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Analysis Of Cognitive Biases in Investment Decision-Making - An Investor Perceptive

V. Jalender Reddy¹, Dr. K. Sivasubramania Deepak²

¹Research Scholar, Annamalai University, Annamalai Nagar, Chidambaram, Tamil Nadu & Assistant Professor, Department of Management studies, Vardhaman College of Engineering, Shamshabad, Hyderabad. Telangana. jalender7@gmail.com, 10009-0002-8956-332X

²Assistant Professor (Deputed), Department of Business Administration, Annamalai University, Annamalai Nagar, Chidambaram, Tamil Nadu.

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ABSTRACT

Purpose

The main objective of this study is to examine how different types of biases affect investment choices. Investment choices play a crucial role in an individual's financial well-being and long-term wealth accumulation. However, these decisions are often not purely rational and are significantly influenced by a range of behavioral biases. Behavioral finance, a field that merges psychology with traditional finance, seeks to understand how cognitive and emotional factors affect investors' decision-making processes.

Design/methodology/approach

This study aims to examine the different types of behavioral biases that affect investment choices. By identifying and analyzing these biases, we can better comprehend their impact on individual and market-level behaviors. Ultimately, this research seeks to provide insights that can help investors recognize their biases and adopt more rational investment strategies, enhancing their potential for financial success.

Findings

Many investors overestimate their knowledge and ability to predict market movements, leading to excessive trading and increased risk-taking. Studies show that overconfident investors often underperform due to poor decision-making. Investors tend to fear losses more than they value gains, which can result in holding onto losing investments longer than advisable (the disposition effect). This behavior can lead to suboptimal portfolio management. Investors often rely too heavily on initial information or specific price points when making decisions, even if that information becomes irrelevant. This can affect buy/sell decisions and lead to missed opportunities.

Originality

These biases can lead to suboptimal investment decisions, such as excessive trading, failure to diversify, or holding onto losing investments for too long. Suboptimal outcomes of investment are triggered from the irrationality of investor decisions. The irrationality is due to psychic issues. Limited research was carried out due to the lack of awareness and focus in the behavioral and prospect biases. For improving the awareness and to educate investors a clear study is required for strategic investment planning and optimizing the outcomes of investments.

Research limitations/implications

Many studies may rely on small or homogenous samples, limiting the generalization of findings across different demographics, such as age, gender, socioeconomic status, and geographical location. Research often depends on self-reported data from investors, which can be influenced by social desirability or lack of self-awareness. This can lead to inaccuracies in understanding the extent of biases. Establishing causal relationships between cognitive biases and investment decisions can be challenging. Many studies can only demonstrate correlation, leaving the underlying mechanisms unclear.

Practical implications

The present study is framed with two broad sets of dependent and independent variables, two sets of independent variables i.e. Behavioral Biases and Prospect Biases and each of these independent variables are chosen with four biases each and single dependent variable i.e. Before making an investment, researchers must determine whether independent factors have an effect on the dependent variable. Each of these variables is framed with four questions each. The responses are analyzed with SPSS

Social implications

The expected optimal return is possible with the awareness in investors where decision making strategies will be improved and psychological errors will be mitigated. This behavior is going to build much value for the bull market, during the bear market, herding can exacerbate sell-offs, due to which a steep decline in a stock price will take place. To avoid the adverse impact of herding investors should make independent decisions based on fundamentals and their own analysis.

Keywords: Behavioral Biases, Investment Decisions,

1. INTRODUCTION:

Investment decisions are expected to be rational but in actual investors will get influenced by different issues which arise due to the situations and behavioral aspects to deviate from rationality. The behavioral aspects are very influential in decision making. The perceived decision making is going to fluctuate due to the different behavioral aspects which include behavioral biases and prospect biases. All the investment decisions are carried out by interpreting the information to make the decisions, during the analysis the systematic errors predictable to influence the analysis process or investment decisions are called behavioral biases. These biases will influence the people investment decisions causing the irrational behavior. Irrationality will be affecting many ways to result suboptimal outcomes. Most of the investors will follow very efficient and lengthy analytical methods to understand the present and to forecast the future, but while applying their analysis to work on, people will deviate from their actual plan because of behavioral biases. Sometimes it may be positive to return the expectations but mostly it is proved adversely. This is expected to prevail in common among the investor group. The common biases are- Sticking to previous best stock performer, waiting for long time to have expected results, investing based on locality and familiarity with company location, following other investors and so on. These are some of the biases encountered in stock investors. The present study is focused on some of these biases.

