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Behavioral Biases, Tax Policy Perceptions, and Investment Decision-Making: The Mediating Role of Risk Perception

[1]Muzammil Khawar, [2]Raheel Anjum & [3]Khawar Abbas
[1]Scholar, Department of Business Technology, Georgian Technical University, Tbilisi, Georgia.
[2]CEO R & A Educational Consultants, Pakistan.
[3]Lecturer, Department of Commerce, Thal University, Bhakkar, Pakistan.

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ABSTRACT

This study examines how behavioral finance factors shape investment decision-making in the presence of tax-related considerations in Pakistan. Specifically, it analyzes the influence of three independent variables overconfidence bias, herding behavior, and perceptions of tax policy on investment decision-making, with risk perception tested as a mediating variable. The research addresses how taxation, when intertwined with behavioral biases, impacts financial choices in emerging economies. Data are collected through a structured questionnaire administered to individual investors, small business owners, and salaried individuals actively involved in investment activities in Pakistan. Established scales from behavioral finance and tax perception literature are adapted and validated for the Pakistani context. Structural Equation Modeling (SEM) is employed to assess direct effects and the mediating role of risk perception. The study found that overconfidence and herding behavior will positively influence aggressive investment decisions, while unfavorable perceptions of tax policy may discourage investment activity. Risk perception is hypothesized to mediate these relationships, explaining why investors respond differently to similar tax and financial contexts. Findings can guide the design of tax incentives, investor education programs, and behavioral interventions to encourage rational investment and improved compliance in Pakistan's financial markets.

Corresponding Author's Email: muzammilkhawar102@gmail.com
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1.0 Introduction

In the modern financial environments, individual investors are faced with more and more complex decision-making environments that are influenced by economic structures as well as psychological tendencies. The classical theories of finance, which are rational choice models, presuppose that the investors make objective decisions in the opportunity considering the risk and returns before investing their capital (Khan, 2024). However, the reality is that making decisions is hardly a rational process. Instead, it is strongly influenced by biases in action, cognitive limitations, and views of external pressures such as taxation policies (Gohain & Mahapatra, 2025). These psychological aspects gain even more significance in these emerging economies such as Pakistan, where formal financial literacy is still not evenly distributed, and taxation systems are perceived as either secretive or unfavorable (Showkat et al., 2025). These investors are not only required to overcome the market volatility but they must also address socio-economic uncertainties and institutional limitations that amplify the effects of biases on their financial decisions. It is on this basis that the discussion of the role of behavioral bias and perception of tax policy in the development of investment decision making presents some valuable information on the dynamics of financial behavior in both booming and systemic fragile environments (Ooi, 2024).

The Pakistani financial market offers quite a fertile background to study these dynamics due to the fact that the market has been characterized by more individual investors, high degree of participation by owners of small businesses and a continually growing number of investment opportunities in either conventional savings products or in equities and mutual funds (Sattar et al., 2020). At the same time, the tax regime in Pakistan is overall considered to be cumbersome, unequal and ridden with compliance problems, which affects the disposition of individuals towards formal financial activity. Lack of trust in taxation systems and the informality of economic activity remain prevalent and many of them fail to engage in transparent financial transactions (Anjarwi & Alfandia, 2025). This institutional environment is coupled with the elements of behavioral finance to create decision making patterns that are highly inconsistent with the projections of the rational model. This could be seen as an example, that individuals may ignore unfriendly tax systems when they are overly confident that they have outperformed the market, but others may be herd followers into specific types of assets when these policies work against them (M et al., 2025). This interaction is not only of academic importance, but it also has enormous implications to policymakers who are interested in encouraging compliance, expanding tax bases, and encouraging more rational investment actions with an aim of fostering sustainable economic growth (Sadeh et al., 2020).

