ONLINE ISSN: 3007-3197 | PRINT ISSN: 3007-3189

http://amresearchreview.com/index.php/Journal/about

Annual Methodological Archive Research Review
http://amresearchreview.com/index.php/Journal/about
Volume 3, Issue 7 (2025)

From Emotions to Equity: The Role of Psychological Biases in Decision Making and Investment Performance in Pakistan

[1]Zahid Ali, [2]Ragni Lund, [3]Ahsan Raza, [4]Shah Zaman, [5]Suresh Kumar

Article Details

Keywords: Behavior Finance, Heuristics, Herding, Exploratory Factor Analysis, Investment Performance, Risk Perception, Reliability.

Zahid Ali
Institute of Business Management (IoBM) Karachi

Ragni Lund
Sukkur IBA University

Ahsan Raza
Institute of Business Management (IoBM) Karachi
Sindh

Shah Zaman
National Research University Higher School of Economics, Moscow, Russia,

Suresh Kumar
Higher School of Economics (HSE) University, Moscow, Russia

ABSTRACT

The main objective of this research is to explore and identify the behavioral factors that influence the investors in financial decision making. The significance relationship of behavioral factors and investment performance is also examined and tested. The role and importance of behavioral factors and psychological factors in decision making is assessed. The mediating role of Heuristics in decision making and the moderating role of risk perception is also tested and analyzed in this research. The comparison of decision making in traditional finance and behavioral finance is conducted to present in depth understanding of psychological factors and their role in effecting investment performance. The empirical study is conducted through descriptive statistics, Reliability, Validity, Correlation, Exploratory factor analysis, Confirmatory factor analysis, and mediation and moderation tests are run to present results. The market knowledge, risk perception, Heuristics, stress, Mood, Social Interaction, and other psychological factors are discussed. The significance of the behavioral factors is tested through SPSS. The sample of 111 is conducted from the financial literate to infer the results based on empirical statistics.

INTRODUCTION

Decision making involves the several factors and steps that make it complex (Hunjra, 2020). Those decisions are backed by several models and valuation procedures that helps people to take decision efficiently and correctly. When comes to financial decision making, it includes complex process and steps that are based on financial models, valuation process, and theories (Xiang, 2014). For investors to take decision related to investment, they need to consider different financial models such as Capital Asset Pricing Model (CAPM), Risk premium, market risk, market risk, and risk-based pricing models (Uddin et al., 2023). In the current financial market, which is changing day by day and have different dynamics, these limited financial models will not help that much in addressing the situational and scenario-based problems (Majka, 2024). Currently, stock market is based on changing situations and speculations that include Heuristics, Herding behavior, Social Interaction, psychological factors, and market knowledge (Luong, 2011). The investors cannot just rely on these financial models for decision making, but they also require some situation based and problem-solving approach in their decision making (Luong, 2011). To manage these issues in decision making, the investors need to align them with Cognitive psychological factors such as Heuristics, Herding behavior, Social Interaction, Anger, Mood, Stress, and Risk perception. In addition to this, the professional experience such as market knowledge, market understanding also play vital role in financial decision making.

The strategies set by investors based on financial models and psychological factors will result in more return, worthwhile investment performance, and low losses in financial market (Shahzad et al., 2024). In the economy, the role of financial market is not limited to the buying and selling of stocks, but to manages and understand the dynamics and to be up to date (Yun, 2024). The opportunities in financial markets always come with the specific level of risk. Those who have knowledge of financial inclusion, financial market, and use psychological factors to take investment decision, gain the more (Xiaoyang Zhoua, 2018). From the beginning, the focus of investors has been only on the financial models that base they decision making (Dasinapa, 2025). Regardless of the limitations and issues in those prominent models such as Capital Asset Pricing Model (CAPM), risk associated models, and risk premium models, people are still relying on these models (Xiang, 2025). These models can only address the issues related to documented problems and concerns, the environmental and situational problems are still unaddressed by these models. In the presence of complex and uncertainty-based situations, using financial models for decision making will take time and can ruin the time management (Jarunde, 2022). In decision making, the involvement of

cognitive thinking and situation-based critical thinking skills are must (Arfa Akram et al., 2024). In behavior finance, people shade their decisions in financial markets based on the reference group. They align the decision with the decision of those whom they consider expert and more experienced.

The traditional finance has always focused on these financial models and valuation that are irrespective of human interaction (Ravindra Jain*, 2015). The traditional finance theory suggests that investors in market are rational, and they always make financial and investment decisions rationally (Almansour et al., 2023). As per the traditional finance, the decision of investors is always backed by solid financial theories, models, and financial choice. Furthermore, the investors associate the investment decisions with risk. Traditional finance theory considers every individual same and they all behave in same way in terms of financial decision making, based on the financial models (Ricciardi, 2008). On the other hand, Behavior finance and different empirical studies suggest that individual investors are different than each other and behave differently in financial decision making (Ravindra Jain*, 2015). The evolution of behavior finance has addressed the psychological based issues in decision making and have provided various shortcuts to avoid risk and enter in market (Morgan & Inoue, 2025). Different behavior theories such as Prospect theory Herding theory, Heuristics theory, Regret theory, and Anchoring theory have provided easiness to the investors for taking financial decisions. The behavior finance includes the biases that helps in decision making in stock market (Shah & Butt, 2024). These biases such as Deposition effect (investors sell the profitable securities and hold the losing securities for long run), Mental accounting (people have different values for money, which lead them to irrational decision making), Investor's Overconfidence bias (it is the tendency of an investor to overestimate the probability of gaining). These all biases lead them to irrational decision making, and sometimes these biases actively help in stock market. (Xiang, 2014)

Although the traditional finance has provided prominent theories and models that addresses the financial issues and helps in decision making, still it requires the inclusion of behavioral factors, and situational factors that influence the real time decision making (Kudryavtsev1, 2012). *Ignoring the Investor's behavior and psychological factors in decision making can lead to the loss of investment and regret. Neglecting the psychological factors and market psychology can negatively affect the investment performance and can weakens the willingness of investors to invest* (Luong, 2011). The heuristics, herding behavior, Mood, Anger, stress level, Social Interaction, Risk perception, and market knowledge impacts the investment performance of an investor.

