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PERSONAL INVESTMENT CHOICES AND HUMAN BEHAVIORAL BIASES: RECENT DISCOVERIES IN THE PAKISTAN STOCK EXCHANGE

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ABSTRACT

Although the notion of finance has been examined for centuries, the domain of behavioral finance, which investigates individuals' attitudes about money ownership, is relatively recent. Psychological notions suggest that behavioral finance theories can elucidate the impact of emotions on the investment behaviors of individual investors in this setting. Consequently, the objective of this study is to examine the behavioral factors affecting the decisions of individual investors in the PSX. The correlations among the variables of Halo Bias, and investment success are examined. This research aims to contribute to the advancement of behavioral finance in Pakistan, given the scarcity of studies on the topic inside the country. The investigation started with ideas derived from existing behavioral finance theories. Of the 350 questionnaires emailed to investors of the Pakistan Stock Exchange, 295 were completed and returned. Questionnaires were administered to investors of the Pakistan Stock Exchange to evaluate the hypothesis. The data collected is analyzed using Smart PLS software. The literature evaluation indicates that Halo Bias, Framing Bias, and Locus of Control significantly influence individual investment decisions at PSX.

***Keywords**: Behavioural finance, Halo Bias, PSX.*

INTRODUCTION

The significance of investing is undeniable; yet investor psychology also has considerable influence. Investors consider several factors that influence their investing decisions. What is the rationale for investment? In which venues may I allocate my investments? What is the optimal method for investment? The decision may stem from information acquired by reading or auditory sources, including news and coworkers, and if it is rationally justified by various criteria indicating its appropriateness. What impact do decisions have on the investor, and what outcomes do they generate? Is it advantageous or detrimental for him? All assessments were based on the success of this venture. Investors consistently endeavor to make reasonable decisions concerning their investment objectives and management; nonetheless, despite their diligent efforts, cognitive biases that lead to irrational decision-making are unavoidable. Cognitive errors, termed behavioral biases, result in significant distortions and hinder decision-making. Consequently, investors must recognize these biases and their potential detrimental impact on investing

decisions (Mamidala et al., 2024; Shah and Butt, 2024).

A shareholder undergoes many phases of investment, which may vary according to the investors' demands and concerns. If a shareholder is first attracted to an investment due to positive perceptions, he may reconsider his strategy midway through the process, and by the end, he may become either greedy or fearful, which will influence his decisions. Two situations are plausible about an investor's investment behavior. Despite the necessity for an investor to retain his investment, apprehension compels him to divest. An investor should refrain from further investments and return his capital; but, greed entices him to continue investing in pursuit of greater gains (Luo et al., 2024; Goetzmann & Kumar, 2008).

Conventional financial theories suggest that individuals make financial decisions logically and rationally, without of cognitive biases. The Efficient Market Hypothesis (EMH), a tenet of traditional finance theory, posits that firms cannot surpass the stock market since share prices effectively reflect available information. The transaction of share prices transpires at fair market value in accordance with the Efficient Market Hypothesis (EMH). This renders the investor's intention to acquire the commodity below its true cost and sell it above its optimal value unfeasible. High-risk investments enhance investor performance in efficient markets. Fama, 1970. Markowitz's Modern Portfolio Theory (MPT) and Fama's Efficient Market Hypothesis (EMH) are two fundamental, esteemed theories that underscore the significance of rationality. According to Von Neumann and Morgenstern (2007), the theory of anticipated utility posits that investors act rationally. Financial professionals and investors employed many financial models to ascertain stock prices. For instance, the Capital Asset Pricing Model (Sharpe, 1964) and the Arbitrage Pricing Theory (Ross, 1976).

The research indicates that investors fail to make rational decisions, as they tend to retain underperforming stocks for prolonged durations while hastily divesting successful ones. This behavior persists despite the fact that underperforming stocks exhibit mediocre performance, whereas successful stocks demonstrate operational excellence (Odean, 1998; Tversky & Kahneman, 1974). Investors often conform to prevailing trends, disregarding their own knowledge and relying on the actions of others instead of their individual judgment (Tan et al., 2008).

