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BEHAVIOUR BIASES AND INVESTOR INVESTMENT DECISIONS IN PAKISTAN FOREIGN EXCHANGE MARKET

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ABSTRACT

The objective of the study is to examine the relationship between various behavioral biases and individual investor stock market investment decisions in Pakistan's foreign exchange market. The sample size of the study consists of 285 individual investor trades excessively from the last 5 years in Pakistan foreign exchange market. Primary data is collected from the selected sample size through a structured questionnaire. The data is analyzed through Descriptive analysis, Correlation, and Multiple Regression Analysis. The results of the study indicate that overconfidence, loss aversion, self-control and representativeness have a significant positive relationship with investor investment decisions in Pakistan Foreign Exchange Market. However, anchoring and mental accounting have an insignificant relationship with investor investment decisions in Pakistan Foreign Exchange Market.

Keywords: overconfidence, loss aversion, self-control, representativeness, individual investor, investor Decisions

INTRODUCTION

The financial markets have become more competitive over time. In today's financial market there are more players than there were a decade ago. In today's investment market the financial consumer has a wealth of investment options from which to divert his or her savings. The investor is ill-equipped to assess all of the available options to optimize his or her financial well-being. As a result, the individual is forced to use specific judgment processes and is impacted by emotions and psychological factors that help in the decision-making process. Thus, several factors influence the investment selection process leading to constrained rational conduct in which the investor tries to satisfy his or her needs by employing various heuristics and exhibiting behavioral biases (Todd & Gigerenzer, 2003). As a result, collecting deeper insights about the financial consumer's financial investing behavior and how these behaviors relate to the consumer's financial satisfaction is critical to a better understanding of the financial consumer. An individual's ability to effectively manage his or her social and material requirements would necessitate competent monetary resource management. Previous research on people's investment selections and happiness with their financial condition has primarily focused on socioeconomic and demographic factors. Psychographic variables such as individual investor biases have received little consideration. These biases refer to an individual's views and preferences, and while they have been proven to play a significant role in financial investment decisions, their relationship with financial pleasure has not been thoroughly investigated. As a result of using a descriptive approach to how investors make investment decisions the study looked into the patterns of behavior of individual investors and their relationship with financial contentment. Individual investor biases may play a significant impact in influencing individual decision-makers financial satisfaction. Self-control bias, overconfidence bias, and budgeting tendency were all found to be significantly associated with financial satisfaction across the sample. However, under particular control settings reliance on the expert bias, categorization propensity, and socially responsible investing bias were found to be significantly associated with financial satisfaction. The rest of the paper is organized as follows: In section 2 presented the literature review on different behavioral biases and financial satisfaction. Section 3 presents the research methodology. Section 4 presents the data analysis and interpretations. Section 5 presents the discussion's conclusions and future recommendations.

LITERATURE REVIEW

The section summarizes previous research to better understand how behavioral biases influence investment decisions. Chaudhary, (2013) investigated investors' irrational investment decisions are caused by various emotional and cognitive biases in the stock market. For example loss aversion, overconfidence, anchoring, and herd behavior factors influence investors' investment decisions. Baker et al., (2018) analyzed that men are more overoptimistic than females about their investment decision in the stock market. Mughan, (2019) found that personality biases such as extreme confidence and excessive trust have a significant effect on investor investment decisions in the stock market. Parveen et al., (2020) found that investor overconfidence has a significant and positive effect on investment return in the stock market. Ngacha, (2019) revealed a strong positive relationship between over-confidence and investor investment decisions. Kurniawati & Sutrisno, (2019) explored that overconfidence bias has a significant positive impact on investor investment decisions. Baker et al., (2018) found that financial literacy has a significant positive impact on investor investment decisions. Lee & Veld-Merkoulova, (2016) examine that investor investment decision is strongly affected by loss aversion resulting in a lower total share of the portfolio in stock market investment decisions. Loss aversion investors give too much attention to the success of their stock portfolio allowing narrow-minded loss aversion to dominate. Mahina et al., (2017) investigated the impact of loss aversion bias on stock market investment in Rwanda. The market appears to be unsuccessful in keeping equities that lose value in short term. Kumar & Babu, (2018) explore the relationship between gender loss aversion and investment decisions and found that the gender of investors has a significant impact on investor investment decisions.

