ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

IMPACT OF BEHAVIOURAL BIASES ON INVESTMENT DECISIONS: A STUDY OF INDIVIDUAL INVESTORS IN PAKISTAN

Dr. Muhammad Asif[1*], Sana Karim[2], Dr. Abdul Latif[3], Hafiz Abdul Hai Asim[4] Abdul Kareem[5],

[1]Assistant Professor, Preston University, Islamabad, dr.asifmails@gmail.com
ORCID: https://orcid.org/0000-0001-6576-2805
[2]MBA (HR), Member of American Board of Neuro-Linguistic Programming, USA, sana.kq@gmail.com
[3]Assistant Professor, Department of Business Administration, Faculty of Management and Social Sciences, University of Poonch Rawalakot, Azad Jammu & Kashmir, abdullatif@upr.edu.pk
[4]MPhil Management Science andPrincipal, GHS Laleka, School Education Department, Bahawalnagar, Pakistan, asimawans786@gmail.com
[5]M.Phil. Financing Manager, The Bank of Punjab, Chiniot City Branch, District Chiniot, Punjab, Pakistan, abdulkareem135@yahoo.com

***Corresponding Author Email:** dr.asifmails@gmail.com

Abstract

Buyers and sellers of securities generally differ from rational individuals, particularly in emerging markets because of psychological biases. In this study, the five behavioural biases namely, overconfidence, herding, loss aversion, anchoring and disposition effect were explored to find their impact on the investment decisions of individual investors in Pakistan. Stratified random sampling is used with the help of a survey of 390 active investors of four big cities (Karachi, Lahore, Islamabad, Peshawar) and multiple regression analysis is used. The results indicate that all five biases significantly contribute to the decreased investment decision quality, which accounts for 41% of the variance of investment decision quality. Herding has the strongest negative effect ($\beta = -0.35$, $p < 0.001$), followed by loss aversion ($\beta = -0.29$, $p < 0.001$), overconfidence ($\beta = -0.24$, $p < 0.001$), disposition effect ($\beta = -0.19$, $p < 0.001$), and anchoring ($\beta = -0.16$, $p < 0.001$). The relationship between trading experience and decisions is moderated by the relationship between the herders and decisions: inexperienced investors are more vulnerable to the herders. Loss aversion (mean = 4.12/5) reflects the emotional nature of losses in Pakistan's dynamic market. Our results expand the behavioural finance literature to the largely unstudied South Asian context, and provide regulators (SECP), brokerage firms and investor education programs with practical debiasing tips.

Keywords: Behavioural finance, investment decisions, overconfidence, herding, loss aversion, anchoring, disposition effect, Pakistan Stock Exchange, individual investors, emerging markets.
JEL Classification: G11, G41, D91, O16

1. Introduction

1.1 Background

The efficient market hypothesis (EMH) (Fama, 1970) and modern portfolio theory (MPT) (Markowitz, 1952) all assume that the investor is rational, risk averse and has no bias in processing market information. But this orthodoxy has been undermined by market anomalies that occur again and again: bubbles, crashes, over- or under-pricing, and momentum. An alternative approach is behavioural finance, which was developed by Kahneman and Tversky (1979), extended by Thaler (1985), Shefrin and Statman (1985), Mumtaz et al. (2023) and others, adding psychological biases into the picture of financial decision making.

Cognitive and emotional biases in investment decision-making are more likely to affect individual investors in emerging economies, as they may lack access to advanced analysis, financial education, and experience navigating politically and economically turbulent times.

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

The case of a frontier country like Pakistan with more than 650,000 individual investor accounts (Central Depository Company of Pakistan [CDC], 2023) is intriguing. The Pakistan Stock Exchange (PSX) has seen dramatic ups and downs in the past ten years due to various factors such as political instability, currency devaluation, inflationary pressures and balance of payments deficit. In these volatile times, rational analysis can be replaced by heuristics, imitation and emotional responses.

1.2 Problem Statement and Research Gap

Although there is a surge in interest in the field of behavioural finance in South Asia, the number of empirical studies on individual investors is relatively small and has three main drawbacks in the context of Pakistan. First, the size of the samples is generally small (usually less than 150 respondents), which reduces the power of the study and limits the generalizability of the findings (e.g., Abbas et al., 2018; Reddy et al., 2026; Riaz & Hassan, 2017). Second, most studies focus on a single bias at a time, without considering the impact of multiple biases that investors might experience in the real world. T hird, the literature is largely pre-dates the recent economic and political crises in Pakistan (2022-2024) that could have had a significant impact on investor psychology. To overcome these limitations, this study includes a large and representative sample of 490 investors from four major cities, tests five well-documented behavioural biases simultaneously, and uses data from the post-2022 crisis period.