Investors exhibit financial behavior when making financing decisions during investing activities. Individuals exhibit distinct behaviors while making significant judgments due to variations in their cognitive processes influenced by their mentalities. Their decisions are shaped by their emotional views. Shareholders are thus influenced by behavioral considerations, leading to suboptimal judgments. Conventional finance theories inadequately account for cognitive biases in investors' decision-making inside the stock market.

Given the significance of the stock market as a determinant of corporate performance, it is essential to investigate the influence of behavioral aspects on financial decisions within this arena. The stock markets reflect the financial viability, competitiveness, and future prospects of the nation. The stock market's fluctuations can be affected by investors' actions. It is evident that studying behavioral patterns is crucial, and traditional finance fails to address such biases or discrepancies. Consequently, advancements in behavioral finance research have increased in recent years, focusing on identifying and defining various psychological biases and assessing their impact on investors' decisions. The achievement in this domain is attributable to the
endeavors of psychologists (Garekwe, 2024).

Prospect theory serves as the foundation of behavioral finance. Researchers have enhanced prospect theory by applying it to analyze how investors make decisions in precarious situations. Kahneman and Tversky, 1979. Researchers are doing ongoing investigations in this domain (Costa et al., 2017; Paule-Vianez et al., 2020). Behavioral finance contests the notion of "rationality" in conventional finance theory, which posits that when shareholders are confronted with choices and encouraged to maximize their utility, individuals behave rationally and enhance their perspectives. Behavioral finance is a pragmatic subset of cognitive science (Tomer, 2007). The cornerstone of behavioral finance is the tendency of individuals to display irrational behavior. Multiple research have elaborated on this concept (Shiller, 2000; Duran & Caginalp, 2007;

Mittal et al., 2019). Statistics indicate that Pakistan's marketplaces are inefficient, with several prior research providing evidence to support this claim (Chishti et al., 2023; Habibah et al., 2017; Chishti et al., 2016).

Traditional finance posits that investors exercise caution and refrain from assuming risks. Behavioral finance critiques the notion by asserting that individuals do not invest logically or rationally and are willing to assume risks. Chan et al. (2020), Guo and Wong (2016), Li and Wong (1999), Wong and Li (1999), and Wong and Ma (2008), together with other scholars, elucidate the behavior of shareholders about their risk attitudes, particularly their inclination to embrace further risk and their tendency to evade danger. Consequently, such inquiries direct us toward the subsequent study aims.

To investigate behavioral finance in order to discern the potential behavioral elements affecting the investing decisions of individual investors at the PSX.

To ascertain the impact of cognitive biases, including Framing Bias, Halo Bias, and Locus of Control, on the decision-making processes of individual investors in PSX.

2. Literature review and hypotheses development

Many theories are made to find out the impact of these biases. These theories and models such as Modern Portfolio Theory (1952), the Capital Asset Pricing Model (CAPM) (1964), and Efficient Market Hypothesis (EMH) (1965) were said to have revolutionized financial landscapes and still do but at the same time left some unanswered questions in explaining. Like why investors make irrational decisions?, Why do they don't make rational decisions? (Kapoor & Prosad, 2017)

The term "behavioral finance" refers to a fresh perspective on capital markets that emerged, at minimum largely in response to the difficulties of traditional finance. It is claimed that using models that assume predetermined agent exists who is not entirely rational, some macroeconomic occurrences can be understood well. It assesses precisely what happens if either or both of the two assumptions that energised an individual's reasonable behaviour are applied. In some behavioural finance models, actors are unable to effectively upgrade their viewpoints. Other models' agents exhibit prescriptively dubious inclinations (Barberis & Thaler, 2003).