Robb et al., (2019) found that effective future planning increased financial satisfaction; however, engaging in flexible spending programs the reduction of current spending is negatively correlated with financial satisfaction. Financial behavior comprising saving and cash management is a successful partnership built on financial fulfillment (Mien & Thao, 2015). According to Sahi, (2017) influence over health and finances does not mediate the relationship between demographic, socioeconomic, and financial satisfaction characteristics. Jain et al., (2015) establish the relationship between anchoring and investor investment decision and found that anchoring has positive impacts on professional investors and negative impacts on non-professional investors. Shukla et al., (2020) analyzed that investors use anchoring to determine the types of securities they wish to trade. ul Abdin et al., (2017)anchoring investors have the propensity to rely too much on investors' knowledge for their stock market investment decisions. Lachhwani, (2016)found that cultural difference such as mental accounting bias has significant impacts on investor investment decisions. Mental accounting bias causes investors to evaluate each part of their portfolio independently rather than the overall portfolio. Muehlbacher & Kirchler, (2019) clarified that mental accounting is a series of psychological actions used by individuals to manage financial activities, transactions, assessment, and tracking. According to Frijda, (2017) representativeness bias occurs when new information is processed incorrectly due to a lack of emotional context. To make new knowledge easier to reveal some investors anticipate outcomes that resemble their pre-existing views and policymaking. Shah et al., (2018) explained that representativeness bias has an insignificant effect on investor investment decisions and perceived market performance.

CONCEPTUAL FRAMEWORK

This analysis explores the relationship between overconfidence, loss aversion, self-control, anchoring, mental accounting, and representativeness with investor investment decisions in Pakistan Foreign Exchange Market. The theoretical framework is presented in Figure 1
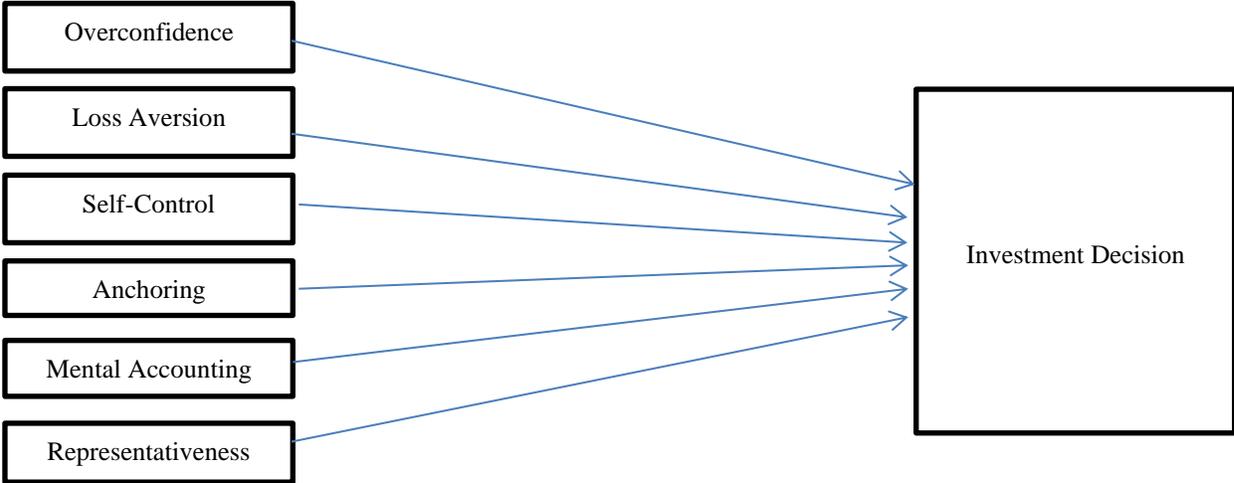

Figure 1: Conceptual Framework

RESEARCH HYPOTHESIS

The following hypothesis is formulated and tested in the study.

H1: Overconfidence has a positive relationship with investor investment decisions.

H2: Loss aversion has a positive relationship with investor investment decisions.

H3: Self-control has a positive relationship with investor investment decisions.

H4: Anchoring has a positive relationship with investor investment decisions.

H5: Mental accounting has a positive relationship with investor investment decisions.

H6: Representativeness has a positive relationship with investor investment decisions.

METHODOLOGY

The study examines the impact of behavioral biases on investor decisions using a sample of 285 investors from the Pakistan foreign Exchange market. The information was collected using a pre-tested questionnaire derived from (Rehan & Umer, 2017). Behavioral biases overconfidence, loss aversion, self-control, anchoring, mental accounting and representativeness, and investor decisions were based on these conceptions based on a 5-point Likert scale.

DEMOGRAPHICS DETAILS

Table 1 provides a demographic profile of investors (respondents) while Table 2 provides the investment profile of investors (respondents).