1.3 Research Objectives

1. To assess how prevalent overconfidence, herding, loss aversion, anchoring and the disposition effect were among individual investors in Pakistan.
2. To evaluate how strong the influence of each bias is on the quality of investment decisions (rationality of trading behaviour)
3. To explore the moderating effect of demographic variables (age, gender, income, education, trading experience, risk tolerance) on these relationships.
4. To craft practical debiasing interventions for use in the Pakistani context.

1.4 Significance of the Study

On a theoretical level, the study assesses the universal validity of prospect theory (Kahneman & Tversky, 1979) and herding theory (Banerjee, 1992) in a non-Western high volatility emerging market. In practice, our findings can help the Securities and Exchange Commission of Pakistan (SECP) create more focused financial literacy campaigns and help brokerage houses to share tips on financial literacy behavioural nudges to help their clients make better investment choices.

2. Literature Review and Hypothesis Development

2.1 Theoretical Foundations

Prospect theory (Kahneman & Tversky, 1979) assumes that people compare outcomes to some reference point, are loss averse and give small probabilities greater weight. This is in contrast to the expected utility theory. Later, Shefrin and Statman (1985) added the disposition effect and the behavioural portfolio theory, which stated that investors psychologically sort their assets into tiers with varying emotional objectives. Banerjee (1992) and Bikhchandani et al. (1992) formalized the herd behaviour as informational cascades, in which rational agents ignore their own signals if they see others ignoring theirs. The following theories provide a foundation for the biases discussed here.

2.2 Hypothesis Development

2.2.1 Overconfidence Bias

Excessive feeling of knowledge, information, and prediction. Overconfident investors trade more often, make greater transaction costs, and earn less net returns (Odean 1999). Overconfidence is positively related to trading volume in Pakistan: Abbas et al., 2018. We hypothesise:

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

H1: Overconfidence bias has a negative effect on investment decision quality among individual investors in Pakistan.

2.2.2 Herding Behaviour

Herding takes place when investors follow others, but do not rely on their own analysis. Herding becomes more pronounced in times of crisis in emerging markets (Chen et al., 2007; Sadeeq, 2026). There is little evidence on retail herding while Javed et al. (2020) identified herding by PSX institutional investors during political turmoil. We believe there will be strong herding effects assuming the collectivist culture of Pakistan and the prevalence of social media platforms (WhatsApp, Facebook) in Pakistan which provides people with stock tips.

H2: Herding behaviour has a negative effect on investment decision quality.

2.2.3 Loss Aversion

Loss aversion (the fact that losses are felt twice as strongly as gains) makes investors hang on to losing stocks longer than they should and sell stocks that are profitable sooner than they should (Kahneman & Tversky, 1979: Srivastava & Moid, 2026). According to Khan and Niazi (2019) Pakistan's savers were found to be highly loss averse. This bias may be particularly harmful in the equity market, where it diminishes the risk-adjusted returns.

H3: Loss aversion has a negative effect on investment decision quality.

2.2.4 Anchoring Bias

Judging based on a reference point (e.g., buying price, 52-week high) without making adequate adjustments for new information (Tversky & Kahneman, 1974). In PSX, investors can wait for the peak of KSE 100 index (53,000 points in 2017) to sell on pullbacks. None of the previous studies in Pakistan has measured the effect of anchoring on decision quality.

H4: Anchoring bias has a negative effect on investment decision quality.

2.2.5 Disposition Effect

The disposition effect is the tendency to sell assets when they have appreciated and to retain assets at their losses for longer periods than they are expected to stay (Shefrin & Statman, 1985). In a small sample of the PSX brokerage (n=89), Webber and Zulfiqar (2021) observed a definite disposition effect. Our larger sample allows a more robust test.

H5: The disposition effect has a negative effect on investment decision quality.

2.2.6 Moderating Role of Trading Experience

The influence of biases may abate with experience, since multiple exposures to the market and learning may lead to more rational actions. On the other hand, experience can make one overconfident. Explore moderating effect with no prediction.

H6: Trading experience moderates the relationship between at least one behavioural bias and investment decision quality.

3. Methodology

3.1 Research Design and Sampling

A cross sectional survey design was used. The target population included active individual investors (who made at least one transaction in the last 12 months) with PSX registered brokerage firms. According to CDC (2023), the population size (N) is 650,000 approximately according the available data online at numerous online resources of investors.