Traditional finance theories were expertly created to support deliberate financial judgments. In any case, experts were unable to explain the turmoil in the financial markets. These upheavals or paradoxes manifested as share market spikes, market overreactions or under reactions, impetus, and periodic changes of direction. This worldview led to the emergence of behavioural finance, which aims to shed light on these inconsistencies utilizing behavioural theories. They are recognised for their pioneering research in the community of financial economics (Kapoor & Prosad, 2017).

Research by Tversky and Kahneman (1992) is among the most significant research in behavioral finance, as it elucidates the influence of cognitive distortions on the judgment process. One of the comprehensive research in this field that is well recognized is (Barber & Odean, 2000). Individuals frequently commit various errors in decision-making, which are termed behavioural factors (Chen et al., 2007). The halo effect was first elucidated by Weber et al. (1998) as a symptom of an error in the appraisal process (Jacobs et al., 1985). The halo effect is a cognitive bias that predisposes individuals to criticize others and form generalized assessments based on certain attributes (Ackert, 2010). The halo effect is a prevalent phenomenon characterized by a pronounced tendency to see an individual as either exceptionally competent or significantly deficient, hence influencing the evaluation of their specific performance attributes based on this general perception (Thorndike, 1920).

Research on biases in financial investment audit contexts (O'Donnell, 2005) indicates that strategic assessments influence auditors' judgments. Recent studies indicate the presence of a halo effect in a socially responsible setting. Reichert (2021) demonstrates that a firm's pro-social behavior influences individuals' assessments of a manager's reliability when implementing a control scheme, resulting in fewer negative evaluations from employees regarding control in companies that engage in charitable donations compared to those that do not. Individuals are never rational when making financial decisions (Otuteye et al., 2014). Behavioral finance research indicates that behavioral biases influence financial behaviors (Baker, 2002;

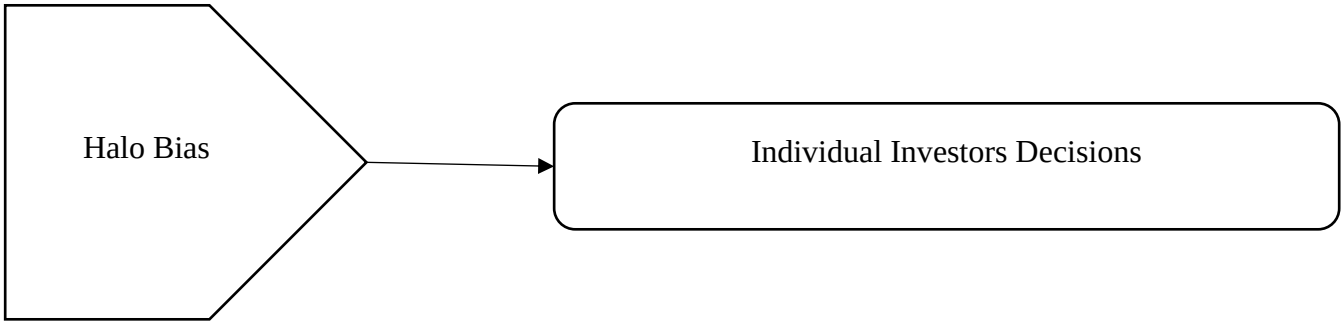
Shimizu et al., 2013; Klein, 2004; Nadricka, 2020; Spognard, 2021; Rousseau et al., 2015). In the realm of relationship marketing, attributes of sustainable development are interconnected with and reliant on other product characteristics, enabling individuals to recognize sustainable development traits even in the absence of available information, as noted by Gruber et al. (2014), Nuttavuthisit (2017), and Schlegelmilch (2014).

H1: A substantial correlation exists between halo bias and the investing decision-making of individual investors at the Pakistan Stock Exchange (PSX).