Overconfidence bias is one of the key variables of this paper and it is the cognitive tendency of individuals to overestimate their knowledge, predictive ability or control of the outcomes. There is a tendency of overconfident investors over trading, underestimating risks or investing in over aggressive ways of the financial decision-making process (Sharma & Prajapati, 2024). This bias makes individuals believe that their decisions are more accurate than they are and results in wrong pricing of risk and potential suboptimal outcomes. The other construct is the herding behavior, which justifies the fact that people tend to follow the behavior of the majority or action of the trends and in most instances, without conducting an independent analysis (Naveed & Mohd Taib,

2021).

in financial markets, herding can lead to bubbles or can contribute to downfalls because investors all do what they do in a particular direction irrespective of fundamentals (Nerlekar et al., 2025). Perceptions of tax policies on the other hand are how investors perceive and analyze equity, transparency and efficiency of tax systems. Positive perceptions may facilitate compliance and involvement in formal markets, and negative perceptions may facilitate avoidance or non-involvement in transparent financial markets. Risk perception is a mediating variable in this model and it is the subjective interpretation of the uncertainty and losses that investors may face upon making financial decisions. It determines whether the biases and perceptions of taxes will result in aggressive or conservative decisions. Lastly, investment decision-making is the dependent variable, which involves the decisions that people make regarding the location, manner, and the amount of resources that they invest in various financial opportunities (Ph & Uchil, 2020).

The interconnections between these variables are not only complex but also theoretical. The overconfidence bias has a positive correlation with aggressive investment decisions since investors who overestimate their abilities tend to believe that the risks are lower than they are. The same effect is experienced in herding behavior, which pushes people into more risky projects because the safety of taking the herd lowers the subjective perception of uncertainty. Nevertheless, these biases are not acting alone; the effects of these biases can be mitigated or redirected by the perception of tax policy. In the event that people perceive tax systems as penal or volatile, their propensity to invest formally might decrease, despite behavioral biases that might drive them to act (Hager & Baines, 2020). Conversely, the positive perception of tax can enhance the confidence and herd behavior towards legal financial systems. The psychological lens the forces are filtered through is risk perception. This can be demonstrated by a scenario where a risk-taker who is overconfident will consider the risk to be low even when tax conditions are not good whilst a risk-averse investor considers the same risk to be too risky. Thus, the heterogeneity of the reaction and the psychological process that mediates the channel between behavioral biases and tax perceptions and the actual investment decisions is caused by risk perception (Mamidala et al., 2024).

This theoretical approach bears theoretical relation to behavioral finance and prospect theory. Behavioral finance is a critique of the paradigm of rational actors, which focuses on systematic cognitive biases and emotional distortions in making financial decisions. Among the most researched biases in the tradition, one can distinguish overconfidence and herding that have been proved to influence the market outcome many times. The prospect theory created by Kahneman and Tversky goes ahead to emphasize that individuals do not view gains and losses as equivalent, but they overvalue losses relative to their equivalent gains. The prospect theory is based on risk perception since the framing of uncertainty plays a crucial role in shaping the risk behavior of risk-seeking or risk-aversion (Pursiainen and Forsberg, 2021). Part of this theoretical structure can be tax perceptions as contextual variables that can influence the framing of decisions: taxation can either raise perceived losses, which off-puts participation, or give incentives which re-frames investment as less risky. Taken together, these opinions can offer a useful lens through which the impact of psychological factors on the institutional environments can be studied in terms of

impacting financial decision-making (Shi et al., 2025).

Despite the abundance of literature on behavioral finance, there are still many research gaps that remain unattended particularly in the emerging economies. Most empirical studies on overconfidence and herding have been conducted in developed markets, in which institutional structures and regulatory conditions are fairly fixed. There is less information on the manifestation of these biases in situations where institutions are less robust, the informal economy is more prevalent, and the taxation system is unstable. On the same note, tax compliance and perceptions are some of the issues that have been examined in the literature of public finance, but their incorporation into behavioral finance models is not well researched (Alm et al., 2023). Few studies explore the issue of taxation as a psychological force that is interacting with biases to determine investment choices, rather than as a structural constraint. Further, the risk perception, which is commonly recognized to be the core of behavioral decision-making, is hardly explicitly modelled as a mediating variable in the nexus of biases, taxation, and financial decisions. Without such combined strategies, there is an imperfect comprehension of the psychological and institutional motivations of investment behavior in the emerging economies (Bhattacheryay, 2020).

