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DYNAMICS OF DECISION-MAKING: FINANCIAL & HERDING BEHAVIOR EFFECTS ON RETAIL INVESTORS' INVESTMENT CHOICES: THE MODERATED MEDIATION APPROACH

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ABSTRACT

The aim of this study is to investigate the intricate relationship between financial behavior, financial literacy, herding behavior, risk perception, and investment decision-making in specific environment of Pakistan Stock Exchange. To achieve the intended objective, study approach using cross-sectional design was used. A sample of 250 participants was selected in conventional financial institutions situated in Lahore. The data collecting procedure included the implementation of structured survey that used a five-point Likert scale. Data analysis used PLS-SEM. The results of study revealed statistically significant relationship between financial behaviors and both financial literacy and investment decision-making along with other desired relations. The results of mediation research suggest that there is a mediating effect of financial literacy on associations between financial behavior, herding behavior & investment decision-making. Research has shown moderating effects that indicate presence of external variables that influence association amid financial behavior & decision-making process in investing activities.

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INTRODUCTION

Financial markets play a pivotal role in the contemporary global economy by providing a platform for the investors to efficiently deploy their wealth (Gustiarum & Kusumawardhani, 2023). Within a dynamic and ever-changing economic environment, investors encounter choices that possess the potential to significantly influence not just their own financial well-being but also wider financial system (Saputri, Indrawati & Juwita, 2023). The investment choices are impacted by a complex and interrelated set of variables, including the risk perception, financial literacy, herding behavior, and financial behavior (Pratidina & Anggraini, 2023). The primary objective of research is to provide a comprehensive understanding of complex decision-making mechanisms used by investors via an analysis of numerous interconnections among these elements. The aim is to offer policymakers and individual investors with important and insightful information. The investor behavior in dynamic financial market's environment is shaped by variety of variables. Examination of financial behavior, including range of activities including investment, saving & expenditure, assumes pivotal position in fostering economic progress and attaining personal financial well-being (Halim & Pamungkas, 2023). Alternatively, herding behavior may be seen as expression of investors' tendency to mimic behaviors of their counterparts, which often results in formation of speculative bubbles and market trends (Dinarjito, 2023).

Gaining an inclusive understanding of the complexities linked with financial markets, including inherent dangers and possibilities they provide, is necessary in order to make intelligent investing choices (Almansour, Elkrghli & Almansour, 2023). The factors being examined in this research are classified into following categories: This research explores the association amid dependent variable, "investment decisions," and two independent variables, "herding behavior" and "financial behavior." The present research takes into account the mediating factor of "financial literacy" and moderating factor of "risk perception." The notion of financial behavior involves broad spectrum of decisions that people make about their investment plans, spending patterns, and savings habits (Hildebrandus, Hady & Nalurita, 2023). Herding behavior pertains to the tendency of investors to conform to the activities of the majority, sometimes motivated by fear of losing out on possible profits or the impact of the social pressures (Gustiarum & Kusumawardhani, 2023). The selection of investment options, which involves the distribution of monetary assets by investors, has a substantial impact upon their enduring financial well-being (Ranaweera & Kawshala, 2022). The motivation for conducting this research stemmed from the need to get a thorough understanding of the complex dynamics of the financial behavior, herding tendencies, financial knowledge, and risk assessment in the context of the investment choices.

The increased complexity and volatility of financial markets need a thorough analysis of the many elements that influence investor decision-making. Purpose of study is to analyze characteristics in order to provide investors thorough understanding of decision-making process. This will empower them to improve their decision-making skills & positively traverse complex financial environment. The primary aim of this research is to fill the existing knowledge gap about the many determinants that effect investing choices. The intricate relations among financial behavior, herding behavior, financial literacy, risk perception in context of investment choices remain insufficiently understood, despite the considerable volume of research on financial markets and investor behavior (Pratidina & Anggraini, 2023). The objective of our study is to fill current knowledge vacuum by exploring complex interaction of these factors and how they influence people' decisions about investments. It refers to need of obtaining a thorough comprehension of the many aspects that impact investment choices in a nation defined by varied and constantly evolving financial environment. In modern times, Pakistan's financial markets have seen notable changes and encountered many obstacles, marked by the incorporation of the global economy, modifications in policies, and volatility in the economic circumstances.