Table1: Demographic Details of respondents

Demographics Variables	Category	No. of respondents	Percentage (%)
Gender	Male	101	67.3%
	Female	49	32.7%
Marital Status	Married	86	57.3%
	Non- married	64	42.7%
Age	20-30	8	5.3%
	31-40	10	6.7%
	41-50	31	20.7%
	51-60	49	32.7%
	Above 60	52	34.7%
Qualification	Undergraduate	38	25.7%
	Graduate	47	31.3%
	Postgraduate	52	34.7%
	Any other	13	8.7%
Occupation	Student	38	25.7%
	Businessmen	56	37.7%
	Salaried Personnel	38	25.3%
	Retired/ Any other	18	12%
Annual Income	Under RS 30,000	24	16%
	RS 31,000-60,000	43	28.7%
	RS 61,000-90,000	31	20.7%
	Above RS 90,000	52	34.7%

Table 1 shows the demographic details of the respondents. The male respondents were 67.3 % while the female respondents were 32.7 % of the total sample size so the proportion of men investors in the Pakistan foreign exchange market is higher than women investors. However, the proportions of married individual investors are 57.3% and non-married individuals investors are 42.7% in their respective group. Furthermore, individual experience in the stock market rises with age individuals above 50 and 60 years

of age the proportion of their investment is 32.7% and 34.7% in their respective groups. Likewise, post-graduate, respondents learn more about different finance courses and have depth experience in the stock market so these individuals invest more in the stock market relative to graduate respondents individual with post-graduate qualifications the proportion of their investment is 34.7% highest in their respective group.

INVESTMENT DETAILS

Table 2: Investment Details of the respondent

Investment Details	Category	No. of respondents	Percentage (%)
Experience in Investment/ trading	Less than a year	0	0%
	3-5 years	23	15.3%
	5-7 years	57	38%
	7-10years	70	46.7%
Course attended in PFEM	Yes	72	48%
	No	78	52%
	Capital appreciation	22	14.7%
Objective of Investment	Good returns	44	29.3%
	Tax Benefits	48	32%
	All of the above/ Any Other	36	24%
Placement of Money at PFEX	Dividend	72	52%
	Capital Gain	78	42%
	Other	0	0%

Table 2 shows the investment information details of respondents. Investors having 5-7 years of experience in the stock market are 38% of the total sample size. Similarly, investors with more than 7 years of experience in the stock market are 46.7% show an upward investment trend this scenario clearly shows that investors with more trade experience invest more in the stock market. However, among investors who attend any financial courses in Pakistan foreign exchange market are 48% while investors who do not attend any financial courses in Pakistan foreign exchange market 52% representing that half individual of the sample size know about stock market trading in Pakistan foreign exchange market. The objective of investment indicates that 29.3 % of respondents invest in goods having good returns, while 48% of respondents invest for tax benefits. The portfolio of investor investment indicates that 52% of the individual is interested to invest their fund in Dividends while 42% % of the individual is interested in capital gain.

RESULTS

Descriptive Analysis

Descriptive data analysis is conducted to assess the normality and reliability of the data. The descriptive-analytical findings are reported in Table 3.

Table 3 Descriptive Analysis of Behavioural Factors

Variables	Cronbach Alpha	Mean	St. Deviation	Skewness	Kurtosis
Overconfidence	.702	3.5000	1.46892	-.747	-.829
Loss Aversion	.756	3.9067	1.05134	-.654	-.478

Self-control	.708	3.3600	1.24394	-.247	-1.027
Anchoring	.756	3.9067	1.05134	-.654	-.478
Mental Accounting	.596	3.16000	1.479525	-.280	-1.339
Representativeness	.702	3.5000	1.46892	-.747	-.829
Investor Decision	.736	1.8400	.72427	.683	.552

Table 3 indicates that Kurtosis values ranged from -.478 to -1.339. These values are lowest for loss aversion with the mean and standard deviation value (mean = 3.9067, SD=1.05134), and highest for mental accounting (mean = 3.160, SD = 1.479). In comparison, the maximum value for Skewness (-.747) for overconfidence and representativeness (Mean = 3.50, SD = 1.468) and (Mean = 3.50, SD = 1.468) respectively.

Moreover, table 3 presented that Cronbach's alpha values for loss aversion and anchoring are the highest value in their respective group (α = 0.756, M = 3.906, SD = 1.0513) followed by investor decisions (α =.736, M = 1.840, SD =.724), Self-control (α =.708, M = 3.360, SD = 1.243), overconfidence and representativeness both have the same value (α = .702, M = 3.50, SD = 1.468), and mental accounting have (α = .596, M = 3.160, SD = 1.479. All the values of Cronbach's alpha are higher than 0.70 except mental accounting so we can suggest that the reliability of the model is achieved (Purwanto & Sudargini, 2021).