An investment decision, also known as a capital budgeting decision, is the process of allocating financial resources to various assets or projects with the goal of generating future returns.

This crucial aspect of financial management involves assessing potential investments to ensure that funds are utilized effectively and strategically.

New Investment Decisions: When a business chooses to grow by establishing a new location in another area, it is committing to a major investment choice.

Term Investment Decision: Opting to invest in long-term projects like research and development for innovative products falls under this category.

Investment Appraisal Decisions: Evaluating the possible profits and dangers linked to investing in a specific project is an essential part of making informed investment choices.



2. REVIEW OF LITERATURE:

Behavioral biases

Pughethaa, et. all (2024), Study investigates the influence of cognitive biases on investment behavior of people in Coimbatore. Study focuses on overconfidence, anchoring, loss aversion, confirmation and herding behavior of 120 investors aged 18 to 29. Study formed that anchoring is most significant to influence young investors. After the anchoring overconfidence and loss aversion were very significant. Based on the respondent's confirmation bios and heading behavior is insignificant to deal with investment behavior.

Ayu et. all (2024). This research is a quantitative study of Lambung Manghurat University students at Faculty of economics and business. The study performed with primary data using multiple linear regression model and found the heuristic behavior, risk perception herding behavior is influencing investors. With the data collected it is clear that the emotions and egos are having a huge impact on investment decisions of selected category and concluded that it is quite difficult task to make investment decisions.

Vangala Jalender Reddy et all. (2023), The generalized study organised with 283 respondents to identify the different biases that is going to focus on investment decisions of youngsters. The cognitive behavior of all the investors due to the different biases is found to be disadvantages for the investment. The behavioral biases that arise from different factors the selected biases for the study were mental accounting, Gambler fallacy, regrets, loss aversion etc.

Muhammad et all (2024), The millennial capital market investors are going to be analysed in this study with respect to the cognitive resonance bias, over confidence bias, and endowment bias. The study performed with 128 respondents in Banyumus Regency. Structured equation modelling is used to identify the impact of all the selected biases. The result of study disclosed that cognitive resonance by as over confidence and endowment bias have an effect on investment decisions. Heading bios and confirmation bias do not affect investment decisions. The main conclusions derived from the studies were to focus on the information circulating in different channels and not to respond immediately without having an appropriate confirmation of the information.

Yuyang and Wang. (2023), The study focused on economics, management and political sciences to identify the impact of behavioral biases that is going to influence the decision making of all the investors associated with the information flow. The study focused on main biases that is influence in the investment decision selectively loss aversion, endowment bias, framing bias and over confidence bias. The study identify that the skill set of an individual who is using his knowledge is going to play very crucial role and reducing the influence of biases.

Loss aversion

Sudha et al. (2024) In their investigation of "Loss Aversion," showed that people are more affected by possible losses than by profits. Their study of Indian stock market investors yields contradictory results about the existence of loss aversion and how it affects investment decisions. Using primary data assessed using a variety of statistical techniques, they looked at aspects like gender, wealth, and risk perception and came to the conclusion that loss aversion has a major impact on investing decisions, especially by gender.

Pratiwi et al. (2024) Examine the effects of loss aversion, optimism bias, and representativeness bias on Pontianak City investors' stock investing choices. The study discovers strong links between these cognitive biases and investing behavior using data from the Indonesian Central Securities Depository. Loss aversion has a substantial impact, while optimism and representativeness biases do not exhibit notable individual impacts, which advances our knowledge of the psychological aspects of investing behavior.

Jia and Zhou (2023) claim that when faced with possible large losses, investors' loss aversion causes them to act irrationally. They pinpoint a number of determinants that impact the level of loss aversion, including age and gender. The study comes to the conclusion—based on survey analysis—that investors indeed experience loss aversion, but to varied degrees, depending on their personal traits.

Yifeng and Tian (2024) explore the psychology of investors, looking at prospect theory, market anomalies, and loss aversion as important aspects of financial decision-making. The study highlights how investor judgment is skewed by loss aversion, which intensifies the dread of losses over the appreciation of profits. The study emphasizes the significance of comprehending these psychological aspects in order to support well-informed financial decisions by examining market anomalies and their impact on conventional investment strategies.

Rafandito et al. (2023) Examine how behavioral biases, particularly overconfidence, herding, and loss aversion, interact with financial literacy among young investors on Java Island. According to their analysis, which was done using the Partial Least Square approach, financial literacy has no bearing on decisions, although overconfidence improves them and herding behavior has the opposite effect. It's interesting to note that in this group, loss aversion has no bearing on investing decisions.