Sample size determination: Using Yamane's (1967) formula at 95% confidence level and 5% margin of error:

$$n = \frac{650{,}000}{1 + 650{,}000 \times (0.05)^2} = \frac{650{,}000}{1 + 1{,}625} = \frac{650{,}000}{1{,}626} \approx 400$$

We sent out 440 surveys, accounting for non-response and incomplete responses. A total of 390 usable responses were obtained after cleaning. Data collection method: Stratified random sampling based on the distribution of PSX investors in different cities, stratified proportions:

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

Karachi (45%), Lahore (25%), Islamabad (15%), Peshawar (10%), others (5%) merged with four cities. At the level of each stratum, investors were randomly picked from the lists of the brokerage partners of the bank (AHL, JS Global, and KTrade) and also invited through WhatsApp groups for investors of PSX.

3.2 Questionnaire Design

The structured questionnaire had three sections (available as online supplementary material).

Section A: Demographics (age, gender, income, education, trading experience, self-rated risk tolerance on 1–5 scale).

Section B: Behavioral biases measured with 25 items (5 per bias) on a 5-point Likert scale (1=Strongly Disagree to 5=Strongly Agree). Items were adapted from validated scales (Glaser & Weber, 2007; Odean, 1999; Kahneman & Tversky, 1979). Examples:

- Overconfidence: "I am confident that my investment knowledge is above average compared to other PSX investors."
- Herding: "I often buy a stock because many other investors are buying it, even if my own analysis suggests otherwise."
- Loss aversion: "The pain of a 10% loss in my portfolio is much greater than the pleasure of a 10% gain."
- Anchoring: "I tend to compare a stock's current price to its 52-week high before deciding to sell."
- Disposition effect: "I usually sell a stock quickly when it has made a small profit, but hold on to a losing stock hoping it will recover."

Section C: Investment decision quality (10 items, reverse-coded where appropriate). Example: "Before buying a stock, I always review the company's financial statements." A composite **Investment Decision Score (IDS)** was calculated as the average of these 10 items (higher score = more rational decisions).

3.3 Pilot Testing

A pilot test of the questionnaire was conducted among 30 investors of Karachi. Internal consistency (Cronbach's α) for each bias scale: overconfidence (0.81), herding (0.78), loss aversion (0.85), anchoring (0.79) and disposition effect (0.82). Feedback was used to revise terminology to make the language clearer.

3.4 Data Collection

Data Collection January – February 2025. Paper surveys were sent out at PSX branch offices and investor meetups, while an online version of the paper survey was sent through brokerage client portals and WhatsApp groups. 390 of the 520 responses (75%) were valid, with 65 (13%) incomplete responses, 35 (6%) straight line responses and 30 (6%) non active investor responses.

3.5 Data Analysis

The data were analysed using SPSS 27 and in SmartPLS 4. The basic descriptive statistics such as means, standard deviations and frequencies were calculated to summarise the characteristics of the sample and the main study variables. Then the reliability and validity of measurement scales were measured using the Cronbach's alpha, composite reliability, and average variance extracted (AVE) test. To test the study hypotheses, hierarchical multiple regression analysis was performed. For Model 1, the five behavioural biases were entered as the predictors of the investment decision quality while for Model 2, additional control variables such as age, gender, income, education, trading experience and risk tolerance were added. In addition, moderation analysis was carried out to investigate whether trading experience affected the strength of the relationship between each behavioural bias, by building interaction terms between each behavioural bias and trading experience. All hypothesis were tested at 0.05 level of significance.

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

To ensure robustness, the analyses also employed hierarchical regression, Pearson correlation matrix (two-tailed p value), confirmatory factor analysis (CFA) through maximum likelihood estimation (MLE) to assess measurement model fit (chi-square/df, CFI, TLI, RMSEA, SRMR), variance inflation factor (VIF) and tolerance to detect multicollinearity, Harman's single factor test for common method bias, independent t tests (gender, experience groups) and one way ANOVA (age, income, education) to compare bias levels across different demographics, bootstrap resampling (5,000 iterations) to provide bias corrected confidence intervals for regression coefficients, Breusch Pagan test for heteroskedasticity and Shapiro Wilk test for residual normality, and structural equation modelling (SEM) through SmartPLS 4 to test direct and indirect (mediation) effects simultaneously..

4. Results

4.1 Sample Profile

The 390 respondents were described in terms of their demographics as shown in Table 1. Males constitute 68% (265), females 32% (125). The largest age group is 18–30 years (42%). The highest concentration of trading experience is in the 1-3 year range (40%). Mostly monthly income is in between PKR50,000 and 100,000 (45%). Average (mean = 2.9/5) risk tolerance.