The purpose of this research is to highlight and measure the effect of behavior factors on the Investment performance of the investors. The studies are taken from different countries as Behavior finance is growing field that still requires more study to explore.

The research will address the question that " Do the behavior factors such as Heuristics, Herding, Social Interaction, Risk perception, market knowledge is significantly affecting the Investment performance? (Suzaida Bakara, 2015) This study will evaluate and highlight the mediating role of Heuristics in Investment performance and market knowledge. The objective of this research is to explore and evaluate the effect of behavioral factors over investment performance.

THEORETICAL FRAMEWORK

The theoretical background of this study is based on the concept and understanding of Prospect theory (N. Grishina, 2017), Heuristics theory, Regret theory, Herding theory (Chaudhary1*, 2013), and market factor theory. These theories help in understanding the concept of loss, investors make decisions based on loss and gain judgements. In Herding theory, it suggests that inventors mostly follow the people and experienced reference group in taking decision in stock market. These theories provide how behavioral factors provide ease in financial decision making by including all aspects. The several factors such as overconfidence, market knowledge, mental accounting, behavioral biases also effect the financial decision-making investment performance for the investors by providing them shortcuts and role of thumb techniques in stock market (*Agha Jahanzeb, 2012). The inclusion of these factors add value in capacity of decision making for the investors. These factors help in understanding the market dynamics, risk position, and how people behave in market. These factors play key role, given below is the brief discussion of the prominent behavioral factors.

INVESTMENT PERFORMANCE

The investment performance shows the dependent factor that is affected by the behavioral factors. This shows how the factors such as market knowledge and risk perception differently effect it (Sahi, 2012). Investment performance measures the return an investor gains over his investment by considering the level of risk and adopting the behavioral factors in investment decision making (Hossain & Siddiqua, 2024). In traditional finance theory, the investment performance was only be measured and revised by financial models and valuation process (Bajpai et al., 2023). In behavior finance theory, the psychological factors actively effect the investment performance (Hunjra, 2020). If an investor has known of market trends and he perceives that stock market will perform well,

he can improve his return.

HEURISTICS

This shows an independent factor here. Heuristics are the shortcuts and rule of thumbs that helps in decision making in brief time (Chaudhary1*, 2013). These shows mental processing and understanding the aspect of market. In stock market, the Heuristics play key role in take short selling decision.

HERDING

Herding in financial decision making is a belief of an investor that other investors are right, and they are taking right decisions. (Ravindra Jain*, 2015) The invertor follows other investors and without much mental processing, make financial decisions. This behavior is analyzed in market when the followed investor earns more.

MARKET KNOWLEDGE

Market knowledge or market factors that how much an investor knows about the dynamics and aspects of market (Luong, 2011). Knowing the market will results in more profit and losses. The understanding of changing values such as interest rate, exchange rate, and bull or bearish market can better affect the decision making of an investor (Sia et al., 2025).

SOCIAL INTERACTION

This shows the individuals are surrounded by different people. Similarly in stock market they are surrounded by different investors (Hunjra, 2020). Those all investors and the interaction with them have significant impact on the investment performance of the investors. It can positively or negatively impact the decision making of Investor based on how accurately the information is proceed.

ANGER

Anger shows the frustration of an investor in stock market. This frustration can positively or negatively affect the decision making of an investor (Hunjra, 2020). The aggression in stock market sometimes makes investors more active.

FEAR

The fear in financial decision-making influences the output of investment. If the investor has more fear, he can take pessimistic decisions (Hunjra, 2020). The people with fear also take good decision as they consider every aspect.

MOOD

In decision making, mood has significant effect too. People take more decisions when they are in

positive mood (Hunjra, 2020). That mood has effect on the investment performance and decision making in stock market.

STRESS

Stress represents the behavior factor that influences in decision making. (Ravindra Jain*, 2015) When people have more stress, they select the alternative which are less likely to be chosen. The decision-making changes over stress level. (Hunjra, 2020)

RISK PERCEPTION

Risk perception explains how people perceive the risk and consider it. Some are risk averse, and some are risk lovers (Hunjra, 2020). The higher risk people take, the more return they find. It has more effect on investment performance (Chaudhary1*, 2013).

Literature review and Hypothesis Development

HYPOTHESIS FROM THE LITERATURE

From the literature and constructs, different hypotheses are made and tested. The results are given below to evaluate whether the hypotheses are accepted or rejected. If the Sig value is less than 0.05, the hypothesis will be failed to reject. The results will be based on Sig value, t value and path coefficient (beta).

H1: there is significant effect of market knowledge on Investment performance

H2: there is significant effect of Heuristics on investment performance

H3: there is significant effect of Herding on Investment performance

H4: there is significant effect of social interaction on Investment performance

H5: there is significant effect of Anger on Investment performance

H6: there is significant effect of Fear on Investment performance

H7: there is significant effect of Mood on Investment performance

H8: there is significant effect of Stress on Investment performance

H9: there is significant effect of Risk Perception on Investment performance

H10: Heuristics Mediates the relationship between market Knowledge and Investment Performance.