Consequently, it is essential to analyze and evaluate complex interrelationships between financial behavior, herding behavior, financial literacy, and risk perception within the unique context of the Pakistani investors and their investment preferences. This research has relevance in several aspects. The information supplied offers significant insights into the many factors that influence investing decisions. The purpose of this initiative is to assist individual investors in improving their ability to make the informed decisions and reduce possible risks in the market. Moreover, this research study makes a valuable contribution to the contemporary corpus of scholarly literature by deepening our understanding of investor behavior, financial literacy, and the phenomenon of herding behavior. In conclusion, it is important for policymakers to recognize the results of this study, as they have the potential to provide useful insights into the underlying processes. Subsequently, this heightened understanding may be used to shape the formulation of more logical policies and practices within the financial sector, with the objective of promoting both stability in the financial realm and the general welfare of individuals. Thus, the main aim of this study is to provide both theoretical and practical insights into the intricate dynamics of the financial markets and the process of making investment decisions.

LITERATURE REVIEW

Financial behavior encompasses wide range of attitudes and actions pertaining to financial affairs, including the process of making the investment decisions. Numerous studies have been conducted to examine the impact of various financial practices on investment decision-making (Almansour, Elkrghli & Almansour, 2023). For instance, research done by Ahmed, Rasool, Saleem, Khan and Kanwal (2022) revealed that individual investors often engage in trading activities and exhibit overconfidence, resulting in suboptimal investment outcomes. Additional investigation into topic of cognitive biases in the context of financial decision-making has yielded valuable understanding on the manners in which psychological factors influence investment behavior. The understanding of market dynamics and investment choices has been significantly influenced by concept of herding behavior, when individuals make judgments by emulating the actions of their peers (Suresh, 2021). The phenomenon of herding is often seen in financial markets and has been shown to impact the valuation of assets. To get insights into effects of social effect and information cascades on market dynamics, it is crucial to examine the influence of herding behavior upon the individual investment decisions (Suresh, 2021).

A key factor in modulating the link between financial behavior and investment choices is financial literacy, which is capacity to understand and apply financial information. Research has examined how people with greater levels of the financial literacy may make more logical and well-informed investing decisions (Pratidina & Anggraini, 2023). Dinarjito (2023) provided evidence of positive correlation between retirement planning & financial literacy, implying that well-informed people are more capable of navigating difficult financial issues. Also, a growing field of study examines how financial literacy influences the link between investing choices and financial behavior. The researchers may aid in the creation of focused treatments geared at boosting financial literacy and, therefore, improving investment outcomes by comprehending how the financial literacy reduces or increases the influence of financial behavior on investment decisions (Subash & Kaushala, 2021). Similar to this, there is increasing interest in interaction between herding behavior and financial behavior in determining investment choices (Wijaya, Sembel & Malau, 2023). The link between financial behavior and investment decisions is being studied, with a focus on the mediating effect of herding behavior.

A more complex knowledge of the processes behind both individual and group decision-making may be obtained by examining whether herding behavior increases or decreases the influence of financial behavior on investment choices (Tabassum, Soomro, Ahmed, Alwi & Siddiqui, 2021). A crucial component of the complex network of variables affecting investment choices is introduced by the moderating influence of risk tolerance. Risk tolerance is a dynamic filter through which financial and herding behaviors materialize in the decision-making process. It is often considered to be a fundamental component of an investor's psychological makeup (Halim & Pamungkas, 2023). There is a wide range of risk tolerance among investors; some welcome high-risk ventures in search of higher potential returns, while others choose more cautious approaches to protect their money. This variation in risk tolerance suggests that people are likely to react differently, depending on their individual risk appetites and aversions, to comparable financial and herding signals (Halim & Pamungkas, 2023). The phenomenon of herding is often seen in financial markets and has been shown to impact the valuation of assets. For example, a high-risk investor can see volatile markets as a chance to profit from the future price increases, seeing volatility as a necessary part of chasing the bigger profits.