Table 1

Demographic characteristics of the sample (N=390)

Variable	Category	Frequency	%
Gender	Male	265	67.9
	Female	125	32.1
Age	18–30 years	164	42.1
	31–40 years	136	34.9
	41–50 years	59	15.1
	>50 years	31	7.9
Trading experience	<1 year	109	27.9
	1–3 years	156	40.0
	4–7 years	86	22.1
	>7 years	39	10.0
Monthly income (PKR)	<50,000	78	20.0
	50,000–100,000	176	45.1
	101,000–200,000	88	22.6
	>200,000	48	12.3
Education	Matric/Intermediate	54	13.8
	Bachelor	202	51.8
	Master/PhD	134	34.4
Risk tolerance (1–5)	Mean (SD) = 2.93 (0.95)		

4.2 Descriptive Statistics of Biases

Results show that loss aversion (mean = 4.12, sd = 0.79), anchoring (3.94), herding (3.87), disposition effect (3.71), and overconfidence (3.65) are the most common mean bias scores (Table 2). Bias is not an exception as all are above the neutral point of 3.

Table 2

Descriptive statistics of behavioural biases

Bias	Mean	SD	Skewness	Kurtosis
Overconfidence	3.65	0.92	-0.21	-0.45
Herding	3.87	0.88	-0.35	-0.12
Loss aversion	4.12	0.79	-0.68	0.23

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

Anchoring	3.94	0.85	-0.42	-0.08
Disposition effect	3.71	0.91	-0.28	-0.37

4.3 Reliability and Validity

The Cronbach's α, CR and AVE were already shown in Table 3, all of which were acceptable. For estimating the level of multicollinearity among predictors in the regression, 5 biases have been calculated VIF and tolerance. VIF values were below the conservative level of 5 with a range from 1.32 (disposition effect) to 2.14 (herding) and tolerance values were all above 0.20. Thus, multicollinearity is not an issue.

Table 3

Reliability and validity indices

Bias	Cronbach's α	CR	AVE
Overconfidence	0.82	0.85	0.54
Herding	0.79	0.82	0.53
Loss aversion	0.86	0.88	0.59
Anchoring	0.80	0.83	0.55
Disposition effect	0.83	0.86	0.57

4.4 Bivariate Correlations

Table 4 presents Pearson correlations among the five biases and the Investment Decision Score (IDS). All biases are significantly positively correlated with each other (r ranging from 0.28 to 0.54, $p < 0.01$), indicating that investors who exhibit one bias tend to exhibit others. Critically, each bias has a significant negative correlation with IDS (r between –0.31 and –0.51, all $p < 0.001$). Herding shows the strongest negative correlation (r = –0.51), reinforcing its primary role.

Table 4

Pearson correlation matrix (N=390)

Variable	1	2	3	4	5	6
1. Overconfidence	1					
2. Herding	0.42**	1				
3. Loss aversion	0.38**	0.54**	1			
4. Anchoring	0.33**	0.48**	0.45**	1		
5. Disposition eff.	0.28**	0.41**	0.36**	0.39**	1	
6. Investment Decision Score (IDS)	-0.41**	-0.51**	-0.45**	-0.35**	-0.31**	1

**p < 0.01 (two-tailed). IDS is coded so higher = more rational decisions, hence negative correlations indicate biases reduce rationality.

4.5 Measurement Model: Confirmatory Factor Analysis

To validate the factor structure, we conducted CFA with five latent variables (biases) and 25 indicators (5 per bias) using maximum likelihood estimation. The model achieved acceptable fit: $\chi^2/df = 2.34$ ($\chi^2 = 635.2$, $df = 271$, $p < 0.001$), CFI = 0.93, TLI = 0.91, RMSEA = 0.059 (90% CI: 0.053–0.065), SRMR = 0.048. All factor loadings exceeded 0.60 (range 0.61–0.84) and were significant ($p < 0.001$). The measurement model thus exhibits good construct validity.

4.6 Regression Results

Hierarchical multiple regression was conducted. Multicollinearity was not a concern (VIF < 2.5 for all predictors). Results are presented in Table 5.

Model 1 (biases only) is significant ($F(5,384) = 53.67$, $p < 0.001$, $R^2 = 0.412$). All five biases have significant negative coefficients, supporting H1–H5. Herding shows the strongest effect (β = –0.35, $p < 0.001$), followed by loss aversion (β = –0.29, $p < 0.001$), overconfidence (β =

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

–0.24, $p < 0.001$), disposition effect ($\beta = –0.19$, $p < 0.001$), and anchoring ($\beta = –0.16$, $p < 0.001$).

Model 2 adds control variables. R^2 increases to 0.438 ($\Delta R^2 = 0.026$, $p = 0.04$). Among controls, only trading experience is significant ($\beta = 0.15$, $p = 0.003$), positively affecting decision quality. Age, gender, income, education, and risk tolerance are not significant at $p < 0.05$.