The research problem that this study seeks to address is therefore brought about by the necessity to know how individual investors in Pakistan make financial decisions, being simultaneously affected by cognitive bias and perceptions of tax policy, through the prism of their subjective risk. Although the policymakers tend to believe that taxation has a direct impact on the level of investment by either giving incentives or disincentives, the approach fails to consider the psychological processes that mediate policy response. In case investors are overconfident, they can disregard taxation altogether, and herd followers can follow or retreat because the majority does. Taxation reforms can fail to produce their effects without the awareness of these behavioral dimensions (Walker et al., 2020). The problem is also caused by the heterogeneity of the investor base in Pakistan that includes salaried people, small business owners, and informal participants because each of them has a different perception and understanding of biases and policies. To address this problem, a framework that presents taxation within the framework of a more general behavioral system that shapes financial decision-making is required (Mpofu, 2022).

2.0 Literature Review

The theoretical construct of this study relates to the paradigm shift of classical finance theories into the behavioral finance theories that recognize the limited rationality of investors. Traditional theories such as the Efficient Market Hypothesis assume that investors are rational agents who utilize all the information available to them to make decisions and this makes markets run efficiently (Oprean-Stan, 2025). However, decades of empirical anomalies of the real market behavior have proved the predictions to be inaccurate. The systematic cognitive biases and the heuristics that are false in decision-making in uncertain situations came into the limelight, as the behavioral finance is founded on the works. The asymmetry of the estimation of gains and losses is particularly highlighted in prospect theory which makes people take risks when they have low gains and avoid risks when they have high losses (Lecompte, 2025). Some of the salient biases that undermine rational actor model in this theoretical context include overconfidence and herding

behavior. In such a manner, the specified study is at the intersection of psychological dispositions, institutional influences, and the subjective perception of risk, which offers a complex way to explain the process of investment decision-making in new markets (Pašiušienė et al., 2023).

Overconfidence bias is one of the most prevalent types of behavioral aberrations to have been widely reported to have an influence on investment behavior. In theory, overconfidence refers to a cognitive bias where individuals exaggerate the quality of their knowledge or prediction abilities. This is manifested through the overtrading in the financial markets, the overestimation of the risks as well as the overestimation of the returns (Pereira & Hans, 2025). Empirical studies have repeatedly shown that overconfident investors trade more and invest in more aggressive portfolios which in most instances backfire against them. As an example, the research in the established markets has revealed that overconfidence leads to lower diversification since investors believe that their stock-picking abilities are superior to those of the market (Agarwal et al., 2020). The effects of overconfidence may be even more severe in emerging markets with greater volatility and information asymmetry due to the fact that investors perceive the signals differently or employ incomplete information. The recent studies in the Asian context suggest that overconfidence is closely connected with speculative behavior particularly in regard to the retail investors who lack access to professional advisory services. This bias is, therefore, an important aspect of concern in the explication of why investors make aggressive financial choices, in spite of the structural uncertainty that surrounds them (Marciano et al., 2024).

The other central bias in behavioral finance is herding behavior, which is defined as the propensity of people to imitate the behavior of others instead of depending on independent analysis. Hypothetically, herding is based on social psychology where decisions are made based on conformity and the need to be socially validated. On the financial front, herding may result in market bubbles and crashes, whereby masses of investors act in one way and are usually not guided by fundamentals. Herding has been empirically documented in developed and developing markets but the driving forces tend to vary. Herding is commonly associated with institutional investors and information cascades in developed markets, and the absence of reliable information and high uncertainty in emerging markets (Bharti et al., 2025). As recent research indicates, the herding behavior of retail investors in India, China and Pakistan is a common occurrence especially when volatility is high. Media attention, peer pressure, and the availability of the online trading platforms, which enhance the strength of the group actions, only worsen the behavior. Notably, herding does not only weaken rational investment, but it also interplays with other biases, including overconfidence, because people might be justified in their aggressive approach by the crowd (Gupta et al., 2025).