On other hand, an investor with low risk tolerance may find the same market swings disconcerting, which might lead to a cautious and risk-averse strategy and even the preference for low-volatility, stable assets (Harahap, Thoyib, Sumiati & Djazuli, 2022). Thus, customizing investing strategies to individual preferences requires understanding of interactions between risk tolerance and financial behavior and herding behavior. Given the inherent variability in risk attitudes across investors, this tailored approach recognizes that a one-size-fits-all investment suggestion may not be suitable. With this information, financial advisers and legislators may create sophisticated and successful plans that suit risk tolerances of intended audience (Harahap et al., 2022). Besides, risk tolerance has moderating impact in larger market dynamics and individual decision-making. The aggregate risk aversion of investors might influence market patterns during periods of economic turbulence or noteworthy development. times of market exuberance may be attributed to the high risk tolerance, while times of bigger risk aversion and market conservatism may be caused by low risk tolerance (Ahmed, Noreen, Ramakrishnan & Abdullah., 2021). Macroeconomic valuations and formation of policy are informed by research on moderating effect of risk tolerance which helps with individual financial planning.

Financial professionals may create solutions that meet the demands of certain investor groups and promote a more robust and adaptable financial ecosystem by identifying varied reactions resulting from differing risk tolerances (Purwidianti, Rahmawati & Dwiyanti, 2023). The research review concludes by pointing to intricate interrelationship that influences investing choices between risk tolerance, financial literacy, herding behavior, and financial behavior. An increasing body of the research is needed to combine these characteristics into a complete framework, even though many studies have examined each of these aspects separately (Shafique, Sohail, Nisar & Munir, 2023). In this connection, the notion of financial behavior involves broad spectrum of decisions that people make about their investment plans, spending patterns, and savings habits. To prove causality and enhance our understanding of the complex linkages in field of investment decision-making, future research endeavors must to take into account longitudinal and experimental designs. In this linking, the individual investment strategies and more comprehensive policy efforts aiming at enhancing financial decision-making at the diverse societal level may both benefit from the insights gained from such research.

RESEARCH METHODOLOGY

The research approach used in this study was cross-sectional that facilitated the collection of data at a specific time point and offered valuable insights into examined interconnections. The research methodology used in this study was grounded on positivist paradigm, which emphasizes objective measurement of variables and identification of causal relationships. The aforementioned statement aligns with research's quantitative methodology, which seeks to quantify the impact of leadership ideologies on employee engagement. The target demographic included of managerial professionals operating in the conventional banking sector of Lahore, Pakistan. Middle-to upper-level managers were specifically targeted due to their significant involvement in development and application of leadership initiatives within organizational structure. Final sample size comprised 250 respondents, who were selected from several conventional financial institutions in Lahore. Selection of sample was conducted with the intention of ensuring representation across all levels of management, hence augmenting the generalizability of findings. The sample technique used in this study was stratified random sampling. Hierarchical levels of administration inside banks were used as foundation for identifying the strata.

By ensuring a balanced representation of managers across all organizational layers, this approach facilitated a comprehensive understanding of the research variables. The data was collected by a physical survey using a standardized questionnaire with a five-point Likert scale. Thus, the selected managers had in-person interviews conducted by proficient surveyors. The use of this technique facilitated a personalized and immediate engagement, resulting in an enhancement in the quality of responses. The process of data analysis included use of partial least squares structural equation modeling (PLS-SEM). The methodology used in our study is very suitable for investigating complex relationships within smaller sample sizes. Similarly, the ethical considerations were of paramount significance during the whole of study. Each participant provided their informed consent, ensuring both their voluntary involvement and the confidentiality of their responses was assured through the ethical statement. The research adhered to ethical guidelines, ensuring protection of participant privacy via anonymization of collected data. In order to ensure compliance with ethical values, the research study completed ethical evaluation & obtained permission from appropriate institutional review board.