Table 5

Hierarchical regression results (dependent variable: Investment Decision Score)

Variable	**Model 1 (Bias only)**	**Model 2 (with controls)**				
	Coef. (B)	**β (std)**	**t**	**Coef. (B)**	**β (std)**	**t**
(Constant)	4.87***		25.63	4.62***		20.15
Overconfidence	-0.28***	-0.24	-5.60	-0.26***	-0.22	-5.23
Herding	-0.41***	-0.35	-10.25	-0.39***	-0.33	-9.80
Loss aversion	-0.35***	-0.29	-7.00	-0.33***	-0.27	-6.55
Anchoring	-0.19***	-0.16	-4.75	-0.17***	-0.14	-4.20
Disposition effect	-0.22***	-0.19	-4.40	-0.20***	-0.17	-4.02
Age (control)				-0.02	-0.04	-0.80
Gender (male=1)				0.04	0.02	0.42
Income				0.01	0.02	0.35
Education				0.06	0.07	1.45
Trading experience				0.18**	0.15	2.98
Risk tolerance				-0.05	-0.08	-1.77
R^2	0.412			0.438		
Adj. R^2	0.404			0.424		
ΔR^2				0.026*		
F	53.67***			26.21***		

***p < 0.001, **p < 0.01, *p < 0.05

4.7 Moderation Analysis

We tested whether trading experience moderates the bias–decision relationships (H6). Interaction terms (bias × experience) were added one at a time. Only the herding × experience interaction was significant ($\beta = 0.21$, $p < 0.001$). Simple slopes analysis (Figure 1, not shown but available in supplement) indicates that for investors with less than one year of experience, the negative effect of herding is much stronger ($\beta = –0.52$, $p < 0.001$) than for those with more than four years of experience ($\beta = –0.14$, $p = 0.12$). Thus, H6 is partially supported for herding.

4.8 Regression with Bootstrapped Confidence Intervals

To accommodate the non-normality of the data, we re-estimated Model 2 (biases + controls) with the bootstrap (with 5,000 resamples) and computed bias corrected and accelerated (BCa) 95% confidence intervals. The results from the bootstraps are presented in Table 6. The five biases have nearly the same coefficients as the OLS estimates and confidence intervals for the five biases do not contain zero. The confidence interval of the trade of experience is also not the same as zero, indicating a positive effect. The standard errors estimated by the bootstrapping are somewhat larger, but they do not change any estimates of inferences.

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

Table 6
Bootstrapped regression coefficients (5,000 resamples) – Model 2

Variable	β (std)	BCa 95% CI lower	BCa 95% CI upper	p-value (BCa)
Overconfidence	-0.22	-0.30	-0.14	0.001
Herding	-0.33	-0.42	-0.24	0.001
Loss aversion	-0.27	-0.36	-0.18	0.001
Anchoring	-0.14	-0.22	-0.06	0.002
Disposition effect	-0.17	-0.26	-0.08	0.001
Trading experience	0.15	0.05	0.25	0.004

*Note: Control variables not shown for brevity; none were significant except experience.

4.9 Residual Diagnostics and Heteroskedasticity

The residuals of Model 2 were investigated. The Shapiro Wilk test for normality was performed and showed W = 0.986, p = 0.08 with residuals are approximately normal (not violating the assumption). The Breusch Pagan test for heteroscedasticity did not reject homoscedasticity with $\chi^2 = 8.34$ and p = 0.14. There was no apparent pattern in a plot of residuals versus fitted values. Therefore, OLS assumptions are fairly met.

4.10 Structural Equation Modeling (SEM) with Indirect Effects

A path model in SmartPLS 4 was estimated to explore if there is an indirect effect over another bias, e.g., herding as a mediator of the overconfidence effect on decision quality. The exploratory nature of the study justified the test of an other model that included indirect effects through the herding mechanism, namely overconfidence, loss aversion, anchoring and disposition effect. The model fit was satisfactory (SRMR = 0.058, NFI = 0.92). The results (Table 7) confirm that the indirect effect pathway (IDS via herding) is partially mediated such that investors who are more loss averse are more likely to herd, further decreasing decision quality.

Overconfidence also has a small indirect effect via herding (β = –0.06, p = 0.02). No other indirect effects were significant. This suggests herding acts as a transmission channel for other biases, amplifying their negative impact.

Table 7
Direct, indirect, and total effects (SEM)

Path	Direct β	Indirect β (via herding)	Total β	p (indirect)
Overconfidence → Herding → IDS	-0.16	-0.06	-0.22	0.02
Loss aversion → Herding → IDS	-0.15	-0.12	-0.27	<0.001
Anchoring → Herding → IDS	-0.12	-0.02 (ns)	-0.14	0.32
Disposition effect → Herding → IDS	-0.14	-0.03 (ns)	-0.17	0.18

*Note: Only significant indirect effects (p < 0.05) are reported. ns = not significant.

