



A STUDY ON BEHAVIOURAL BIASES INFLUENCING INVESTMENT DECISIONS OF INVESTORS OF INDIAN STOCK EXCHANGES

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Abstract: This study focuses on behavioural biases influencing investment decisions. Among several biases, the study mainly takes into account of biases such as herding, disposition effect, and overconfidence and that it aims to observe the impact of such biases on investment decisions of investors among Indian Stock Exchanges. A quantitative approach was followed by collecting data using questionnaires and responses were collected from 350 respondents who invest in shares and mutual funds of Indian Stock Exchanges. The study concludes that behavioural biases such as herding, disposition effect and overconfidence influence investment decisions of investors of Indian Stock Exchanges and that herding bias strongly influence investment decisions.

Index Terms - Behavioural biases, herding bias, disposition effect, overconfidence bias, investment decisions.

I. INTRODUCTION

Investment decision is when investors decide to distribute their money in best possible avenues. While doing so, investors tend to be rational or irrational. Investors cannot be rational all the time, the presence of some behavioural biases may lead to irrational decisions.

Decision making is a cognitive process and a human task. Selecting the best option from the available options through processes is defined as decision making (Bhatia et al., 2020).

Investors have a wide range of investment avenues namely Fixed Deposits, Recurring Deposits, Mutual Funds, Provident Funds etc... Investors face difficulties in choosing between the investment avenues and also in making necessary investment decisions which may lead to irrationality of decisions.

According to Modern Portfolio Theory (MPT) and Efficient Market Hypothesis, investors investing under standard financial conditions are successful. As per Efficient Market Hypothesis, Investors have access to all information.

Investors make choices that maximize the benefits and minimize the cost (Ahmad Zamri, Ibrahim, Haslindar, Tuyon, 2017).

When it comes to individual investment decision making, it is essential to consider that a certain degree of uncertainty and risk is associated with each investment decision choice (Paul Slovic, 1972).

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While deciding between investing avenues, emotions and perceptions of investors play the significant role. When an investor is more confident about investing in a particular sector or avenue, he tends to ignore the risks involved in such an avenue. Behavioural Finance comprises of concepts that explain investor behaviour and it also comprises of concepts relating to behavioural biases.

Behavioural finance endorses to understand the different factors of an investor's behaviourlike judgment, emotional, social, intellectual factors, and restricted cognitive capabilities which are significant drivers of stock market (Trifan,2020)

Investors do not act rationally all the time, indeed the emotions, heuristic and behavioural biases are substantially associated with investment decisions (Bakar & Yi,2016; Bakar et al.,2019; Bhatia et al., 2020)

Based on previous studies, behavioural biases have significant positive and negative effect on investment decisions and the studies shown how certain behavioural biases. Therefore, it is essential to understand how the selected biases i.e., Over Confidence Bias,Disposition Effect, and Herding Bias influence investment decisions.

II. OBJECTIVES OF THE STUDY

- To understand the demographic characteristics of investors and decision making behaviour.
- To identify and analyse behavioural biases among investors
- To examine the impact of behavioural biases on investment decisions.

III. REVIEW OF LITERATURE

Suresh G (2024) conducted a study to measure the combined impact of financial literacy and behavioural biases on investment decisions. The results showed that heuristic bias had a significant positive association with the creation of behavioural bias in decision-making, the framing effect, cognitive illusions and herd mentality have negative associations in the formation of behavioural biases. It is found out that investors follow heuristic biases and no other irrational techniques in investment decisions. This implies that the financial literacy of individual investors has a significant impact on stock market investment decisions.

Hadiya Altaf and Anisa Jan (2023), The paper deals with generational biases-investment- related biases including fear of missing out, socially responsible investing, overconfidence and herding and have concluded that these biases positively impact their investing intention. The paper has also proposed generational theory of behavioural biases which allows investment managers in understanding financial anomalies at a collective level.