RESULTS OF STUDY

Tabel 1 Reliability Analysis

	Cronbach's Alpha	RHO_A	CR	AVE
Financial Behavior	0.769	0.7691	0.8427	0.5185
Financial literacy	0.705	0.7241	0.7873	0.5076
Herding Behavior	0.8044	0.837	0.8596	0.5142
Investment Decision	0.7378	0.775	0.8238	0.5001
Risk Perception	0.8558	0.8604	0.8965	0.6342

The reliability analysis results of measurement model are shown in table. The internal consistency reliability of each component is assessed via use of Cronbach's Alpha ratings. The observed values of structures range from 0.705 to 0.8558, suggesting a satisfactory level of reliability. A Cronbach's Alpha coefficient over 0.7 is often considered to indicate a satisfactory level of internal consistency. The rho_A values, which range from 0.7241 to 0.8604, provide further support for trustworthiness of designs. The composite reliability values, which span from 0.7873 to 0.8965 and assess reliability of the latent constructs inside structural model, demonstrate a considerable level of robustness. The aforementioned numerical values reveal significant level of reliability, as above recommended threshold of 0.7.

Construct ability to capture variation in respect to measurement error is quantified by AVE values. Typically, AVE levels that above 0.5 are viewed as suitable. In this particular case, every construct falling within range of 0.5001 to 0.6342 either satisfies or surpasses this predetermined threshold. In brief, the assessment model demonstrates satisfactory levels of validity and reliability, indicating that selected indicators effectively measure underlying constructs of risk perception, investment choice, herding behavior, financial behavior, and financial literacy. The obtained findings provide confidence about the suitability of the measurement model for further structural analysis inside the study project.

Table 2 Factor Loading

	FB	FL	HB	ID	RP
FB1	0.6444				
FB2	0.7493				
FB3	0.7783				
FB4	0.7416				
FB5	0.6781				
FL1		0.5513			
FL2		0.6721			
FL3		0.6931			
FL4		0.6087			
FL5		0.7292			
HB1			0.4422		
HB2			0.6432		
HB3			0.8279		
HB4			0.8382		
HB5			0.7736		
HB6			0.6997		

Table 2A Factor Loading

	FB	FL	HB	ID	RP
ID1				0.7826	
ID2				0.8171	
ID3				0.7027	
ID4				0.4874	
ID5				0.6628	
RP1					0.795
RP2					0.7519
RP3					0.8122
RP4					0.8251
RP5					0.7957

The factor loadings for each of the study's variables are shown in the table, along with the direction and intensity of their link to the underlying latent factors. Items FB1 through FB5 in the Financial Behavior (FB) category show significant factor loadings ranging from 0.6444 to 0.7783, indicating a strong association between these items and latent factors of financial behavior. In the same way, Financial Literacy (FL) factors FL1 over FL5 show significant factor loadings between 0.5513 and 0.7292, which suggests a strong relationship with latent financial literacy factor. Herding Behavior (HB) items, which range from HB1 to HB6, show variable but high factor loadings, indicating close correlation with the herding behavior factor. Items pertaining to Investment Decision (ID) (ID1 over ID5) and Risk Perception (RP) (RP1 through RP5) exhibit significant factor loadings, underscoring their significance for the latent variables associated with investment decision and risk perception. Overall, coherence and relevance of the chosen items with their corresponding latent constructs are reflected in pattern of factor loadings in table, which lays the groundwork for a strong measurement model in the research.