H11: there is a moderating effect of Risk Perception between market knowledge and investment performance.

MEDIATING EFFECT OF HEURISTICS

In previous studies by Azim & Khan (2016), and Anum (2017), Heuristics have been considered as Mediating variable between the Market knowledge and Investment performance. Research was

conducted by Ashfaq & Anjum (2015), where it was evaluated, that Heuristics are used as Mediating and were significant (N. Grishina, 2017). (Muhammad et al.2016) have also evaluated the mediating effect of Heuristics on the investment performance (Siddiquee, 2015). This was affecting the Investment performance and market knowledge with significance of less than 0.05 which will be evaluated in this research. It says, there is mediating effect of Heuristics between Investment performance and market knowledge. This will be evaluated through the four steps approach (KENNY, 1986). In that approach, first the significance of independent and dependent will be checked. Second, the significance of independent and mediating will be evaluated. Third, the significance of mediating and dependent will be evaluated. And in the last, the significance of mediating along with independent will be evaluated by keeping investment performance as dependent and these two as independent.

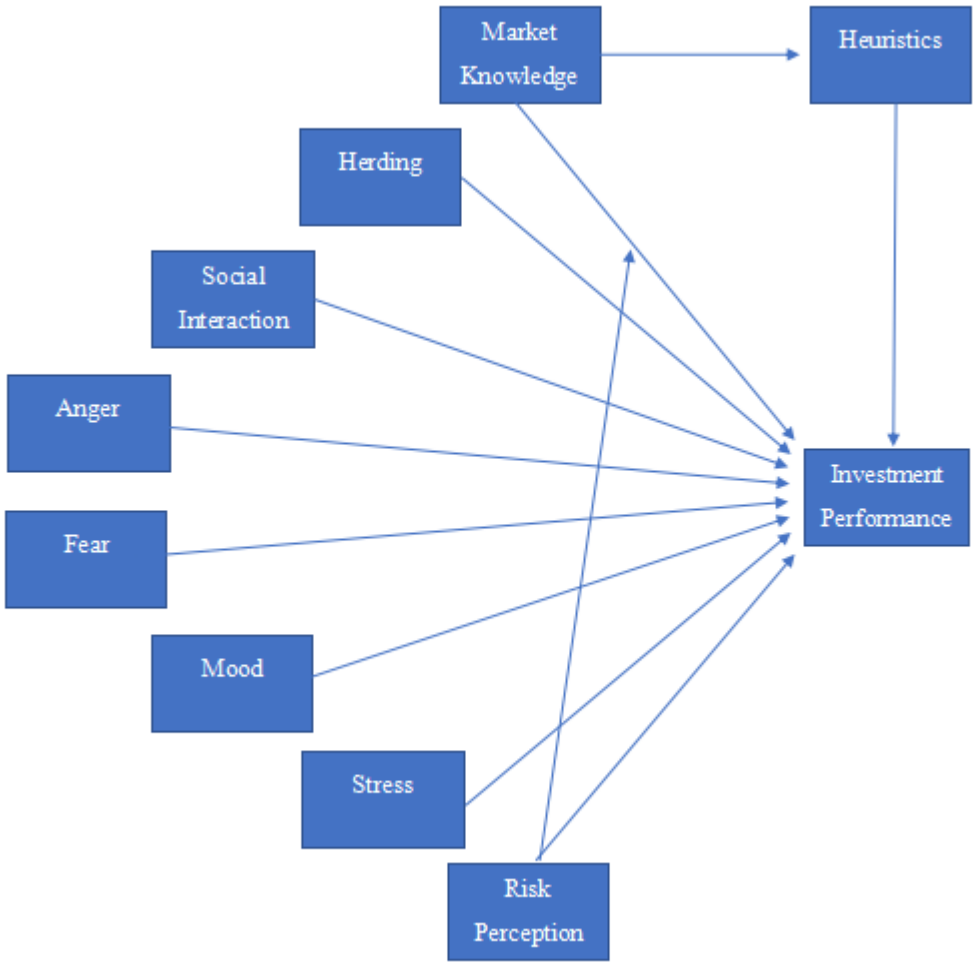
H10: Heuristics Mediates the relationship between market Knowledge and Investment Performance.

We will check this hypothesis through the four-steps approach.

CONCEPTUAL FRAMEWORK

Heuristics (H) is mediating, Risk Perception is Moderating variable, investment performance is dependent. From the past studies and literature, the Investment performance is Dependent. Based on the theoretical underpinning, the hypothesis is derived related to Investment performance, Risk perception, market knowledge, etc. before this study, different studies have used these constructs (Chaudhary1*, 2013). They also consider risk perception, market knowledge, heuristics, and other factors affect the investment performance and decision making. The conceptual framework is developed based on the test results and discussion.

CONCEPTUAL FRAMEWORK



METHODOLOGY

The methodology of the research includes the research design Sampling techniques that how we collected samples and how much samples are collection, sample size based on the minimum sample size by Hair et al. Instruments used in the research for data collection, reliability, Validity, Exploratory factor analysis, correlation, descriptive statistics, and other different strategies that are taken for testing the hypotheses and take decision whether to Reject those hypotheses or not (Hunjra, 2020). This research is Quantitative research that includes the descriptive analysis, empirical study to find the relationship between the constructs and test that relationship (Kudryavtsev1, 2012). Although for this study, the higher number of samples of population is required, but due to time constraints, only limited sample is collected, and test is run on that to infer the results for complete population. The population of this study is the finance literate people who like to invest or interested in stock market investment (Xiang, 2014). In Pakistan, there is

small numbers of people who invest in stock market, the data is that is why collected from some literate students and investors to test the results.