Correlations Analysis

To determine the relationship between the variables bivariate correlations are calculated. The results are presented in Table 4.

Table 4: Correlation Analysis

Variables	**OR**	**LA**	**SI**	**AN**	**MA**	**RP**	**ID**
Overconfidence	1						
Loss Aversion	-.287**	1					
Self-control	.165*	.416**	1				
Anchoring	-.287**	1.000**	.416**	1			
Mental Accounting	.698**	.312**	.519**	.312**	1		
Representativeness	1.000**	-.287**	.165*	-.287**	.698**	1	
Investor Decision	.334**	.077	.258**	.077	.312**	.334**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 4 shows that the highest correlation (r = 1.000) was between the variables anchoring (M = 3.906, SD = 1.0513) and loss aversion (M = 3.906, SD = 1.0513). Representativeness (M = 3.50, SD = 1.468) and overconfidence (M = 3.50, SD = 1.468). In addition, the lowermost correlation (r =-.287) was between loss aversion and overconfidence followed by anchoring and overconfidence then representativeness, and loss aversion then representativeness and anchoring. As the correlations are significantly higher than 0.80 in absolute value there are likely to be some statistical issues of multicollinearity (Purwanto & Sudargini, 2021).

Multiple Regression Analysis

Multiple regression analysis is performed to analyze the impacts of independent variables on the dependent variable of the study. The results are presented in Table 5.

Table 5: Multiple Regression Analysis

Model	Coefficient	p-value
Constant	.358	.346
Overconfidence (OC)	.192	.000
Loss Aversion (LA)	.130	.019
Self-control (SC)	.114	.039
Anchoring (AN)	.140	.091
Mental Accounting (MA)	-.100	.232
Representativeness (RP)	.248	.002

$R^2 = 0.171$, Adjusted $R^2 = 0.148$, F-value = 7.461

The results of the regression analysis suggest that independent variables (i.e. overconfidence, loss aversion, self-control, anchoring, mental accounting, and representativeness) describe 17.1% of the variance in the dependent variable ($R^2 = 0.171$, F-stat=7.461, $p<.05$). The overall model fit significant positive. However, the results of mental accounting ($\beta=-.100, p>.05$) and anchoring ($\beta=0.140, p>.05$) are found statistically insignificant.

DISCUSSION

The study examines the relationship between different behavioral biases such as overconfidence, loss aversion, self-control, anchoring, mental accounting, and representativeness with investor investment decisions in Pakistan Foreign Exchange Market. Overall the results suggest that these behavioral biases have a significant relationship with investor investment decisions. According to previous studies, the results show that overconfidence, loss aversion, self-control and representativeness have a significant positive relationship with investor investment decisions. However, the results further show that anchoring and mental accounting biases have an insignificant relationship with investor investment decisions.

CONCLUSION

The first hypothesis of the study suggests that overconfidence behavior bias has a significant positive relationship with investor investment decisions in the stock market. The results of the study indicate that overconfidence bias has a statistically significant relationship with investor investment decisions in the stock market ($\beta=.192, p<.05$). The second hypothesis of the study suggests that loss aversion behavior bias has a significant positive relationship with investor investment decisions in the stock market. The results of the study indicate that loss aversion behavior bias has a statistically significant relationship with investor investment decisions in the stock market ($\beta = .130, p<.05$). The third hypothesis of the study suggests that self-control behavior bias has a significant positive relationship with investor investment decisions in the stock market. The results of the study indicate that loss self-control behavior bias has a statistically significant relationship with investor investment decisions in the stock market ($\beta=.114, p<.05$). The fourth hypothesis of the study suggests that anchoring behavior bias has a significant positive relationship with investor investment decisions in the stock market. The results of the study indicate that anchoring behavior bias has a statistically insignificant relationship with investor investment decisions in the stock market ($\beta = .140, p>.05$). The fifth hypothesis of the study suggests that mental accounting behavior bias has a significant positive relationship with investor investment decisions in the stock market. The results of the

study indicate that mental accounting behavior bias has a statistically insignificant relationship with investor investment decisions in the stock market (β=-.100, p>.05). The sixth hypothesis of the study suggests that representativeness behavior bias has a significant positive relationship with investor investment decisions in the stock market. The results of the study indicate that loss representativeness behavior bias has a statistically significant relationship with investor investment decisions in the stock market (β = .248, p<.05).

