the NFI of 0.91 is higher than the benchmark of 0.90 indicating that there is an acceptable level of model fit as compared to the null model. The RMS value of theta 0.11 is less than the acceptable limit of 0.12 which once again proves that the residuals are within the acceptable limits. Finally, the chi-square/df ratio of 2.31 is significantly lower than the cut-off of 3 which is another indication of a well-fitting model. Collectively, these indices

support the conclusion that the model is sound and is an adequate measure of the relationships between the constructs, which justifies its use in testing the hypothesis and then in additional interpretation.

Table 5

Structural Model Results

Hypothesis	Path	β	t-value	p-value	Result
H1	Financial Literacy → IDM	0.28	4.21	<0.001	Supported
H2	Risk Tolerance → IDM	0.31	5.02	<0.001	Supported
H3	Overconfidence → IDM	0.19	2.87	0.004	Supported
H4a	Emotional Intelligence → IDM	0.24	3.76	<0.001	Supported

The findings of the structural model offer a high level of empirical evidence to all hypothesized direct connections, which proves that the financial literacy, risk tolerance, overconfidence, and emotional intelligence are important factors influencing investment decision-making. Financial literacy has a positive impact (B = 0.28, t = 4.21, p < 0.001), which means that higher financial knowledge, the more rational and informed investment decisions are made. Risk tolerance is the most significant predictor (B= 0.31, t = 5.02, p < 0.001), and this indicates that readiness to work with uncertainty and the possibility of loss play significant role in predicting investment behavior. Even relative weak overconfidence has strong positive influence (B= 0.19, t = 2.87, p = 0.004) which means that the overconfidence of investors, despite risks, can be used to make decisions. Finally, emotional intelligence demonstrates a prominent positive impact (B = 0.24, t = 3.76, p< 0.001) that depicts importance of emotional regulation in making rational investment decisions.

Table 6

Mediation Effects

Path	Indirect β	t-value	p-value	Mediation Type
Financial Literacy → EI → IDM	0.11	2.95	0.003	Partial mediation
Risk Tolerance → EI → IDM	0.08	2.42	0.016	Partial mediation
Overconfidence → EI → IDM	0.09	2.73	0.007	Partial mediation

The results of mediation process suggest that emotional intelligence significantly contributes to the process of refining the effects of financial literacy, risk tolerance and overconfidence on the decisions made in investment and all three indirect relationships are statistically significant. The emotional intelligence as an indirect indicator of financial literacy (B=0.11, t = 2.95, p = 0.003) proves that emotionally intelligent investors are more likely to transform their financial literacy rational decision-making by coping with stress and being less likely to act impulsively. The risk tolerance mediation (B=0.08, t = 2.42, p = 0.016) suggests that emotional intelligence helps investor to channel his/her risk-taking intentions into more balanced and controlled methods, which would reduce the chances of taking too many risks. But in the overconfidence (B=0.09, t = 2.73, p = 0.007) case, emotional intelligence is a control mechanism, which compensates bias of overvalued self-perception, offers more realistic and rational investment decisions.

DISCUSSION

The findings of the present study have a value addition to the growing body of literature upon the behavioral finance since they aid in the narrowing down on the interplay of the cognitive, psychological and emotional factors in making investment decisions. In this drive, hypothesis is supported by the findings that prove that financial literacy, risk tolerance, overconfidence, and emotional intelligence influence investment behavior both directly and indirectly with mediating effects (Sawitri & Candraningrat, 2025; Sharma, 2024; Yulianis & Sulistyowati, 2021). The confirmation of these hypotheses points out to the fact that the decision-making process of investors is not driven by the individual construct but rather by the complex interaction of the knowledge, risk tolerance, psychological biases and emotional control. This is consistent with the previous theoretical claims in behavioral finance and decision-making theories, which state that the investment decision cannot be completely accounted by the rational economic model, but human emotions and limited rationality are main factors of the consideration (Salsabila & Neliana, 2025).

CONCLUSION

This research therefore concludes that the decision-making process in investment is a multi -dimensional construct, shaped not only by rational calculations but also by dynamic interplay of cognitive, psychological, and emotional factors. These factors may operate independently or interactively, producing diverse patterns of the investor behavior. Among them, risk tolerance, overconfidence, as well as financial literacy emerge as particularly significant determinants of investment choices. However, their potential benefits or associated threats can be effectively regulated and moderated through the mediating role of emotional intelligence. By integrating emotional and cognitive dimensions, this perspective challenges the assumptions of the purely rational models, highlighting their limitations in capturing complexity of real-world financial behavior. Ultimately, the study contributes to a more holistic understanding of the investment decision-making, recognizing that the investors are not only rational economic agents but also individuals whose judgments are shaped by the psychological biases, emotions, and cognitive capacities.

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