The Convenience sample technique is used in this study where the responses are collected from the selected target respondents who are aware of financial terms (Siddiquee, 2015). When sample is collected, the statistical tests are run to check and test the hypotheses. The descriptive statistics, reliability, Validity, Discriminant validity, convergent validity is done on SPSS.

INSTRUMENT DEVELOPMENT

There is total ten constructs in this study and instrument are developed on these bases. The investment performance (3), heuristics (3), and Herding (4) are adopted from Chong Ying Xiang. Market knowledge (3) is adopted from Le Phuoc loung (Luong, 2011). Social Interaction (4), Anger (4), Fear (4), Mood (4), Stress (3), and Risk perception (4) adopted from Abdul Moueed & Ahmed Imran Hunjra (Hunjra, 2020). The questionnaire was developed and there was scale from 0 to 5 from strongly disagree to strongly agree. The reliability is tested. The Cronbach's Alpha should be greater than 0.7, the cut off value is 0.6 (Hair, 2009). the validity is tested through Average variance explained that must be greater than 0.5. the discriminant validity was also checked where square root of AVE (Average variance Explained) must be greater than correlation of that construct.

RESULTS

According to the demographics from the questionnaire, 111 people responded the martial status, 88.28% of them were single. Most of them from the finance background and were students. 73.87% are the graduated who have responded the questionnaire.

DESCRIPTIVE STATISTICS

For the descriptive statistics, there is prerequisite to first test the normality of data. If the data is normally distributed, then regression analysis is conducted. To confirm the univariate normality of the data, the descriptive analysis of data is done. The skewness and kurtosis of the data are checked. The range for Skewness is $-1<SK<1$, and for Kurtosis $-3< KT<3$ (Hair, 2009). If Skewness and skewness and kurtosis are in range, the data us normally distributed. Given below table shows the skewness and kurtosis which are in range. So, we can say that the data is normally distributed and hence regression test can be run on this.

Construct	*Mean*	*Std. Dev*	*Skewness*	*Kurtosis*
IP	3.219219	0.674942	0.117799	-0.49173
H	3.600601	0.647949	0.337796	-0.53753
HER	3.335586	0.615607	0.581916	-0.22789
MK	3.777778	0.711143	0.154661	-1.02708
SI	3.333333	0.507146	0.67229	-0.10975
ANG	3.238739	0.597711	0.586621	0.088984
F	3.382883	0.547536	0.490807	0.003958
M	3.735736	0.738709	0.115843	-1.08039
ST	3.423423	0.678227	0.219373	-0.58542
PR	3.563063	0.697779	0.205102	-0.34966

RELIABILITY

The reliability shows the internal consistency and how closely the items are related in normally distributed data. The reliability is checked through the Cronbach's Alpha. The value of Cronbach's Alpha should be greater than 0.7 for an ideal condition (Santos, 1999). The cut off value of Cronbach's Alpha is 0.6. if the value if less than 0.6 (Hair, 2009), the construct will be removed and there will not be internal consistency in data. The table is given below for Reliability. The value of constructs is above 0.6, which means they are above the cut off value and hence there is internal consistency in the data.

CONSTRUCTS	**CRONBACH'S ALPHA (STANDARDIZED)**	**NO. OF ITEMS**	**MEAN**	**S. D**
IP	0.672	3	9.66	2.025
H	0.653	3	10.76	1.91
HER	0.639	4	13.34	2.46
MK	0.627	3	11.33	2.133
SI	0.641	4	13.333	2.028
ANG	0.667	4	12.95	2.391
F	0.89	4	13.53	2.190
M	0.675	3	11.21	2.216
ST	0.680	4	13.69	2.713
RP	0.668	4	14.25	2.791

CORRELATION ANALYSIS

The correlation shows that whether there is a relationship between the variables or not. The correlation is checked through the correlation analysis test. One other thing for correlation is that it ensures that whether there is Multicollinearity or not. The correlation range should be between 0.2 and 0.9 (Bell, 2007). if the correlation coefficient is greater than 0.9, there will be issue of Multicollinearity in the data.

There are different ranges for correlation coefficient to be highly correlated or least correlated.

$0<r<0.3$ is Very weak relationship.

$0.3<r<0.5$ is weak relationship.

$0.5<r<0.7$ is strong Relationship.

$0.7<r<0.9$ is very strong relationship.