Arumugam Subramaniam and Thirunavukkarasu Velnampy(2017) The objective of the study is to identify the behavioural finance based factors influence the investment decisions of household investors in the Northern Province of Sri Lanka. The study concluded that Representativeness bias, Overconfidence bias, Availability Bias, Loss Aversion bias, Regret Aversion bias and Herding influence the investment decisions of household investors.

Sakshi Agarwal and Saurabh Singh(2023) have identified significant biases affecting individual investors' decision making by conducting a comprehensive review of literature and have also identified positive and negative impact of the biases on investment decisions.

N. Sathya and C. Prabhavathi (2023) The paper investigated the role of behavioural biases and risk perception in the investment decisions and the impact of social media on these factors.The results indicate that social media has a significant impact on these factors and that social media severe the effect of behavioural biases such as herding, overconfidence and risk perception. The findings of the study provide implications to individuals, financial advisors, and policy makers.

Mohan Prasad Sapkota(2023) examined the impact of behavioural biases of equity investors' decision making of Chitwan district and found that emotional behavioural biases' impact to be significantly impactful. For the study, purposive sampling technique was used.

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Vibhash Kumar, Ria Dudani, Latha K (2023) conducted a study to explore the relationship between behavioural biases and big five personality traits. The study will benefit the investors, financial advisors, and stock brokers in understanding their clients' personality traits and in framing a suitable portfolio so as to help them earn the highest profits.

Bhoomika Trehan and Dr. Amit Kumar Sinha (2018) have conducted a study to observe the existence of overconfidence in investors while decision making. The study implied that it is most relevant to investors and financial advisors in understanding the psyche behind investment decisions.

Mir Zat Ullah Khan (2017), The study concludes that there is no significant association between risk perception and gender. From the sample of respondents most of them were subject to availability bias. Only few respondents were subject to loss aversion bias and there is positive relationship between investment decisions making.

Wei Xu (2003) The paper provide evidence that trading driven by behavioural biases contribute to stock return momentum. The study concluded that two types of behavioural biases driven trading, the momentum trading and the confidence-influenced trading are highly associated with return momentum. This shows the impact of behavioural biases driven trading on mispricing. The study also suggests that understanding the information evaluation process among the market participants and the effect of their sentiment on this process would help uncover the mechanism through which the information processing cost and sentiments affect the investors' reactions to different information and provide ground for further empirical tests of behavioural hypotheses regarding stock return and market efficiency.

Abbreviations and Acronyms

HB=Herding Bias; DE=Disposition Effect; OB=Overconfidence Bias; ID=Investment Decisions;

I. RESEARCH METHODOLOGY

4.1 Population and Sample

A total of 350 questionnaires were distributed among individual investors participating across Indian Stock Exchanges. Purposive sampling is used where respondents' selection continues until the data saturation point (Sahi et al., 2013) and found the respondents according to the topic of interest (Sibona et al., 2020). The purposive sampling better matches the sample with aims and objectives of research that rigorously improve the trustworthiness of data and results (Campbell et al., 2020). Theoretically, purposive sampling draws the 6 SAGE Open sample from population with smaller variance than target population (Guarte & Barrios, 2006).

The quantitative techniques are used to understand the causal relationship between the variables as the study involves questionnaire.

4.2 Data and Sources of Data

The study is based on primary data collected from 350 respondents through structured questionnaires (adapted from the paper titled "**Do Behavioral Biases Affect Investors' Investment Decision Making? Evidence from the Pakistani Equity Market by Zain UI Abideen , Zeeshan Ahmed , Huan Qiu , and Yiwei Zhao**". The data collection period is ranging from January 2024 to March 2024.

4.3 Theoretical framework

4.3.1 Herding Bias

Herding refers to the tendency to flock together, especially under conditions of uncertainty. Herding behavior in investing occurs for several reasons. (H. Kent Baker and Vesa Puttonen, 2017)

4.3.2 Disposition Effect

Regarding the phenomenon to avoid loss, retail investors sell or quit winning stock speedily and keep loser stocks for an extended period in disposition effect (Taffler et al.2017).