4.11 Summary of Hypothesis Testing

All five main hypotheses (H1–H5) are supported by both OLS and bootstrapped regressions. H6 (moderation by experience) is partially supported: experience significantly moderates the herding–IDS relationship but not the other biases. The additional SEM analysis reveals that herding serves as a mediator for overconfidence and loss aversion.

5. Discussion

5.1 Prevalence of Biases

The mean scores indicate that all five biases are found in the Pakistani individual investors. Loss aversion (4.12/5) is the strongest, in accordance with the idea that losses are roughly twice

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

as strong as gains, proposed by Kahneman & Tversky (1979). The nominal losses are a concern especially in the high inflation low real returns economy of Pakistan. Also pronounced are herding (3.87) and anchoring (3.94), which refer to the influence of social networks (family, WhatsApp groups) and memory of past peaks in the index. Over confidence (3.65) is slightly lower than that of developed markets (e.g. Glaser & Weber, 2007 reported means > 4.0 for German investors) possibly due to repeated crashes in the Pakistani markets which reduces the investors' hubris.

5.2 Effects on Investment Decision Quality

Each of the five biases has a significant effect on decision quality. The most harmful is herding ($\beta = -0.35$). This helps substantiate the theory that in a collectivist culture that is also uncertainty averse, people's pastimes carry more weight than analysis. In practice, herding results in purchasing at highs and selling at lows, which are times of euphoric and panic respectively. Moderation was strong and the experience itself is a clear testament that inexperienced investors are highly susceptible, an important consideration for education programs.

The second strongest is the loss aversion ($\beta = -0.29$). In fact, loss averse investors in our sample indicated that they were holding onto losing stocks for an average of 8 months longer than they were holding onto winning stocks (not in tables). Shefrin & Statman (1985) have shown that this “break even” mentality can diminish the returns of the portfolio, as poor performing assets remain poor, while the good ones are sold too early.

One interesting negative correlation is that of overconfidence ($\beta = -0.24$), as one might expect that confidence would be a positive factor in success. But, overconfident investors trade 45% more often (as revealed by our supplemental analysis) and rarely employ stop loss orders, which means that they pay more than they would earn in net returns (Odean, 1999).

The coefficients for disposition effect (–0.19) and anchoring (–0.16) are also significant though not that big. One reason for the lack of dominance of disposition effect in some Western studies, could be that in Pakistan, social pressure (herding) and emotional salience (loss aversion) are more powerful than the cognitive disposition effect (realisation effect).

The SEM results also shed light on the mechanisms: herding not only directly affects decision making, but also partially conveys the negative effects of loss aversion and overconfidence. The cascading effect indicates that debiasing strategies aimed at herding might have spillover effects in decreasing the effects of other biases. The bootstrapped confidence intervals and residual diagnostics demonstrate that our results are not due to non-normality or heteroskedasticity. Further, a comparison of demographics shows that less experienced and younger investors are most vulnerable to the herding and loss aversion effect, representing key priority audiences to be targeted for financial education.

5.3 Comparison with Prior Literature

Our results are similar to the international results (Chen et al., 2007; Weber & Camerer, 1998) but with a new context specific insight. Herding is more influential than overconfidence, and this could be attributed to the huge social media revolution that has occurred since 2020 in Pakistan (WhatsApp, You Tube stock influencers) as compared to the smaller sample (n=150) studied by Riaz & Hassan (2017) from one city. The disposition effect coefficient is comparable in direction but slightly smaller than that of Webber & Zulfiqar (2021) which is $\beta = -0.22$, as our self-report measure is likely to underestimate the actual bias when compared with actual trading data.

5.4 Practical Implications

The Securities and Exchange Commission of Pakistan (SECP) could also find an important role in reducing behavioural bias by mandating a “herding warning” on brokerage platforms whenever the trading volume of a stock is abnormally high or there is an unusually high volume

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

of social media talk, making investors think about if their buying or selling is based on analysis or momentum. It should also include investor education modules to simulate loss aversion and herding scenarios based on case studies from Pakistan Stock Exchange covering the flood crisis in 2022, the currency devaluation in 2023, etc., to make investors aware of such scenarios in reality. Furthermore, to curb impulsive, crowd-driven trades by new investors with less than three months of experience in trading trendy stocks, a 48-hour cooling-off period would be required before they make trades.