If $r=1$ the variables are same. And if $r>0.9$, there is Multicollinearity in the data (Hair, 2009). Based on the below table, there is no Multicollinearity in the data as all values are in range. There is very weak relationship between IP and ANG, and IP and H. There is very weak relationship between ANG and MK with r= 0.0671

	IP	H	HER	MK	SI	ANG	F	M	ST	PR
IP	1									
H	0.389113	1								
HER	0.200578	0.42834	1							
MK	0.388625	0.546572	0.363977	1						
SI	0.238291	0.268199	0.275414	0.114831	1					
ANG	0.100069	0.058701	0.212649	0.067133	0.404246	1				
F	0.059855	0.065542	0.181718	0.121277	0.368993	0.452537	1			
M	0.313764	0.433796	0.216777	0.421735	0.271646	0.320913	0.304879	1		
ST	0.250494	0.262482	0.170976	0.220422	0.314408	0.247336	0.341307	0.458231	1	
PR	0.26314	0.381279	0.213505	0.295669	0.25636	0.230587	0.386835	0.545557	0.579376	1

VALIDITY ANALYSIS: CONVERGENT VALIDITY

The validity is tested if the constructs are adopted from the previous studies to know whether they measure what they intend to do or measure. This is done because the cultural and environmental factors are different at everywhere. The constructs in this study were previously used in the study,

to better check the Validity, we do analysis on it. Validity is determined by convergent and Discriminant validity (Fornell, 2009). In the Convergent validity, the AVE (Average variance explained) should be greater than 0.5 (Hair, 2009) All values in our research are greater than 0.5 hence the data is fulfilling the requirement of Convergent validity.

DISCRIMINANT VALIDITY

The Discriminant or Divergent validity, If the square root of AVE is greater than Correlation of that construct, we will conclude that there is uniqueness in the constructs. Here square root of AVE is greater than the correlation, hence the constructs are valid and measure what they intend to measure. The Discriminant validity shows the uniqueness of the variables. This shows that variables are distinct and unique in nature (Hair et al.). Th square root of variance explained must be greater than pair of correlation (Larcker, 1981).

	IP	H	HER	MK	SI	ANG	F	M	ST	PR
IP	0.7295									
H	0.278	0.7393								
HER	0.198	0.428	0.7202							
MK	0.286	0.547	0.363977	0.7579						
SI	0.121	0.268	0.275414	0.114831	0.7183					
ANG	0.006	0.059	0.212649	0.067133	0.404246	0.7277				
F	-0.074	0.066	0.181718	0.121277	0.368993	0.452537	0.6998			
M	0.245	0.434	0.216777	0.421735	0.271646	0.320913	0.304879	0.7370		
ST	0.187	0.262482	0.170976	0.220422	0.314408	0.247336	0.341307	0.458231	0.7594	
PR	0.263	0.381279	0.213505	0.295669	0.25636	0.230587	0.386835	0.545557	0.579376	0.7138

REGRESSION ANALYSIS

As the data is normally distributed and Reliability is also in range, the regression Analysis can now be run. Regression analysis test is run on SPSS after checking the normality of data through Skewness, Kurtosis, Descriptive Statistics, Reliability, and validity. These tests are prerequisite of Regression Analysis.

TABLE-1

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.867789	0.55497	1.563669	0.121023	-0.23312	1.9687	-0.2331	1.9687
H	0.16921	0.123121	1.374347	0.172376	-0.07503	0.4134	-0.075	0.4134
HER	-0.02255	0.110727	-0.20365	0.839038	-0.2422	0.1971	-0.2422	0.1971
MK	0.22793	0.103978	2.192104	0.030669	0.021666	0.4342	0.0217	0.4342
SI	0.19831	0.137484	1.442429	0.152275	-0.07442	0.471	-0.0744	0.471
ANG	0.013342	0.118722	0.112377	0.910747	-0.22217	0.2489	-0.2222	0.2489
F	-0.12943	0.131397	-0.98502	0.326966	-0.39008	0.1312	-0.3901	0.1312
M	0.06348	0.107057	0.592953	0.554538	-0.14889	0.2759	-0.1489	0.2759
ST	0.085125	0.11071	0.768895	0.44375	-0.1345	0.3047	-0.1345	0.3047
PR	0.045285	0.11654	0.388581	0.698404	-0.1859	0.2765	-0.1859	0.2765

STRUCTURAL MODELING AND MEDIATION ANALYSIS

When the data is cross sectional, the Harmon's Single Factor test is done to check common Method bias. To check the common method bias (CMB), it should greater than 0.5. The exploratory factor Analysis test is done and given below. In Factor Analysis, the Confirmatory factor analysis should be greater than 0.5. this shows that model is fit if it is greater than 0.5. it is done to confirm.

Construct	**Items**	**KMO**	**BToS**	**CFL**
IP	3	0.641	20.8854	0.503
H	3	0.616	11.546	0.52
HER	4	0.61	23.321	0.504
MK	3	0.624	41.113	0.56
SI	4	0.68	8.055	0.531
ANG	4	0.682	21.989	0.543
F	4	0.639	20.789	0.532
M	3	0.691	32.525	0.51
ST	4	0.646	39.493	0.57
RP	4	0.652	76.118	0.56

MEDIATING EFFECT OF HEURISTICS ON INVESTMENT PERFORMANCE

The Heuristics mediates between the investment performance and the Market knowledge that is tested on SPSS through four-steps process.

STEP-1

Conduct simple regression with X predicting Y. if Significance is lower than 0.05, then will proceed to second step.

TABLE-2

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	**Std. Error**	**Beta**	**t**	**Sig.**
1	(Constant)	1.826	.322		5.671	.000
	MK	.369	.084	.389	4.403	.000

a. Dependent Variable: IP

Based on the above table, the significance is less than 0.05, hence there is significant relationship between Market knowledge and Investment performance. MK effects the investment performance.

STEP-2

Conduct simple regression with X predicting M. if Significance is lower than 0.05, then will proceed to third step.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	**Std. Error**	**Beta**	**t**	**Sig.**
1	(Constant)	1.719	.281		6.121	.000
	MK	.498	.073	.547	6.814	.000

a. Dependent Variable: H

Here the significance is less than 0.05, hence there is significant relationship between Heuristics and Market Knowledge.