4.3.3 Overconfidence Bias

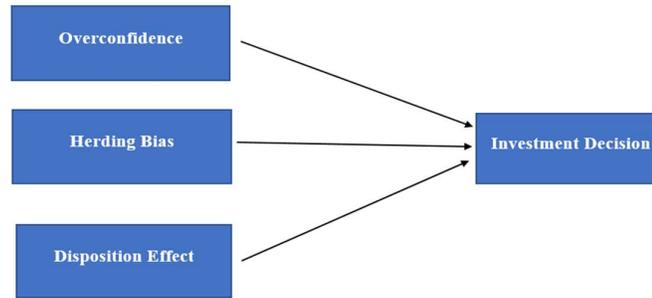
Overconfidence bias is an excessive belief in one's own judgments and abilities. Overconfident investors believe that they know more than they actually do. In other words, they have a subconscious faith in what they think they know and rely too much on their own judgment due to feelings of superiority. This belief stems from the feeling that they have more or better information or they are better at interpreting information. Accordingly, overconfident investors usually overestimate their abilities and ignore the actual risk involved in a decision. In short, overconfident investors are victims of the "ego" or "superiority trap." (H. Kent Baker and Vesa Puttonen, 2017).

4.3.4 Investment Decision

Decision making is a cognitive process and a human task. Selecting the best option from the available options through processes is defined as decision making (Bhatia et al., 2020).

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Investors commit decision errors for various reasons, including the lack of technical expertise, overconfidence (OC) in their abilities, herding (HE) attractions, disposition effect (DE), and appetite for quick returns (Lin, 2011, 2012).



Conceptual Framework

4.3.5 Hypotheses

H1: Herding Bias has significant impact on Investment Decisions.

H2: Disposition Effect has a significant impact on Investment Decisions.

H3: Over Confidence has a significant Impact on Investment Decisions.

4.4 Statistical tools

This section encompasses various tools used for the purpose of data analysis. Data Analysis including reliability, Frequency, correlation was done using SPSS and SEM was constructed using SmartPLS4. The detail of methodology is given as follows.

4.4.1 Descriptive Statistics

The purpose of descriptive statistics is to describe the relationship between the variables. It provides a summary of data in terms of mean, median and mode. The degree of dispersion characterises the spread towards the extremes, while the central tendency describes how much the observations cluster around a focal point.

4.4.2 Reliability Analysis

Cronbach's alpha is a dependability metric created by Lee Cronbach in 1951. "Reliability" is another name for

Consistency.

4.4.3 Percentage Analysis

This analysis deals with percentage analysis of primary data collected from respondents wherein the demographic characteristics of the respondents are analysed.

4.4.4 Correlation

A **correlation coefficient** is a number between -1 and 1 that tells you the strength and direction of a relationship between variables. In other words, it reflects how similar the measurements of two or more variables are across a dataset.

4.4.5 ANOVA

The ANOVA, which stands for the Analysis of Variance test, is a tool in statistics that is concerned with comparing the means of two groups of data sets and to what extent they differ.

4.4.6 Structural Equation Model(SEM)

SEM is a multivariate analysis technique which is used to analyse the relationship between an unobserved (latent) variable and the observed variables that measure it.

V. RESULTS AND DISCUSSION

5.1 Results of Descriptive Statics of Study Variables

Table 5.1 Descriptive Statistics			
Description		Frequency	Percent
Age	Below 25 years	102	29.1