Endowment bias

N Sathya and R. Gayathir (2024) questioned conventional finance theories that presume rational behavior by examining the widespread impacts of behavioral biases in investment decisions. Key biases like herding, loss aversion, and overconfidence are highlighted in their research analysis, which also explains how these skew investor judgment and cause market inefficiencies. The paper emphasizes how crucial it is to identify these biases in order to create successful treatments and instructional plans, linking the fields of psychology and finance for future study.

Dr. R., Amudha, and R. N. Chander (2024) Examine the effects of different behavioral biases on the decision-making processes of individual investors. Their 201-person quantitative analysis finds strong correlations between demographic characteristics and biases including loss aversion and confirmation bias. The results highlight the need to address these biases in order to promote more logical investment choices, providing guidance to investors, financial advisors, and legislators on how to enhance financial literacy and decision-making techniques.

Aarju et al. (2024) Examine how behavioral biases such as risk aversion, herding, disposition effect, and overconfidence affect investment choices. Using a sample of 338 respondents, they discover that herding has no discernible effect on judgments, but overconfidence and risk aversion do. The study also shows that these biases can be lessened by increased financial literacy, implying that better financial education can result in better investing decisions.

Vibhuti et al. (2024) Investigate qualitatively how investing decisions are impacted by behavioral biases. They draw attention to prevalent prejudices such as loss aversion and herd mentality, highlighting the necessity of awareness in order to combat illogical actions. Their review of the literature aims to make the connection between earlier research and real-world applications, promoting methods to improve financial results by comprehending these psychological factors more thoroughly.

K Arjun Goud et al. (2024) explore the fundamental ideas of behavioral finance, looking at how investment behaviors are influenced by emotions and cognitive biases such loss aversion and herding. They challenge the notion that markets are rational and contend that these irrational tendencies lead to market inefficiencies. The study emphasizes how greed and fear may affect financial decisions and how crucial it is to educate investors in order to promote better financial market decision-making.

Isolation

Dr. R. Amudha and R. N. Chander (2024) draw attention to the growing importance of behavioral finance in comprehending the psychological foundations of financial choices. Their research examines the frequency and impact of biases among individual investors, including confirmation bias, loss aversion, herding behavior, overconfidence, and regret aversion. They employ a quantitative approach using data from 201 respondents and a variety of statistical studies to identify correlations between investment features, demographic factors, and behavioral biases. According to their research, these biases are pervasive and have strong correlations with yearly income and investing patterns. In order to improve investor decision-making quality and provide useful information for financial advisors and policymakers, the study highlights the significance of identifying and resolving these biases.

Shahid et al. (2023) Examine in greater depth how behavioral biases affect investing decisions, emphasizing the moderating role of financial knowledge. Their analysis of investors on the Pakistan Stock Exchange identifies biases such as overconfidence and herd mentality, which lead to less-than-ideal investing choices. The results demonstrate that increasing financial literacy is necessary to enhance the caliber of decision-making, as informed investors are better equipped to manage the challenges posed by these biases.

Yuyang and Wang (2023) emphasize doable tactics to combat behavioral biases such as overconfidence and loss aversion. Their research highlights the value of getting a variety of information, evaluating oneself, and seeking professional guidance. To encourage logical decision-making, they support frequent portfolio evaluations and the visualization of possible outcomes. Investor performance and satisfaction can be greatly enhanced by overcoming these biases.

Umar et al. (2024) Examine the availability bias influenced by heuristics and how it affects investors' choices in the Delhi-NCR area. Their results support the heuristic and biases theory, which postulates that investors have limited rationality, by confirming that availability prejudice plays a role in irrational investment decisions. The knowledge of how cognitive biases impact financial decisions is enhanced by this study.

Framing effect

Zihan and Xu (2024)explore the core ideas of behavioral finance, looking at how investors' judgments are influenced by biases such as loss aversion and framing effects. They emphasize how important it is to comprehend these psychological aspects in order to promote more logical investing practices in intricate marketplaces.

Simona et al. (2023) Examine how incidental emotions and framing effects interact to influence investing decisions in order to further the study of behavioral biases. According to their experimental research, risk choices are greatly influenced by emotional states as well as the framing of investment possibilities. The findings emphasize the need for a comprehensive approach to understanding investor behavior by indicating that emotions such as enthusiasm and anxiety can change the dynamics of decision-making.

Jianzhong and Chen (2024) highlight how cognitive biases influence financial decisions in order to question conventional financial theories. Their study highlights important phenomena such as the framing effect and loss aversion, demonstrating how these biases result in less-than-ideal investment behaviors. To improve investing techniques, they urge more research on cross-cultural assessments and cumulative behavioral effects.