Tabel 3 HTMT

	[1]	[2]	[3]	[4]	[5]
Financial Behavior [1]					
Financial literacy [2]	0.4174				
Herding Behavior [3]	0.4299	0.6311			
Investment Decision [4]	0.4901	0.557	0.61		
Risk Perception [5]	0.366	0.2853	0.2879	0.4198	

The examination of discriminant validity using the Heterotrait-Monotrait (HTMT) ratio is shown in Table 3. For each latent construct, the numbers along the diagonal show square root of the Average variation Extracted (AVE), which shows percentage of variation captured by construct compared to the measurement error. The HTMT ratios, which show how much constructs vary from one another in reference to the average degree of correlation within each construct, are shown by the off-diagonal numbers. Less than 0.85 is a well recognized threshold for discriminant validity in HTMT ratios. All of HTMT ratios are comfortably below this cutoff, demonstrating latent construct good discriminant validity. Financial behavior specifically shows proper distinctiveness in relationships with other constructs (financial literacy, herding behavior, investment decision & risk perception), validating the measurement model and bolstering the notion that these constructs measure distinct underlying aspects within study.

Figure 1 Reliability Analysis

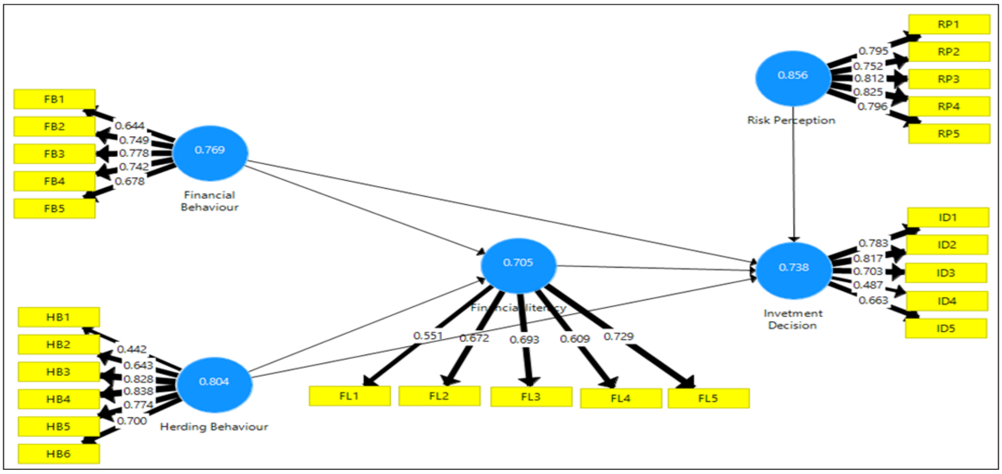


Table 4 Structural Equational Model

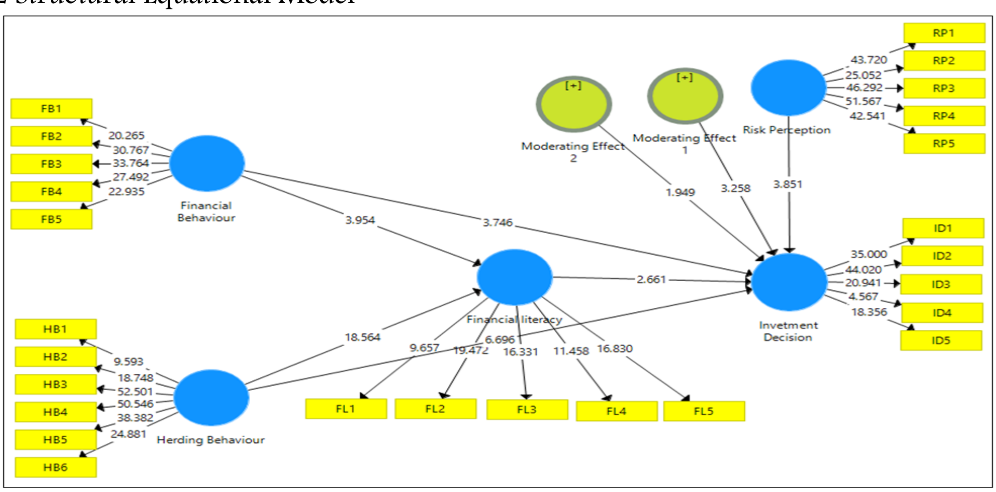
	OS	T-Statistics	P-Values
Financial Behavior -> Financial literacy	0.1498	3.9538	0.0001
Financial Behavior -> Investment Decision	0.1435	3.7464	0.0002
Financial literacy -> Investment Decision	0.1104	2.6608	0.0082
Herding Behavior -> Financial literacy	0.5616	18.5642	0
Herding Behavior -> Investment Decision	0.3305	6.6956	0
Risk Perception -> Investment Decision	0.1415	3.8513	0.0001
Mediating Effect			
Financial Behavior -> Financial literacy -> Investment Decision	0.0165	1.9857	0.048
Herding Behavior -> Financial literacy -> Investment Decision	0.062	2.7506	0.0063
Moderating Effect			
Moderating Effect 1 -> Investment Decision	0.1567	3.258	0.0013
Moderating Effect 2 -> Investment Decision	0.1134	1.9492	0.0522