STEP-3

Conduct simple regression with M predicting Y to test significance. if Significance is lower than

0.05, then will proceed to fourth step.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	**Std. Error**	**Beta**	**t**	**Sig.**
1	(Constant)	1.760	.336		5.234	.000
	H	.405	.092	.389	4.410	.000

a. Dependent Variable: IP

The Sig value is less than 0.05, hence there is significant relationship between investment performance and Heuristics.

STEP-4

Conduct multiple regression analysis with X and M predicting Y. here, Market knowledge and heuristics will be Independent and investment performance as Dependent.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	**Std. Error**	**Beta**	**t**	**Sig.**
1	(Constant)	1.375	.365		3.766	.000
	MK	.238	.098	.251	2.434	.017
	H	.262	.107	.252	2.445	.016

a. Dependent Variable: IP

From the above table, it can be seen, that the sig value is less than 0.05 in multiple regression analysis, hence there is significance relationship.

The Beta in first step was 0.389 and Beta in last step is 0.251, so, there is partial mediating effect of Heuristics between Investment performance and market knowledge.

Moderating effect of Risk perception on Investment Performance.

Three steps model is used. (KENNY, 1986)

Step-1: calculate standardized Z values of Moderating variable and independent variable.

Step-2: Multiply the Z-score of independent variables (MK) with Moderating variables (Risk Perception) to get Interaction term; Zm*ZIndep.

Step-3: Conduct linear multiple regression analysis. Put Moderating, Independent, and interaction

term as independent variables, and Investment Performance as Dependent variable.

TEST

TABLE 3

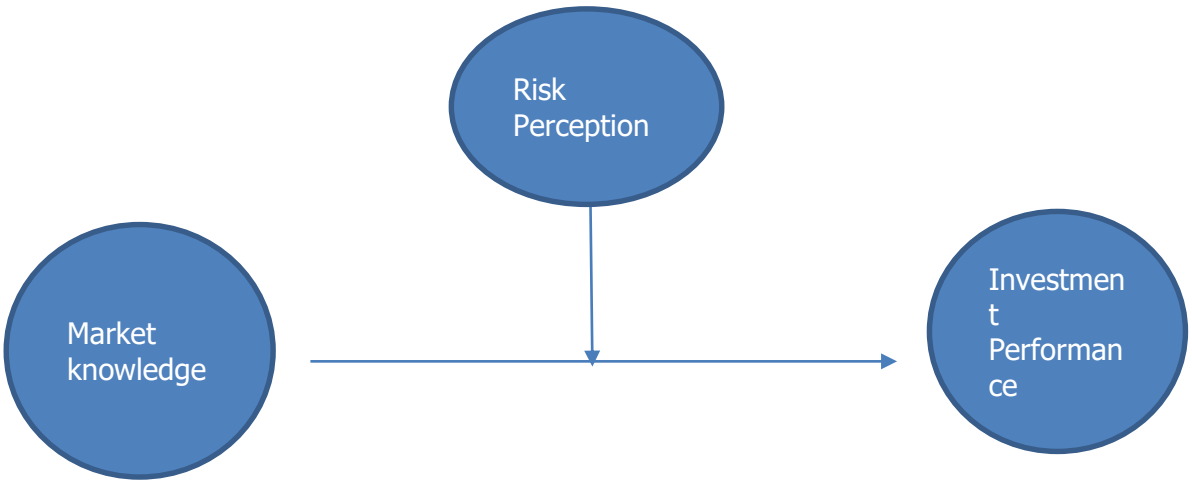
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.426	0.379		3.767	0.000
	MK	0.277	0.087	0.292	3.176	0.002
	PR	0.198	0.088	0.205	2.239	0.027
	interaction1	0.134	0.057	0.208	2.339	0.021

a. Dependent Variable: IP

The test is run by keeping IP as Dependent variable, and MK as independent, PR as moderating, and Interaction term. Based on Sig value, which is less than 0.05 for all three factors, we fail to reject the hypothesis. There is moderating effect of Risk Perception between MK and IP. The Beta is greater than 0.3, and t value is greater than 2.0, which shows there is significance. Hence, the hypothesis is accepted.

MODERATING FRAMEWORK



DISCUSSION AND CONCLUSION

Through this study, we are explaining the selected hypotheses and those rejected hypotheses. All

the hypotheses are tested and below is the explanation whether these re accepted or rejected based on significance level (less than 0.05) and based on t value (2).

HYPOTHESIS 1

The hypothesis one was stating there is significant effect of market knowledge on Investment Performance. From the table of Regression analysis (table 1), the Significance value is 0.030669 which is less than 0.05, T- value is greater than two, so the hypothesis FAILED TO REJECT. The results show that there is significant effect of Market knowledge on Investment Performance. This result is consistent with the past study that was conducted. This is consistent with the previous studies. (a, 2012)

HYPOTHESIS 2

Hypothesis two was stating there is significant effect of Heuristics on the Investment Performance. The table 1, regression analysis shows the Significance level of 0.172 which is higher than 0.05, and t value is less than 2, so we REJECT the Hypothesis. The results show there is No significant effect of Heuristics on Investment Performance. This is consistent with the previous studies. (Werner De Bondt, 2014)

HYPOTHESIS 3

Hypothesis three was stating there is significant effect of Herding on Investment performance. From the table 1, regression analysis, the significance level is 0.839 that is greater than 0.05, and T value is also less than 2, so we REJECT the Hypothesis. Based on results, there is No significant effect of Heuristics on Investment Performance. This is consistent with the previous studies. (Babajide, 2012)