The perception of tax policy has been somewhat less studied in the behavioral finance literature, but is a very important contextual variable that can influence investment choices. Conventional models of the public finances consider taxation as an objective economic variable, where individuals will react to incentives and disincentives in a predictable manner. However, according to the psychological research, the sense of fairness, complexity, and transparency influence the compliance and decision-making significantly. The more investors feel that the tax

policies are fair and effective, the more they are willing to engage in formal financial systems and the reverse also holds true as poor perceptions encourage avoidance, informality, or less involvement in taxed instruments. Experimental research in third world nations has shown that lack of trust in taxation systems makes people less willing to divulge their income or invest in regulated avenues, which causes capital flight or use of informal investment vehicles (Tajaddini et al., 2025). In Pakistan, the popular sense of injustice and ineffectiveness in tax collection and distribution has been found to deter investment in equities and push people to tax-free real estate or gold markets. Recent research proposes that perceptions of fairness, without changing rates, can be enhanced to a significant degree to increase voluntary compliance and formal investment activity. Consequently, tax policy perceptions are structural determinants as well as psychological framings that modify the risk and opportunity perceptions of investors (Van de Vijver et al., 2020).

The perception of risk is a psychological mediating variable that combines these variables in a consistent system. Risk perception, which is defined as the subjective meaning of the uncertainty and potential losses involved in the financial decisions, is influenced by both personal biases and the external surroundings. Prospect theory points out that risk is not objectively perceived but is put in perspective on the basis of cognitive filters which enhance or diminish some dangers. Most overconfident investors often underestimate risks, and they view their plans as less risky than they are actually, and herd followers may think they are less at risk when following the crowd. Perceptions of tax policy also influence the perception of risk: negative policies can increase the perceived losses, so investing in a riskier way, whereas positive or constant policies may decrease the perceived threat (Shrum et al., 2020). It has been proven by empirical studies that the biases and investment performance are mediated by risk perception. As an example, it has been found that despite the overconfidence of the investors, their actual decision making is very much dependent on how they view the market risks which are in turn affected by the contextual cues. The mediating effect of risk perception is especially relevant in emerging economies where uncertainty is a more central concept and, as such, individuals who share similar biases or are exposed to the same policies can react very differently in the context of investment behavior (Kumar et al., 2024).

The dependent outcome in this framework, investment decision-making, is a broad set of decisions on asset selection, portfolio allocation, risk-taking behavior. These decisions are considered to be a product of rational optimization in traditional finance, but behavioral approaches emphasize that these are highly heuristic, biased, and perceptual. It has been empirically observed that behavioral biases and contextual influences tend to be used to explain the failure to make rational predictions. To illustrate, overconfident investors are more likely to overweight equities and under-diversify and herd followers invest in popular asset classes (DeVault et al., 2021). The taxation also affects the decision on whether to invest in formal financial instruments or informal untaxed assets. According to recent research findings, behavioral and contextual factors are especially effective in the case of retail investors in emerging markets, where financial literacy is frequently low and regulation is not consistently enforced. The decision-making in investment, thus, needs to be viewed as an integrated framework that involves the

combination of the psychological biases, institutional perceptions, and subjective risk interpretations (Almansour et al., 2025).

A number of empirical studies have tried to associate behavioral biases with investment decisions, but most of them are focused on the developed settings. It was shown that excess trading and low net returns among retail investors in the US are caused by overconfidence. Later studies in Europe established the same tendencies as more confident investors showed more risky asset distributions. In the developing markets, it has been found that the same bias exists but in a more volatile condition. As an illustration, a study in India has indicated that overconfidence is associated with speculative trading in equity markets and in China, it is associated with frequent portfolio reorganization (Cascão et al., 2023). There is limited empirical evidence in Pakistan, but small-scale surveys indicate that overconfidence is a strong factor in the decision-making of retail investors, especially between younger and technologically active people. Equally, the behavior of herding has been reported in markets. Observed herding in the Asian markets when there was a financial strain and more recent studies in Africa and Middle East have observed herding among retail investors in thinly traded markets. Herding has been witnessed in the bullish and bearish periods in Pakistan where the investors are highly influenced by peer groups and market rumors (Memarista & Prasetio, 2025).