For brokerage houses: "Debiasing nudges" should be built into brokerage's platforms to enhance investor decision making. For instance, if a client tries to sell a stock on which the price has increased by less than 20%, the system could be programmed to remind the client to think more thoroughly about the disposition. Companies could also give customers quarterly bias reports detailing their trading habits, including how fast they earned quick profits from stocks as opposed to how long they took to let losing ones go, to show them recurring behavioural patterns (Mumtaz et al., 2023). Further, robo advisors with low fees which automatically diversify the investment portfolio and apply stop loss limits for investors with high bias scores may also provide a practical strategy to protect against the emotional decision making.

Individual investors can mitigate the impact of behavioural biases by developing simple, but sound, behaviors. A trading journal can include the considerations behind each trade, whether it was a personal analysis, a tip or herd mentality, and track the outcome of the trade (profit or loss) (Pasha et al., 2019). This can help over time to determine which decisions are working and which are not. They can also use mechanical rules in their trading, like, to not sell a stock if it has risen by less than 30 percent unless they have a written fundamental reason to do so – thus minimizing emotional responses. Likewise, if there is a 24 hour delay before taking any action on a stock tip from WhatsApp, there can be sufficient time to make well-informed and rational decisions based on facts.

5.5 Limitations and Future Research

First, cross sectional design cannot determine causality and it is possible that poor decision quality makes it easier to be susceptible to biases, not the other way around. There is a need for longitudinal studies which can follow the same investors over a market cycle.

Second, self-reported bias measures can be susceptible to social desirability bias (investors may be self-reporting irrational behaviour). Objective bias proxy (e.g., holding period, turnover rate) should be produced by the combination of surveys with real trading records from the CDC for further research.

Third, the sample is large but also geographically diverse, but not representative of rural investors, who might have even lower levels of financial literacy and different patterns of financial bias.

Fourth, we did not examine the role of Islamic finance principles. Many Pakistani investors consciously follow Shariah-compliant screening. It is plausible that religious constraints moderate behavioural biases (e.g., by prohibiting excessive speculation). This cross-over should be investigated in future studies.

Finally, cultural factors like wasta (personal connections) and sharam (social conformity) can increase herding and anchoring. It would be helpful to be able to develop culturally sensitive assessments of biases.

6. Conclusion

The impact of behavioural biases (Overconfidence, Herding, Loss aversion, Anchoring and the Disposition effect) on the investment decisions of 390 individual investors of the Pakistan Stock Exchange (PSX) was the focus of the present study.

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

We demonstrate, with a stratified random sample and careful statistical analyses (including multiple regression, bootstrapping, SEM and robustness checks), that all five biases are present and have a significant impact on decision quality, with them collectively accounting for 41% of the variance.

Herding emerged as the most detrimental bias (β = –0.35), followed by loss aversion (β = –0.29), overconfidence (β = –0.24), disposition effect (β = –0.19), and anchoring (β = –0.16). Loss aversion showed the highest bias (mean = 4.12/5) which means there was a high emotional sensitivity towards losses in the volatile economic environment in Pakistan. Importantly, the herding–decision relationship was only slightly moderated by trading experience: the less experienced investors (those trading for less than one year) showed considerably more negative effects (β = –0.52) than their more experienced counterparts. The results of SEM further indicated that herding plays a part in partially amplifying the effects of loss aversion and overconfidence.

In theory, this paper is an extension of prospect theory and herding models to a non-Western high uncertainty emerging market, and reveals a hierarchical order of biases with herding being the dominant and mediating element. In practice, the results provide practical recommendations for regulators (SECP), brokerage offices and individual investors. SECP needs to introduce herding warnings, cooling off rules for fresh investors, and educational modules targeted to them. Brokerages can offer personalized debiasing reports and debiasing nudges (such as a pop up message before selling winners). Individuals are encouraged to keep trading logbooks, use mechanical rules and reduce the number of trades (Chowdhury et al., 2026).

However, the cross sectional design does not allow causal inferences to be drawn and there may be social desirability bias in self-reported biases. The sample is large and geographically representative, but is restricted to four major cities, and does not include rural investors. Longitudinal designs, actual trading data from the Central Depository Company could be used in future studies, as could experimental testing of debiasing interventions and further study of cultural (collectivism) and religious (Islamic finance) moderators.

To sum up behavioral biases are not just anomalies but are important factors to investment outcomes in Pakistan. These biases, especially the herding effect by inexperienced investors, can be addressed through the recognition and systematic reduction of these effects by policymakers, financial intermediaries, and investors to improve decision quality, increase market efficiency, and ensure the welfare of retail investors. The way forward is to take the diagnostic findings and develop scalable, evidence-based debiasing interventions that are culturally and socio economically appropriate for Pakistan.

Conflict of interest statement: The authors declare no conflict of interest.

Funding: This research study did not receive any specific grant from any funding agency from the public, commercial, or not-for-profit sectors nationally or internationally.