HYPOTHESIS 4

Hypothesis four was stating there is Significant effect of Social Interaction on investment performance. Based on table 1, Regression analysis the significance level of social interaction is 0.1522 which is higher than 0.05, and t value is 1.44 that is less than 2, so We REJECT hypothesis. There is No significant effect of Social Interaction on Investment performance. This is not consistent with the previous studies. (Goh, 2010) (Hunjra, 2020)

HYPOTHESIS 5

Hypothesis five was stating there is significant effect of Anger on Investment performance. Based on the table 1, regression Analysis, the significance value is 0.9107 which is higher than 0.05, and t value is 0.1123 which is less than 2, so, We REJECT the hypothesis. There is No Significant effect of Anger on Investment performance. This is not consistent with the previous studies. (Khoa

Cuong Phan, 2014)

HYPOTHESIS 6

Hypothesis six was stating there is significant effect of Fear on Investment performance. Based on the table 1, regression Analysis, the significance value is 0.3269 which is higher than 0.05, and t value is -0.98502 which is less than 2, so, We REJECT the hypothesis. There is No Significant effect of Fear on Investment performance. This is not consistent with the previous studies. (Hunjra, 2020)

HYPOTHESIS 7

Hypothesis seven was stating there is significant effect of Mood on Investment performance. Based on the table 1, regression Analysis, the significance value is 0.5545 which is higher than 0.05, and t value is 0.5929 which is less than 2, so, We REJECT the hypothesis. There is No Significant effect of Mood on Investment performance. This is consistent with the previous studies. (Hunjra, 2020)

HYPOTHESIS 8

Hypothesis eight was stating there is significant effect of Stress on Investment performance. Based on the table 1, regression Analysis, the significance value is 0.4437 which is higher than 0.05, and t value is 0.7688 which is less than 2, so, We REJECT the hypothesis. There is No Significant effect of Stress on Investment performance. This is not consistent with the previous studies. (Hunjra, 2020)

HYPOTHESIS 9

Hypothesis nine was stating there is significant effect of Anger on Investment performance. Based on the table 1, regression Analysis, the significance value is 0.698 which is higher than 0.05, and t value is 0.388 which is less than 2, so, We REJECT the hypothesis. There is No Significant effect of Risk perception on Investment performance. This is not consistent with the previous studies. (Hunjra, 2020)

HYPOTHESIS 10

Hypothesis ten was stating Heuristics mediates the relationship between market knowledge and Investment performance. Based on the table 2, Analysis of mediating variable the significance level is 0.000 and in 4rth step it is less than 0.05, so we FAILED to Reject the hypothesis. The Beta value is decreasing from step 1 to 4, so, there is Partially Mediating effect of Heuristics between investment performance and market knowledge. The result is consistent with previous studies. (Hunjra, 2020)

Hypothesis H11

Hypothesis eleven was stating there is a moderating effect of Risk perception between investment performance and market knowledge. Based on the table 3, given above in Moderating effect of Risk Perception, the significance level through the multiple regression analysis is less than 0.05, t value is greater than two, and Beta is greater than 0.2, so We FAILED to Reject the hypothesis. There is moderating effect of risk perception between investment performance and market knowledge the study is consistent with the previous studies. (Sahi, Individual investor biases:, 2010)

IMPLICATION FOR INVESTORS/POLICY MAKERS

Different studies were conducted in past to study the effect of behavioral factors on the decision making and financial investment all over the world. The role of risk perception as moderating variable was discussed less in those studies which has significant effect on decision making as tested above. This research is a helping tool for all investors, researchers and analysts who wish to study the effect of behavioral factors in financial decision making. The investors should consider this research as a key factor in analyzing stocks and taking financial decisions. The results suggest that investors need to consider the market knowledge, risk perception and heuristics while taking any financial decision making in stock market or any other financial market. An investor with understanding of financial model will be limited to the specific models such as Capital Asset Pricing Model (CAPM), to be active and efficient, the investors need to be up to date, know market trends, understand risk, and consider heuristics when needed. This study brings some positive changes for investors to adopt these significant factors in decision making to boost the outcome and go along with market trends.

RESEARCH LIMITATIONS AND SCOPE FOR FUTURE RESEARCH

The focus of this study is the investors who are interested in investing the stock market, who are students but willing to invest in future. Only the specific independent variables were taken for study, not all. There can be other variables than also effect the investment performance which are not considered in this study. The core focus of this study is to analyze and test the behavioral factors that affect investment performance and investment decision, the other rational decision-making factors are not included that are part of traditional finance. Although the test presents the significant effect of Market knowledge, Heuristics, and Risk perception, still there some dimensions of study are there to be explored. The insignificant factors are insignificant just here, there can be significant effect of these variables if conducted on another dependent variable. The other behavioral factors such as Overconfidence, Anchoring, and Mental accounting are not included in

this research, but they have effect on investment performance and financial decision making. The future study on this topic will discuss the advanced effect of these behavioral factors on investment performance and will bring some innovative and positive results. The other factors can also be included as medicating or moderating variable such as Overconfidence, anchoring, and Cognitive thinking. The future studies with these additional factors will explain the relationship deeply and efficiently.