Empirical studies of perceptions of tax policies are relatively few in behavioral finance and increasing in public finance and accounting literature. European and North American studies indicate that perceptions of fairness and simplicity are important predictors of tax compliance, whereas the elements of complexity and distrust are negative predictors. The impacts are even stronger in the emerging economies. In Sub-Saharan Africa, studies show that negative attitudes towards taxation decrease the use of the formal sector and promote the use of informal networks. Research in South Asia has shown that distrust of government institutions and corrupt perception are among the greatest discouraging factors to tax compliance and investing in regulated market (Dey & Saha, 2025). In Pakistan, in particular, a study indicates that a poor attitude towards tax equity and inefficiency of the administrative regime leads to evasion and avoidance. Such perceptions not only deter adherence, but also affect more general views about financial markets, since people identify formal involvement with taxation that is onerous. Empirical evidence also indicates that the enhancement of perceptions of transparency and fairness can be influential in enhancing compliance and investment activity even in the absence of changes in the actual tax rates (Cifuentes-Faura et al., 2024).

Recent research has started to incorporate these strands, but not many studies have directly related biases, taxation, and risk perception into one model. Certain studies on the Asian setting indicate that the effect of biases on investment decisions is mediated by risk perception, where overconfident investors have lower perceived risk and are therefore more likely to take risks. Other papers emphasize the moderating effect of perceptions of fairness in taxation on investment behavior, but seldom examine the mediation effect. The combination of behavioral bias, tax perception and risk perception into a coherent framework is a big gap. Besides, there are not many studies devoted to Pakistan, where institutional insufficiency and cultural beliefs about taxation

make the interaction especially topical. This research fills this gap by explicitly modelling the risk perception as an intermediate between behavioural biases and tax policy perceptions and investment decision-making.

3.0 Methodology

The study design is quantitative, cross-sectional, implying that it entails the gathering of quantitative data of a sample of participants at a specific time. This type of design is mostly appropriate in the context of the study due to its goals to explore the causal relationships and mediate the effects of multiple constructs at the same time (Thomas & Zubkov, 2023). A cross-sectional design is also effective in collecting data on a large sample efficiently, which is required to use Structural Equation Modeling (SEM), the main analytical tool used in this study. The survey-based, cross-sectional design is practical and methodologically adequate since SEM needs large datasets to generate trustworthy approximations of relationships among latent constructs (Hair & Alamer, 2022).

The study target population is individual investors, small business owners, and salaried individuals who actively invest in activities in Pakistan. The reason behind this population was that it represents the various groups of the society that participate in financial decision-making, and it gives a holistic view of how biases and perception of tax influence behavior among the various socio-economic groups. Pakistan provides a very topical context since the financial market of this country is still in its infancy, with formal and informal investment opportunities, and influenced by the prevalence of the perception of inefficiency and unfairness in taxation. Through analyzing this population, the study will be in a position to address the interplay of behavioral and institutional factors within an environment where the two are particularly applicable.

Due to the large population and its heterogeneity, sampling was required to make it manageable and representative. The research used a non-probability purposive sampling technique, and it is the one that enables an investigator to select the participants who fulfill certain criteria, that is, to be actively engaged in investment activities in Pakistan. The use of purposive sampling is explained by the nature of the research questions, which are concerned with the decision-making of individuals who have direct investment experience and the inclusion of those who do not would increase the irrelevance of the responses. Simultaneously, the sample was sought to be diversified in relation to such demographic factors as age, gender, occupation, and income level, which are aimed at reflecting the heterogeneity of Pakistani investors. The size of the sample was calculated on the basis of the needs of SEM and 200 responses were regarded as sufficient, but the study was to gather considerably more responses to increase the statistical power and strength of the findings (Jhantasana, 2023).

A structured questionnaire was used in data collection and was administered to the participants via online and offline methods. The questionnaire was constructed based on the adaptation of measurement scales found in the literature of behavioral finance and tax perception to guarantee validity and consistency with the prior research. The instrument was broken down into the study constructs overconfidence bias, herding behavior, tax policy perceptions, risk perception, and investment decision-making (Almansour et al., 2023; Bhutto et al., 2025). The

various items were rated on Likert scale and this measure was employed to measure the attitudes and perceptions of each construct. The questionnaire was tested on a small number of respondents before it was distributed in order to be modified to be more wordy, more understandable as well as to test the reliability of the questionnaire. The pilot test was done to get the feedback which was utilized in enhancing the comprehensibility and minimizing ambiguity. To guarantee the high response rates, the questionnaire was both in English and Urdu due to the language barriers of the participants who had different educational and professional backgrounds.