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	25-30 years	57	16.3
	30-40 years	45	12.9
	40-50 years	67	19.1
	Above 50 years	79	22.6
	Male	200	57.1
Gender	Female	150	42.9
	Employed	112	32.0
Employment Status	Unemployed	47	13.4
	Self-employed	131	37.4
	Student	36	10.3
	Retired	24	6.9
	Total	350	100.0
	Below 3,00,000	151	43.1
Annual Income	3,00,000-5,00,000	85	24.3
	5,00,000-7,00,000	53	15.1
	7,00,000-9,00,000	20	5.7
	Above 9,00,000	41	11.7
	Less than a year	132	37.7
Investment Experience	1-3 years	113	32.3
	3-5 years	38	10.9
	5-7 years	26	7.4
	More than 7 years	41	11.7
	Shares	194	55.4
Avenues Invested	Mutual Funds	156	44.6
	For Business	193	55.1
Investment Objective	For Education	69	19.7
	For Acquiring Assets	50	14.3
	Others	38	10.9
	Daily	79	22.6
Frequency of Investment	Weekly	46	13.1
	Monthly	141	40.3
	Yearly	48	13.7
	Occasionally	36	10.3
	Self	203	58.0
Investment Pathway	Broker	67	19.1
	Friends	44	12.6
	Online Platforms	36	10.3
Investment Horizon	Long-Term	254	72.6
	Short-Term	96	27.4
Source: Primary data. Processed by SPSS 20			

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Table 5.1 reveal a diverse and dynamic landscape of investment behaviour, preferences, and demographic characteristics such as age, gender, qualification, employment status, and annual income and it is evident that investment is not confined to any particular demographic group. The majority of surveyed population opt fr long-term investments, which implies their attitude towards sustained wealth accumulation and financial planning.

5.2 Reliability Analysis

TABLE 5.2 RELIABILITY ANALYSIS	
Cronbach's Alpha	N of Items
0.871	33
Source: Primary data. Processed by SPSS 20	

The table 5.2.1 shows the reliability analysis of the data collected from the respondents. The Cronbach's Alpha for the scale is 0.871(87.1%) which is more than standard value of 0.7. Therefore, the high value of Cronbach's Alpha in this study suggests that all 33 variables are reliable and consistent in measuring the intended construct.

5.3 Correlation

Table 5.3.1 CORRELATION				
	ID	HB	DE	OC
ID	1	0.827**	0.742**	0.772**
HB	0.827**	1	0.751**	0.750**
DE	0.742**	0.751**	1	0.703**
OC	0.772**	0.750**	0.703**	1
Source: Primary data. Processed by SPSS 20				

The table 5.3.1 implies that ID has a strong positive correlation with HB ($r = 0.827, p < 0.01$), DE ($r = 0.742, p < 0.01$), and OC ($r = 0.772, p < 0.01$). This suggests that higher levels of Herding Bias, Disposition Effect, and Overconfidence Bias are associated with more pronounced Investment Decisions.

5.4 ANOVA

Table 5.4.1 ANOVA						
		Sum of Squares	Df	Mean Square	F	Sig.
HB	Between Groups	4.673	4	1.168	1.76	0.136
	Within Groups	228.938	345	0.664		
	Total	233.611	349			
DE	Between Groups	6.486	4	1.622	2.649	0.033
	Within Groups	211.204	345	0.612		
	Total	217.69	349			
OC	Between Groups	6.235	4	1.559	2.544	0.039
	Within Groups	211.39	345	0.613		
	Total					

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Total	217.624	349	
Source: Primary data. Processed by SPSS20			

The table 5.4.1 implies that there is no significance difference between herding bias and annual income as $p > 0.05$ i.e., $p = 0.136$ while There is a significant difference between disposition effect and overconfidence bias and annual income.