SUGGESTIONS FOR FUTURE RESEARCH

Future studies may examine the relationship and importance of behavioral biases on investor investment decisions in the real estate and equity markets of Pakistan.

REFERENCES

Baker, H. K., Kumar, S., Goyal, N., & Gaur, V. (2018). How financial literacy and demographic variables relate to behavioral biases. *Managerial Finance*.

Chaudhary, A. K. (2013). Impact of behavioral finance in investment decisions and strategies–a fresh approach. *International Journal of Management Research and Business Strategy*, *2*(2), 85–92.

Frijda, N. H. (2017). *The laws of emotion*. Psychology Press.

Jain, R., Jain, P., & Jain, C. (2015). Behavioral biases in the decision-making of individual investors. *IUP Journal of Management Research*, *14*(3), 7.

Kumar, A. A., & Babu, M. (2018). *Effect Of Loss Aversion Bias On Investment Decision: A Study*.

Kurniawati, D., & Sutrisno, S. (2019). The Benchmark Of Investor Decisions To Invest In The Initial Public Offering (IPO). *Riset Akuntansi Dan Keuangan Indonesia*, *4*(2), 166–176.

Lachhwani, H. (2016). Illuminating the Influence of Demographic Variables on Investment Biases. *Lachhwani, H (2016), Illuminating the Influence of Demographic Variables on Investment Biases, International Journal of Advanced Research in Management, Engineering and Technology*, *1*(1), 54–60.

Lee, B., & Veld-Merkoulova, Y. (2016). Myopic loss aversion and stock investments: An empirical study of private investors. *Journal of Banking & Finance*, *70*, 235–246.

Mahina, J. N., Muturi, W. M., & Memba, F. S. (2017). Influence of Loss Aversion Bias on Investments at The Rwanda Stock Exchange. *International Journal of Accounting, Finance and Risk Management*, *2*(5), 131–137.

Mien, N. T. N., & Thao, T. P. (2015). Factors affecting personal financial management behaviors: Evidence from Vietnam. *Proceedings of the Second Asia-Pacific Conference on Global Business, Economics, Finance and Social Sciences (AP15Vietnam Conference)*, *10*(5), 1–16.

Muehlbacher, S., & Kirchler, E. (2019). Individual differences in mental accounting. *Frontiers in Psychology*, 2866.

Mughan, S. (2019). Fine and Fee Revenues, Local Courts and Judicial Elections: The Role of Financial and Political Institutions in Extractive Revenue Practices in US Cities. *Local Courts and Judicial*

Elections: The Role of Financial and Political Institutions in Extractive Revenue Practices in US Cities (May 22, 2019).

Ngacha, S. W. (2019). *Influence of Behavioral Biases Influencing Individual Investments Decisions by University Students': A Case of United States International University-Africa*. United States International University-Africa.

Parveen, S., Satti, Z. W., Subhan, Q. A., & Jamil, S. (2020). Exploring market overreaction, investors' sentiments, and investment decisions in an emerging stock market. *Borsa Istanbul Review*, *20*(3), 224–235.

Purwanto, A., & Sudargini, Y. (2021). Partial Least Squares Structural Equation Modeling (PLS-SEM) Analysis for Social and Management Research: A Literature Review. *Journal of Industrial Engineering & Management Research*, *2*(4), 114–123.

Rehan, R., & Umer, I. (2017). Behavioral biases and investor decisions. *Market Forces*, *12*(2).

Robb, C. A., Chatterjee, S., Porto, N., & Cude, B. J. (2019). The influence of student loan debt on financial satisfaction. *Journal of Family and Economic Issues*, *40*(1), 51–73.

Sahi, S. K. (2017). Psychological biases of individual investors and financial satisfaction. *Journal of Consumer Behaviour*, *16*(6), 511–535.

Shah, S. Z. A., Ahmad, M., & Mahmood, F. (2018). Heuristic biases in investment decision-making and perceived market efficiency: A survey at the Pakistan stock exchange. *Qualitative Research in Financial Markets*.

Shukla, A., Rushdi, D., Jamal, N., Katiyar, D., & Chandra, R. (2020). Impact of behavioral biases on investment decisions 'a systematic review.' *International Journal of Management*, *11*(4).

Todd, P. M., & Gigerenzer, G. (2003). Bounding rationality to the world. *Journal of Economic Psychology*, *24*(2), 143–165.

ul Abdin, S. Z., Farooq, O., Sultana, N., & Farooq, M. (2017). The impact of heuristics on investment decision and performance: Exploring multiple mediation mechanisms. *Research in International Business and Finance*, *42*, 674–688.