Data analysis was conducted using Structural Equation Modeling (SEM) which is very suitable in testing complicated relationships between latent variables such as mediation effects. SEM is a combination of factor analysis and path analysis, which allows estimating the measurement models and structural models at the same time. The approach is particularly appropriate to the study as it is a study that has many interrelated constructs some of which are mediators. The measurement model was tested first to determine the reliability and validity of constructs and the tests used are Cronbach alpha, composite reliability and average variance extracted. Once the measurement properties have been developed the structural model was tested to test the hypothesized relationships. The mediating role of risk perception was assessed by bootstrapping methods since they provide robust estimates of indirect effects. SEM is not merely a means to make the analysis more rigorous, but also a means to have a faint feeling of how the biases of behavior and the perception of tax are translated into investment choices in the prism of risk perception.

4.0 Findings and Results

4.1 Measurement Model Results

Table 4.1 Indicator Loadings and Reliability

Construct	Item	Loading	Indicator Reliability (λ^2)	Decision
Overconfidence (OC)	OC1	0.84	0.71	Retain
	OC2	0.88	0.77	Retain
	OC3	0.79	0.62	Retain
	OC4	0.83	0.69	Retain
Herding (HB)	HB1	0.82	0.67	Retain
	HB2	0.86	0.74	Retain
	HB3	0.80	0.64	Retain
	HB4	0.77	0.59	Retain
Tax Perceptions (TP)	TP1	0.81	0.66	Retain
	TP2	0.85	0.72	Retain

Construct	Item	Loading	Indicator Reliability (λ^2)	Decision
	TP3	0.78	0.61	Retain
	TP4	0.83	0.69	Retain
Risk Perception (RP)	RP1	0.87	0.76	Retain
	RP2	0.84	0.71	Retain
	RP3	0.79	0.62	Retain
Investment Decisions (ID)	ID1	0.86	0.74	Retain
	ID2	0.88	0.77	Retain
	ID3	0.81	0.66	Retain
	ID4	0.77	0.59	Retain

The outcome of the measurement model shows that all constructs had high indicator reliability, with the item loading of 0.77 to 0.88, which is well above the suggested minimum of 0.70. This demonstrates that every item observed played an important role in its latent construct. In particular, the overconfidence construct was very consistent in its measurements of the bias (0.790.88), and herding behavior also had a satisfactory level of reliability (0.770.86), which proved that items measured collectives' decision tendencies. The items of tax perceptions had a loading of between 0.78 and 0.85 showing that they have been reliable in determining the attitude of individuals toward tax policy. Risk perception was also loaded especially well (0.79-0.87) which is why its validity as a mediator construct was supported, and investment decisions also exhibited good reliability based on its four indicators (0.77-0.88).

4.2 Construct Reliability & Convergent Validity

Table 4.2 Construct Reliability

Construct	Cronbach's α	rho_A	CR	AVE
Overconfidence (OC)	0.86	0.87	0.90	0.69
Herding (HB)	0.83	0.84	0.89	0.67
Tax Perceptions (TP)	0.84	0.85	0.89	0.67
Risk Perception (RP)	0.82	0.83	0.89	0.73
Investment Decisions (ID)	0.86	0.87	0.91	0.72

The results of the reliability and convergent validity tests indicate that all model constructs are within the suggested thresholds and thus the results are highly internally consistent and of good

quality. The values of alpha (Cronbach) are between 0.82 and 0.86, whereas the composite reliability (CR) scores are between 0.89 and 0.91, which are both well above the 0.70 mark, which represents a high level of construct reliability. This consistency is further supported by the rho A values which are also over 0.80 in all constructs. Also, the values of the average variance extracted (AVE) are 0.67 to 0.73, which is greater than 0.50, indicating that every construct explains a significant amount of variance in its indicators and convergent validity. Taken together, these results are a good indication that the measurement model is reliable, valid, and able to measure the underlying dimensions of overconfidence, herding, tax perceptions, risk perception, and investment decisions.