REFERENCES

Agha Jahanzeb, S. M.-u.-R. (2012). Implication of Behavioral Finance in Investment Decision-making

Almansour, B. Y., Elkrghli, S., & Almansour, A. Y. (2023). Behavioral finance factors and investment decisions: A mediating role of risk perception. *Cogent Economics & Finance*, *11*(2). https://doi.org/10.1080/23322039.2023.2239032

Arfa Akram, Mushahed Nawaz, Sundas Sattar, Ayesha Tasawar, Shaista Ajmal, & Awais Ur Rahman. (2024). Developing Critical Thinking in Psychology: The Role of Cognitive Processes in Problem-Solving and Decision-Making. *Research Journal of Psychology*, *2*(3), 244–250. https://doi.org/10.59075/rjs.v2i3.37

Babajide, A. A. (2012). Investors' Behavioural Biases and the Security Market: An Empirical Study.

Bell, B. &. (2007).

Bajpai, M., Tripathi, A., & Prasad, N. (2023). COMPARATIVE ANALYSIS OF TRADITIONAL AND MODERN FINANCIAL MODELS IN INVESTMENT DECISION MAKING. *ShodhKosh: Journal of Visual and Performing Arts*, *4*. https://doi.org/10.29121/shodhkosh.v4.i2.2023.2219

Chaudhary1*, A. K. (2013). IMPACT OF BEHAVIORAL FINANCE IN INVESTMENT.

Dasinapa, M. (2025). The Influence of Financial Planning on Investment Decision Making: Qualitative Analysis. *Atestasi : Jurnal Ilmiah Akuntansi*, *8*, 52–64. https://doi.org/10.57178/atestasi.v8i1.1256

Fornell, C. &. (2009). Evaluating structural equation models with unobservable variables and measurement error.

Goh, A. M. (2010). The Effect of Performance-Based Incentive.

Hair, B. b. (2009).

Hossain, T., & Siddiqua, P. (2024). Exploring the influence of behavioral aspects on stock investment decision-making: A study on Bangladeshi individual investors. *PSU Research*

Review, *8*(2), 467–483. https://doi.org/10.1108/prr-10-2021-0054

Hunjra, A. M. (2020). Use anger to guide your stock market decisionmaking: results from Pakistan. Cogent Economics & Finance.Jarunde, N. (2022). The Role of Financial Modeling in Capital Budgeting Decisions: Risks and Opportunities. *Open Access*, *3*(4).

KENNY, J. A. (1986).

Khoa Cuong Phan, J. Z. (2014). Factors Influencing Individual Investor Behavior: An Empirical Study of the.

Kudryavtsev1, A. (2012). "Rational" or "Intuitive": Are Behavioral.

Larcker, F. &. (1981).

Luong, L. P. (2011). BEHAVIORAL FACTORS INFLUENCING. *Umeå School of Business*.

Majka, M. (2024). *Forecasting Financial Models*.

Morgan, R., & Inoue, H. (2025). Behavioral Economics and Its Role in Financial Decision-Making Under Uncertainty. *National High School Journal of Contemporary Scholarship*.

N. Grishina, C. A. (2017). Prospect theory–based portfolio optimization:. *Quantitative Finance*.

Process.a, E. B. (2012). Behavioural Finance: The Emergence and Development Trends. .

Ravindra Jain*, P. J. (2015). Behavioral Biases in the Decision.

Ricciardi, V. (2008). *Risk: Traditional Finance Versus Behavioral Finance* (Vol. 3, pp. 11–38). https://doi.org/10.1002/9780470404324.hof003002

Sahi, S. K. (2010). Individual investor biases:.

Sahi, S. K. (2012). Neurofinance and investment.

Santos. (1999).

Shah, B., & Butt, K. A. (2024). Heuristic Biases and Investment Decision-making of Stock Market Investors: A Review Paper. *Vision*, *0*(0), 09722629231220985. https://doi.org/10.1177/09722629231220985

Shahzad, M. A., Jianguo, D., Jan, N., & Rasool, Y. (2024). Perceived Behavioral Factors and Individual Investor Stock Market Investment Decision: Multigroup Analysis and Major Stock Markets Perspectives. *SAGE Open*, *14*(2), 21582440241256210. https://doi.org/10.1177/21582440241256210

Sia, P.-C., Puah, C.-H., Leong, C.-M., Yii, K.-J., & Tang, M. M.-J. (2025). Does inflation or interest rate matter to Indonesian stock prices? An asymmetric approach. *Journal of Economics and Development*, *27*(1), 72–86. https://doi.org/10.1108/jed-07-2024-0239

Siddiquee, E. O. (2015). Overcoming Cognitive Biases: A Heuristic for. Journal of Behavioral

Finance.

Suzaida Bakara, *. A. (2015). The Impact of Psychological Factors on Investors' Decision Making. *Elsvier*.

Uddin, H. F., Hasan, M. A., Sajid, A., & Shaikh, A. S. (2023). Stock Returns and Risks: An Empirical Assessment Using Modified CAPM Approach. *Journal of Education and Social Studies*, *4*(3), 600–608. https://doi.org/10.52223/jess.2023.4319

Xiang, C. (2025). Evaluating CAPM: Strengths, Limitations, and Alternative Asset Pricing Models. *Advances in Economics, Management and Political Sciences*, *145*, 37–41. https://doi.org/10.54254/2754-1169/2024.LD19020

Werner De Bondt, R. M. (2014). Behavioral decision-making in finance: An.

Xiang, C. Y. (2014). The Influence of Behavioral Factors in Making. *Asian Journal of Finance & Accounting* .

Xiaoyang Zhoua, b. L. (2018). A prospect theory-based group decision approach considering consensus for.

Yun, L. (2024). The Dynamics of Stock Markets and their Impact on the Economy. *Journal of Stock and Forex Trading*, *11*(4).