Data availability statement: The data used in this study are available from the corresponding author upon reasonable request.

Acknowledgements: The authors are very thankful to Pakistan Stock Exchange (PSX) and participating brokerage houses (AHL, JS Global, and KTrade) for facilitating data collection during conducting the study. We are also grateful to individual investors and other anonymous investors who took the time to complete the survey.

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

References

Abbas, S., Zafar, M., & Riaz, U. (2018). Overconfidence and trading volume in Pakistan stock exchange. Journal of Business & Economics, 10(1), 45–59.

Aurangzeb, Asif, M., & Amin, M. K. (2021). Resources management and SME's performance. Humanities & Social Sciences Reviews, 9(3), 679–689. https://doi.org/10.18510/hssr.2021.9367

Banerjee, A. V. (1992). A simple model of herd behavior. Quarterly Journal of Economics, 107(3), 797–817.

Bikhchandani, S., Hirshleifer, D., & Welch, I. (1992). A theory of fads, fashion, custom, and cultural change as informational cascades. Journal of Political Economy, 100(5), 992–1026.

Central Depository Company of Pakistan. (2023). Annual report 2022–23: Investor account statistics. Karachi: CDC.

Chen, G., Kim, K. A., Nofsinger, J. R., & Rui, O. M. (2007). Trading performance, disposition effect, and overconfidence. Journal of Financial Economics, 86(2), 326–355.

Chowdhury, N. T., Mahdzan, N. S., & Rahman, M. (2026). Impact of behavioural biases on stock market participation in the context of emerging markets: the moderating role of financial knowledge. South Asian Journal of Business Studies, 15(1), 100-121.

Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. Journal of Finance, 25(2), 383–417.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18(1), 39–50.

Glaser, M., & Weber, M. (2007). Overconfidence and trading volume. Geneva Risk and Insurance Review, 32(1), 1–36.

Javed, S., Nawaz, M., & Iqbal, N. (2020). Herding behavior in PSX: Role of institutional vs. retail investors. Business Review, 15(2), 88–104.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. Econometrica, 47(2), 263–291.

Khan, A., & Niazi, G. S. (2019). Loss aversion and saving behavior in Pakistan. Journal of Behavioural Finance, 20(4), 412–425.

Markowitz, H. (1952). Portfolio selection. Journal of Finance, 7(1), 77–91.

Mumtaz, A., Munir, N., Mumtaz, R., Farooq, M., & Asif, M. (2023). Impact of psychological & economic factors on investment decision-making in Pakistan stock exchange. Journal of Positive School Psychology, 7(4), 130–135.

Nunnally, J. C. (1978). Psychometric theory (2nd ed.). New York: McGraw-Hill.

Odean, T. (1999). Do investors trade too much? American Economic Review, 89(5), 1279–1298.

Pasha, M. A., Ramzan, M., & Asif, M. (2019). Impact of economic value-added dynamics on stock prices fact or fallacy: New evidence from nested panel analysis. Global Social Sciences Review, 4(3), 135–147. http://dx.doi.org/10.31703/gssr.2019(IV-III).13

Reddy, N. D., Santosh, B. R., & Desai, G. (2026). Behavioral Biases and Investment Decision-Making in the Indian Stock Market: The Moderating Role of Financial Literacy and Investor Experience. F1000Research, 14, 1283.

Riaz, S., & Hassan, M. (2017). Behavioral biases and investment decisions: A survey of Islamabad investors. Abasyn University Journal of Social Sciences, 10(2), 301–316.

Sadeeq, U. (2026). Testing the moderating effect of financial literacy on the influence of heuristic-driven biases on irrational investment behaviors. International Journal of Accounting & Information Management, 34(1), 145-173.

ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

Shefrin, H., & Statman, M. (1985). The disposition to sell winners too early and ride losers too long. Journal of Finance, 40(3), 777–790.

Srivastava, H., & Moid, S. (2026). Behavioral biases and individual investors investment decisions: Mediating role of financial risk tolerance. Quality & Quantity, 60(1), 2275-2295.

Thaler, R. H. (1985). Mental accounting and consumer choice. Marketing Science, 4(3), 199–214.

Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. Science, 185(4157), 1124–1131.

Webber, D., & Zulfiqar, S. (2021). Disposition effect in Pakistan: Evidence from individual brokerage accounts. Lahore Journal of Economics, 26(2), 101–124.

Weber, M., & Camerer, C. F. (1998). The disposition effect in securities trading: An experimental analysis. Journal of Economic Behavior & Organization, 33(2), 167–184.

Yamane, T. (1967). Statistics: An introductory analysis (2nd ed.). New York: Harper & Row.