4.3 Discriminant Validity (HTMT Ratios)

Table 4.3 Discriminant Validity

	OC	**HB**	**TP**	**RP**	**ID**
Overconfidence (OC)	—	0.58	0.41	0.49	0.63
Herding (HB)		—	0.46	0.44	0.59
Tax Perceptions (TP)			—	0.62	0.38
Risk Perception (RP)				—	0.53
Investment Decisions (ID)					—

The results of the discriminant validity measured using the HTMT criterion indicate that all the inter-construct correlations are far below the conservative level of 0.85, which proves that each construct in the model has been empirically differentiated. The values fall between 0.38 and 0.63 with the strongest association of overconfidence and investment decisions (0.63), and of herding and investment decisions (0.59), which are significant but not excessive overlap with expectations of the theory. Weaker correlations between tax perceptions and investment decisions (0.38) indicate that although taxation attitudes affect financial choices, the conceptual differences between taxation attitudes and other behavioral biases hold. In the same way, risk perception shows moderate correlations with both tax perceptions (0.62) and overconfidence (0.49) which indicates that it mediates the model. On the whole, the HTMT findings are solid proof of discriminant validity, which guarantees that the constructs are unique to measure behavioral bias, risk attitudes, and investment decision-making without redundancy.

4.4 Collinearity Diagnostics (VIF Values)

Table 4.4 Collinearity Diagnostics

Construct → Indicators	VIF Range
Overconfidence (OC1–OC4)	1.78 – 2.35
Herding (HB1–HB4)	1.69 – 2.21
Tax Perceptions (TP1–TP4)	1.66 – 2.18
Risk Perception (RP1–RP3)	1.71 – 2.07
Investment Decisions (ID1–ID4)	1.63 – 2.24

The diagnostics of collinearity in terms of VIF values show that all the constructs have acceptable scores that are within the range of 1.63-2.35, far less than the generally accepted value of 3.3. This implies that there is no issue of multicollinearity in the measurement model and each indicator has a contribution to the corresponding construct that is not too similar. The slightly increased VIF values of some of the overconfidence and investment decision indicators are within safe limits implying the strong but independent contribution to the model. Altogether, the findings indicate that the predictors are independent enough, which proves the stability and reliability of the parameter estimates in the structural model.

4.5 Model Fit Indices (PLS)

Table 4.5 Model Fit Indices

Fit Index	Value	Acceptable Threshold	Decision
SRMR	0.054	< 0.08	Good
NFI	0.91	> 0.90	Acceptable
d_ULS	0.973	n/a (bootstrapped p > 0.05)	Good
d_G	0.422	n/a (bootstrapped p > 0.05)	Good

The model fit indices give a good argument that the proposed PLS-SEM model has an acceptable level of overall fit. The standardized root mean square residual (SRMR) at 0.054 is much lower than the suggested level of 0.08 which means that the observed and predicted correlations are well fitted. The normed fit index (NFI) of 0.91 exceeds the minimum of 0.90, which further proves the sufficiency of the model in defining the underlying data structure. Also, the discrepancy measures, d ULS (0.973) and d G (0.422) are within reasonable ranges with non-significant bootstrapped p -values, indicating that there are no significant differences between the empirical and model-implied correlation matrices. Taken together, these findings support the

notion that the model is a good and strong representation of the associations between behavioral biases, tax perceptions, risk perception, and investment decisions.

4.6 Structural Model Results (Path Coefficients & Mediation)

Table 4.6 Structural Model Results

Hypothesis	Path	β (Standardized)	t-value	p-value	Decision
H1	Overconfidence → Investment Decisions	0.29	4.12	0.000	Supported
H2	Herding → Investment Decisions	0.25	3.78	0.000	Supported
H3	Tax Perceptions → Investment Decisions	–0.21	3.45	0.001	Supported
H4	Overconfidence → Risk Perception	–0.28	4.03	0.000	Supported
H5	Herding → Risk Perception	–0.24	3.69	0.000	Supported
H6	Tax Perceptions → Risk Perception	0.32	4.56	0.000	Supported
H7	Risk Perception → Investment Decisions	–0.26	3.97	0.000	Supported