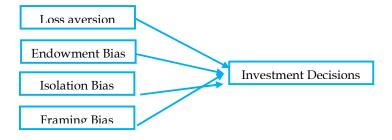
Andreas et al. (2024) Examine the disposition effect and suggest that not all choices made while subjected to this bias are illogical. They stress the importance of personal preferences in decision-making, including tolerance and target levels. The paper illustrates how context can affect the rationality of investment decisions by presenting a novel measuring approach, with implications for investment businesses and governments in creating investor-supportive institutions.

Eric et al. (2022) Analyze how investors and venture capitalists are affected by framing bias, demonstrating how the way businesses present information can affect how investors behave. The study highlights the significance of effective communication in financial decision-making by emphasizing that positively framed data produces better investment predictions than negatively framed data.

Objectives Of the Study:

- * To study the role of investment behavior.
- To assess the effects of distinct biases on investment behavior.

Conceptual model:



Hypotheses of the study:

H0: There is no effect of distinct biases on investment behavior.

H1: There is an effect of distinct biases on investment behavior.

Hypothesis Testing

Hypothesis No	Framed Hypothesis	P-Value	Result
H_{4}	Loss aversion-Cognitive Biases in Investment	0.01	Supported
H ₂	Endowment Bias- Cognitive Biases in Investment	0.20	Supported
Н3	Isolation Bias- Cognitive Biases in Investment	0.10	Supported
H4	Framing Bias- Cognitive Biases in Investment	0.00	Supported

The analysis reveals that Cognitive Biases in Investment speed significantly impacts consumer satisfaction. This finding suggests that when Cognitive Biases in Investment respond quickly to consumer inquiries, it enhances the overall shopping experience, leading to higher satisfaction levels. The importance of promptness in chat bot interactions is under scored, emphasizing that e-commerce platforms should prioritize speed to improve customer satisfaction.

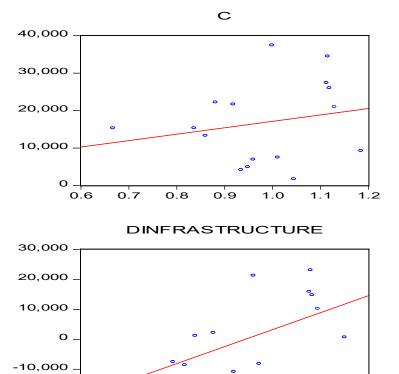
3. RESULTS AND DISCUSSIONS:

Cognitive Biases in Investment Decision-Making

Dependent Variable: Investment Decision	
Method: Least Squares	
Sample (adjusted): 2 17	

Included observations: 10 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	17130.99	2787.494	6.145658	0.0000
DINFRASTRUCTURE	2.425922	0.878613	2.761080	0.0153
Squared	0.652558	Mean dependent var		16113.31
Adjusted R squared	0.606312	S.D. dependent var		13269.72
S.E. of regression	11052.08	Akaike info criterion		21.57509
Sum squared resid.	1.71E+09	Schwarz criterion		21.67167
Log likelihood	-170.6007	Hannan Quinn criteria.		21.58004
F statistic	7.623565	Durbin Watson stat		1.216566
Prob (Fstatistic)	0.015308			

FDI vs. Variables (Partialled on Regressors)



Interpretation:

-20,000

-8,000

The above study explains about Impact of Cognitive Biases on the Investments decisions. The outcome signifies that there is positive influence of the Cognitive Biases on Investments decisions. There is a unit increase of the Cognitive Biases sector due to the contribution by the Investments decisions. The coefficient value of the table implies the 2.425922and the p-value is tended to be less than 0.05 i.e. 0.01 meaning that there is an impact of the Cognitive Biases on the Investments decisions. The leverage plots shown in the above figure implies there is a rise in the Investments decisions by the dots i.e. plots in shown in the above figure will results in the increase in the infrastructure sector will increase the Cognitive Biases.