The results of structural equation model (SEM), as shown in Table 4.2, provide significant insights into the interrelationships and impacts among the critical variables examined in this research. Significantly, the route coefficients of model demonstrate direction and strength of relationships. There is a noteworthy relationship between financial behavior and both financial literacy and investment decision-making ($\beta = 0.1435$, $T = 3.7464$, $p = 0.0002$). Process of making investment decisions is positively impacted by level of financial literacy ($\beta = 0.1104$, $T = 2.6608$, $p = 0.0082$). The presence of herding behavior was shown to have a statistically significant positive impact on financial literacy ($\beta = 0.5616$, $t = 18.5642$, $p < 0.001$) and investment decision-making ($\beta = 0.3305$, $t = 6.6956$, $p < 0.001$), highlighting its substantial significance in shaping individuals' financial attitudes and choices.

In addition, it is worth noting that there exists statistically significant positive relationship between individuals' perception of risk and their decision-making in the context of investments ($\beta = 0.1415$, $T = 3.8513$, $p < 0.0001$). This finding underscores the importance of individuals' risk perceptions in influencing their decision-making processes. It is important to consider model's mediating effects. The statistical analysis's findings show a significant relationship ($\beta = 0.0165$, $T = 1.9857$, $p = 0.048$) between financial behavior and the factors under consideration. Likewise, there is a noteworthy correlation between herding behavior and the characteristics given ($\beta = 0.062$, $T = 2.7506$, $p = 0.0063$). It is shown that herding behavior and financial behavior have major indirect influence on investing decision-making, with financial literacy serving as a mediator. The results of this research imply that financial literacy may have a mediating role in association between investing choices and behavioral attributes.

The moderating effects of the model also clarify how external variables affect connection between financial behavior and investment decision-making. Moderating Effect 1 demonstrates statistically significant positive relationship ($\beta = 0.1567$, $T = 3.258$, $p = 0.0013$), indicating that under certain conditions, there exists heightened association between financial conduct as well as the investment decision-making. Moderating Effect 2 suggests a potential moderating effect that is approaching statistical significance, while exhibiting a positive influence ($\beta = 0.1134$, $T = 1.9492$, $p = 0.0522$). In general, the findings from the structural equation modeling (SEM) analysis shed light on the various direct and indirect relationships, as well as the moderating effects, present within the conceptual model. This comprehensive examination provides a deep comprehension of the complex dynamics among financial behavior, financial literacy, herding behavior, risk perception, and investment decision-making.

Figure 2 Structural Equational Model



DISCUSSION

Previous scholarly work has emphasized significance of individual financial behavior in relation to financial knowledge and future investment decisions (Sohail, Ali & Hussain, 2021). Existing body of evidence supports the notion that there is a positive association between financial behavior and both financial literacy and investment decision-making. In this connection, the path coefficients that exhibit statistical significance indicate the positive relationship between the individuals who participate in certain financial activities and their higher levels of financial literacy, which in turn increases the likelihood of making the prudent investment decisions (Rooh & Hussain, 2022). The positive effect of financial literacy on the investment decision-making process aligns with previous studies that highlight the significant influence of financial literacy on the individuals' investment choices (Fernandes et al., 2014; Lusardi & Tufano, 2015). Thus, this finding underscores the need of implementing financial literacy enhancement initiatives and interventions aimed at educating the individuals about financial matters, so enabling them to make more informed investment choices (Harahap et al., 2022).