5.5 SEM

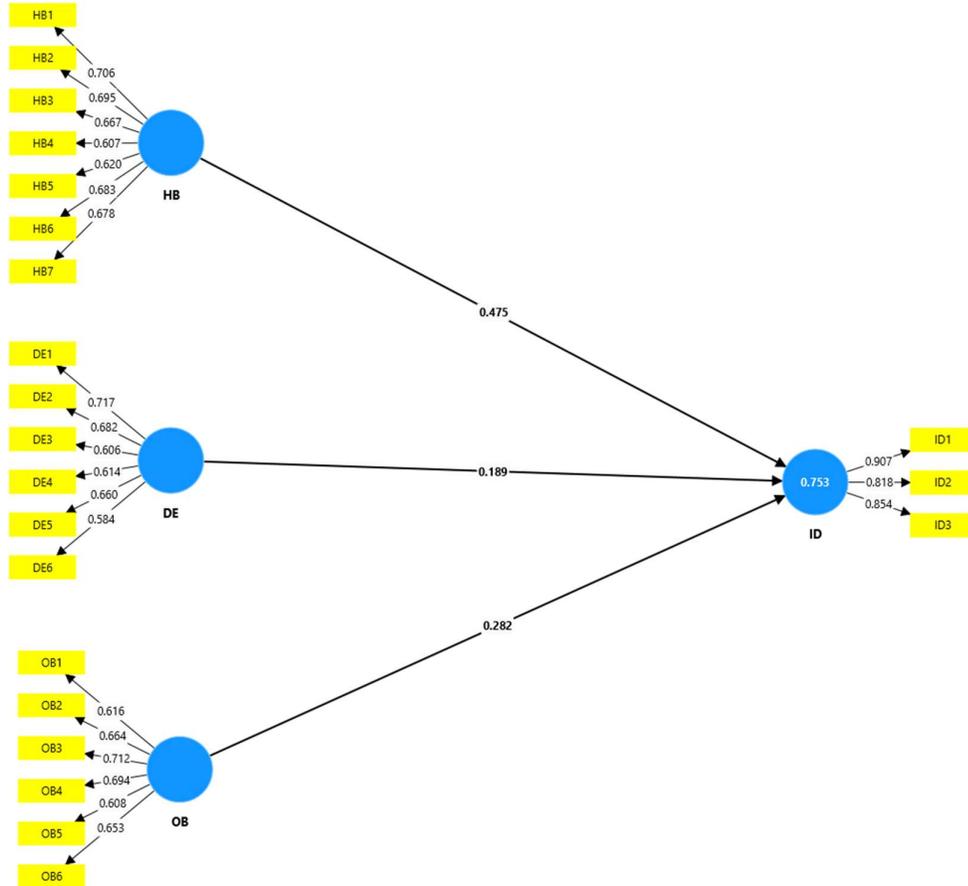


FIGURE 5.5.1: Structured Equation Model processed by SmartPLS4

The figure 5.5.1 shows the path coefficients i.e., Herding Behaviour(0.475) strongly influences investment decision, and then Disposition Effect(0.189), and then Overconfidence Bias(0.282).

	Cronbach's alpha	Composite reliability (rho_c)	Average variance extracted (AVE)
DE	0.719	0.81	0.417
HB	0.791	0.848	0.444
ID	0.824	0.895	0.741
OB	0.738	0.821	0.434

Source: Primary data. Processed by SmartPLS4

The objective of examining the measurement model is to ensure that the measurements are reliable and precisely represent the

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Recognized conceptual aspects. Cronbach's alpha scores ranged from 0.719 to 0.824, indicating that they were all higher than the thresholds. The findings also showed the composite reliability extended from 0.810 to 0.895, which was better than the acceptable threshold of 0.7. The AVE values range between 0.417 and 0.741, indicating that not all the values were more than acceptable threshold of 0.5. The HTMT criteria was not met as the values were indicated criteria of 0.9. Overall, behavioural biases influences investment decisions of investors.

VI. CONCLUSION

The study concludes that behavioural biases (Herding bias, disposition effect and overconfidence bias) influence the investment decisions of investors of Indian Stock Exchanges. Especially, herding bias strongly influence the investment decisions.

The findings also suggest that there is a significant difference between annual income and behavioural biases. Further study on annual income and behavioural biases may bring out the impact of annual income and behavioural biases on investment decisions.

The study is confined to only investors of Indian Stock exchanges who invest only in shares and mutual funds. Exploring other avenues and other stock exchanges may provide more clear conclusions. By addressing and acknowledging various behavioural biases, investors will be able to make more rational decisions.

VII. ACKNOWLEDGMENT

Thanks Abideen, Z. U., Ahmed, Z., Qiu, H., & Zhao, Y. for their structured questionnaire which is adapted in this study, Thanks Dr. Nigama K for her guidance throughout and her contributions to this paper,

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