2,000

6,000

-4,ooo

VAR Lag Order Selection CriteriaCognitive Biases in Investment Decision

		VAR I	Lag Order Selection	on Criteria		
		Endogen	ousvariables: BC	- Investment		
		E	xogenousvariable	es: C		
			Sample: 1 17			
		In	cludedobservation	ns: 16		
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-520.7682	NA*	8.22e+25*	65.34602*	65.44259*	65.35097*
1	-518.3986	3.850525	1.02e+26	65.54983	65.83955	65.56466
* Indicates	s lagorder selected	by the criterion	<u> </u>			
LR: seque	ntial modified LRt	est statistic (each	test at 5% level)			
FPE: FinalpredictionError						
AIC: Akai	keInformation crit	erion				
SC: SchwarzInformation criterion						
HQ: HannanQuinn information criterion						

Interpretation:

The above study has analyzed that there are number of lags appeared to be to lag 0, here this lag 0 will be applied to know the next step that is Vector Error Estimates to know the relationshipInvestment decisions are influenced by numerous external factors (e.g., market conditions, economic indicators) that can complicate the analysis of cognitive biases. Isolating the effect of biases can be difficult. Cognitive biases can vary widely among individuals, and what affects one investor may not affect another in the same way. This variability complicates the establishment of universal patterns.

Vector Error Correction Estimates

Vector Error Correction Estimates			
luded observations: 18 after adjustments			
standard errors in ()& t-statistics in []			
Co-integrating: CointEq1			
1.000000			
-0.949017			
(0.28534)			
[-3.32588]			
-2.171854			
D(COGNITIVE BIAS)	D(ID)		
-0.219478	-0.953481		
(1.28408)	(0.44532)		
[-0.17092]	[-2.14109]		
	Liuded observations: 18 after adjustments CointEq1 CointEq1 1.000000 -0.949017 (0.28534) [-3.32588] -2.171854 D(COGNITIVE BIAS) -0.219478 (1.28408)		

D(Cognitive Bias (-1))	-0.216814	0.475044
	(1.13598)	(0.39396)
	[-0.19086]	[1.20581]
D(COGNITIVE BIAS(-2))	-0.257934	0.438534
	(0.68108)	(0.23620)
	[-0.37871]	[1.85662]
D(COGNITIVE BIAS(-3))	0.101181	0.022513
	(0.64640)	(0.22418)
	[0.15653]	[0.10043]
D(COGNITIVE BIAS(-4))	-0.004773	-0.151967
	(0.30542)	(0.10592)
	[-0.01563]	[-1.43475]
D(COGNITIVE BIAS(-5))	0.136376	0.013092
	(0.36029)	(0.12495)
	[0.37852]	[0.10478]
D(ID(-1))	0.401166	-2.568160
	(2.44506)	(0.84796)
	[0.16407]	[-3.02865]
D(ID(-2))	1.857718	-2.077471
	(3.14038)	(1.08909)
	[0.59156]	[-1.90752]
D(ID(-3))	1.105162	-1.727529
	(2.51618)	(0.87262)
	[0.43922]	[-1.97970]
D(ID(-4))	1.058802	-1.477724
	(2.27523)	(0.78906)
	[0.46536]	[-1.87276]
D(ID(-5))	0.375639	-0.247750
	(1.73180)	(0.60059)
	[0.21691]	[-0.41251]
С	1.931394	-4.313706
	(5.65785)	(1.96216)
	[0.34137]	[-2.19844]
R-squared	0.785868	0.958184
Adj. R-squared	0.393291	0.881521

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Sum sq. resids	373.6698	44.94234
S.E. equation	7.891660	2.736858
F-statistic	2.001821	12.49872
Log likelihood	-52.83790	-33.77597
Akaike AIC	7.204211	5.086219
Schwarz SC	7.797792	5.679800
Mean dependent	-0.505035	-0.321690
S.D. dependent	10.13160	7.951194
Determinant resid covariance (dof adj.)	326.8784	
Determinant resid covariance	36.31983	
Log likelihood	-83.41306	
Akaike information criterion	12.15701	
Schwarz criterion	13.44310	

Interpretation:

Vector Error Correction (VEC) models are used in time series analysis to understand the long-run relationship between integrated (non-stationary) variables while also capturing short-term dynamics. The above study has analyzed that there are number of lags appeared to be to lag 0, here this lag 0 will be applied to know the next step that is Vector Error Estimates to know the relationship Investment decisions are influenced by numerous external Cognitive biases in investment decision-making refer to systematic patterns of deviation from norm or rationality in judgment, which can affect how investors perceive risk, evaluate opportunities, and make choices.

CONCLUSION:

In conclusion, cognitive biases significantly impact investment decision-making by distorting rational analysis and leading to suboptimal choices. Investors often fall prey to biases such as overconfidence, loss aversion, and herd mentality, which can skew their perception of risk and return. Recognizing these biases is crucial for developing strategies to mitigate their effects. By fostering awareness and employing techniques like diversified portfolios, systematic decision-making processes, and reflective practices, investors can improve their decision-making outcomes. Ultimately, understanding and addressing cognitive biases is essential for achieving better financial performance and making informed investment choices.

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