Studies by Pillai and Rajasekar (2021) investigate the role that peer behavior and social influence play when making financial decisions. This study supports the idea that investing decision-making and financial literacy are significantly impacted by herding behavior. The desire to follow others' lead leads to herd behavior, which not only demonstrates improved financial literacy but also has a significant impact upon investment decision-making. This discovery is consistent with the idea that financial attitudes and decision-making are significantly influenced by social dynamics. Mulasi et al. (2022) have undertaken research that highlights status of risk perceptions in financial decision-making process. This result is constant with other research indicating positive relationship amid risk perception and investing decision-making. Adopting conservative investing methods is positively connected with having a higher feeling of risk, demonstrating complex relationship amid personal subjective risk assessments and financial decisions. The understanding of underlying mechanisms that link individual actions and investment outcomes is eased by mediating effects shown in model, mainly mediation of financial conduct and herding behavior via financial literacy on investment decision-making.

The finding aligns with previous research conducted by Sitatian (2021), which also emphasized the role of financial literacy as mediator in many financial decision-making processes. The moderating influences are the external elements that influence the relationship between investment decision-making and financial behavior. The second technique of moderating effect demonstrates significant finding, indicating the presence of a potential external influence that warrants further examination. Additionally, the first approach of moderating effect strengthens this association by revealing that, under certain conditions, the influence of financial behavior on investment decisions becomes more pronounced. In conclusion, findings obtained from Structural Equation Modeling analysis provide a comprehensive understanding of intricate relationships amid financial behavior, financial literacy, herding behavior, risk assessment, and investment decision-making. The findings of this study align with other research in field, thus reinforcing and extending existing knowledge. This underscores the need of adopting comprehensive methods to financial education and interventions that include the complex interplay between the individual behaviors and external factors in shaping financial decision-making.

CONCLUSION

In the context of the Pakistan Stock Exchange (PSX), the study's conclusions have applications for investors, financial institutions, and legislators. First off, fact that financial behavior and investment decision-making have a positive relationship implies that financial education initiatives aimed at PSX investors may be beneficial. Interventions that are specifically designed to improve financial habits may result in more informed investment decisions, that might boost investor confidence and market participation overall. The significance of fostering financial literacy among PSX investors is underscored by the recognized mediating function of financial literacy. Financial literacy programs might enable investors to make knowledgeable choices and contribute to stable and effective stock market. These programs could take the shape of seminars, instructional campaigns, or internet tools. Financial firms that are part of PSX are affected practically. These results might be used by banks and investment businesses into strategies for engaging with customers, providing them with tailored financial education according to financial habits. This focused strategy has the potential to develop informed and involved investor base by enhancing financial literacy and having beneficial impact on investment choices.

This study's theoretical implications add to body of information already available in the domains of behavioral economics and finance, especially when considering particulars of the Pakistan Stock Exchange. Our theoretical knowledge of complex dynamics at play in financial decision-making processes is improved by correlations that found between financial behavior, financial literacy, herding behavior, risk perception, and investment decision-making. Study's validation of financial literacy's mediating function is consistent with theories already in place that highlight critical role knowledge plays in financial decision-making (Lusardi & Mitchell, 2011; Fernandes et al., 2014). It offers empirical support for theoretical basics that suggest financial literacy is vital mechanism by which personal behaviors impact investment decisions. Study's recognition of moderating effects raises the possibility that outside variables have complex influence on how financial behavior and investment choices interact. This is consistent with theoretical frameworks (Kahneman & Tversky, 1979; Shiller, 2003) suggest contextual and environmental variables have impact on individual's decision-making processes. Study theoretical implications enhance body of knowledge in subject by providing a more sophisticated comprehension of variables affecting investment choices on the Pakistan Stock Exchange.

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