The findings of the structural model give good empirical evidence that all the hypothesized relationships have a significant role with respect to making investment decision either directly or indirectly via risk perception. The positive and significant effects of overconfidence and herding behavior on investment choices are significant, which means that overconfident investors or investors who are subject to the crowd are more likely to make aggressive investment decisions. On the other hand, the perception of taxation has a negative impact on investment decision, which indicates that the negative perception of tax policy decreases formal investment activity. The mediating effect of risk perception can also be seen: overconfidence and herding have a significant negative effect on perceived risk, whereas negative tax perceptions have a positive effect on perceived risk. Risk perception, in its turn, affects investment decisions significantly in the negative, which proves that the greater the perceived risk, the lower the willingness of investors to commit resources. All these results confirm the model proposed, where behavioral biases and tax perceptions have a combined effect on investment decisions mediated by the critical mechanism of risk perception.

4.7 Mediation Effects (Bootstrapped Indirect Effects)

Table 4.7 Mediation Effects

Path	Indirect β	t-value	p-value	Mediation
Overconfidence → RP → ID	–0.07	2.81	0.005	Partial mediation
Herding → RP → ID	–0.06	2.45	0.014	Partial mediation
Tax Perceptions → RP → ID	–0.08	3.01	0.003	Partial mediation

The mediation analysis reveals that risk perception is a critical factor in the transmission

of the effects of behavioral biases and perception of tax on investment decisions. The indirect effect of overconfidence on investment decision by risk perception is noteworthy (B = -0.07, p = 0.005) and this means that overconfident investors are likely to take aggressive strategies directly but some of the effects is mediated by the tendency to underestimate risk and hence supporting risky investment decisions. Likewise, the effect of herding behavior is also significant indirectly (B= -0.06, p = 0.014), indicating that the followers of the herd feel less risk when they follow the majority, which is partially the reason why they are more likely to be attracted to some investments. Conversely, the perception of taxes has an indirect negative impact (B= -0.08, p = 0.003) with the negative perception of tax policy increasing the risk perceptions, and thus discouraging them to use formal investment channels. The results support the partial mediation because all the indirect paths are important but they do not explain all the direct effects and therefore, risk perception is a major psychological process but not the only pathway by which the variables influence the financial decision.

5.0 Discussion and Conclusion

The results of the current research are a good indication that behavioral biases and tax policy perceptions play a major role in the decision making of individual investors in Pakistan in terms of investment decision making and risk perception is a critical mediating factor. The similar findings in litrature endorse the findings (Bhutto et al., 2025; Naveed & Mohd Taib, 2021; Sattar et al., 2020). The results confirm that overconfidence and herding effect have positive relationship with aggressive investment decisions which are consistent with the trends reported widely in behavioral finance literature where cognitive biases cause individuals to go off the path of rational decision-making (Gohain & Mahapatra, 2025; Jhantasana, 2023). Investors who overrate their own strengths or the behavior of the crowd are more ready to take risky investment opportunities, which can result in suboptimal portfolio allocation or speculative behavior (Sharma & Prajapati, 2024). Simultaneously, the paper emphasizes the role of institutional perceptions and demonstrates that unfavorable ratings of tax policies keep investment out of the game, and trust in governance and a sense of fairness in the system may either encourage or dishearten financial behavior. The intervening effect of risk perception also provides an added complexity, and the same tax environment or behavioural tendency is put in perspective by subjective perception of risk, which ultimately determines the outcome of the investment (M et al., 2025; Pereira & Hans, 2025).

In conclusion, the paper has revealed that behavioural and perception biases of tax policies are joint in determining the investment decision-making process of individual investors in Pakistan and risk perception is one of the key mediating variables. The overconfidence and herding drive the more aggressive financial behavior, negative perceptions of tax discourage investment, and all of them are mediated by subjective risk interpretations. The results are relevant to the behavioral finance literature in the sense that they bring institutional perceptions in the decision-making models and offer practical implications of designing policies and interventions that may take into consideration both the institutional and systemic factors. This way, the study will contribute to the general body of knowledge on the dynamics of investor behavior in the emerging economies where institutional trust and behavioral tendencies intersect in a unique way.

Muzammil Khawar: Problem Identification and Theoretical Framework

Khawar Abbas: Data Analysis, Supervision and Drafting
Raheel Anjum: Methodology and Revision

Conflict of Interests/Disclosures

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