(Meissner et al., 2013) analyzed the significance of complexity and planning in decision-making. They argue that by broadening the decision-makers' perspective, planning for variants of a future occurrence mitigates the impact of framing bias. (Chin-Shan, 2014) endorses their position by recognizing the efficacy of cognitive emotion regulation through information processing or situational assessment, which encourages individuals to analyze and critically evaluate their decisions while considering other solutions. Park (2007) similarly finds that option complexity and time constraints diminish the impact Individual investors and decision-makers who believe they have control over the situation are influenced by the locus of control (Brauer & Wiersema, 2012). Gervais and Odean (2001) assert that some individuals underestimate their abilities and become risk-averse, whilst others believe they can influence market circumstances (Allen & Evans, 2005). These individuals exhibit poor decision-making because to an inflated sense of superiority, resulting in irrationality and incompetence. Entrepreneurs possessing an inherent locus of control exhibit detrimental effects and make suboptimal choices (Brauer & Wiersema, 2012). Investors become irrational in their decision-making, and their investment decisions become distorted if they feel they can affect the motivation and hesitance to invest (Selart, 2005; Rotter et al., 1966; Maddux, 1991).

Research Model

Figure 1: Theoretical Framework



3. Research methodology

Data collection and analysis are structured by research design (Bryman and Bell, 2007). This study employs a causal research methodology to investigate the relationship between the dependent variable, Individual Investors' decisions, and the independent variables, Halo Bias, Framing Bias, and Locus of Control, concentrating on the influence of behavioral factors on individual investors in the Pakistan Stock Exchange during their investment decision-making process. The target demographic consists of individual investors registered at the Pakistan Stock Exchange (PSX). The researcher circulated surveys using Google Forms to 500 investors on the PSX, receiving responses from 414 investors. Both personal linkages and databases of individual investors from stock trading businesses are utilized. This study used a sample size of 414 individuals. The results indicated that a significant proportion of investors engage in the

3.1 Data Collection

The research employed a structured questionnaire to gather data for this examination. The data are associated with each attribute utilized by the researcher in this investigation. A cross-sectional study was done, a research design in which variables

are observed without manipulation, and data is collected simultaneously from a substantial population. Consequently, each participant's data for this survey is taken just once. A structured questionnaire with a 5-point Likert scale is applied to gather responses. Part A of the questionnaire encompasses inquiries regarding the respondents' demographics, including gender, age, education, marital status, and income level. Part B contains items related to the Halo Bias, from the questionnaire. Part A of the questionnaire had five questions, whereas Part B contained sixteen. A total of twenty-one questions. The researcher employed the Locus of Control scale from the questionnaire utilized by Margo Coleman et al. (2000) in their study to assess behavioral aspects. The Framing Bias questionnaire scale was derived from Yalcin et al. (2016). The Halo Bias questionnaire was derived from Djojopranoto et al. (2016). The collected data is examined using software called Partial Least Squares Structural Equation Modelling (SmartPLS 4-SEM).

4. Results

Questionnaires for the study were distributed to 350 individual investors of PSX, however responses were obtained from just 295 participants.

4.1 Descriptive Statistics

The subsequent table delineates the gender of the respondents who engaged in this research. Table 1 presents the demographics of the respondents of PSX.

Table 1

Demographic	Indicators	Frequency	Percentage
Gender	Male	280	95.65%
	Female	15	4.35%
		295	
Age Group	18-25	15	4.3%
	26-35	60	18%
	36-45	200	68%
	46 and above	20	9.7%
		295	

The researchers determined that the gender ratio or equality of participants in this study needed to be established. This survey revealed that 95.35% of the respondents were male, indicating a substantial predominance of males over women in investment activities. The majority of investors, comprising 68% of the total responses, are aged between 36 and 45. In education, 61.2% are graduates, indicating the median educational level of investors.Among marital statuses, 87.9% are married, indicating the financial autonomy of investors. Among income groups, the majority of investors earn over $99,000, constituting 35.3%. (Hair et al., 2013; Hair et al., 2017)

The average variance extracted (AVE) was utilized to assess convergent validity. Furthermore, "convergent validity" refers to the extent to which one measure aligns with other measures of a related construct (Hair et al., 2017). Fornell, 1981. Hair et al. (2016); Bagozzi and Yi (1998); Fornell (1981).The results in Fig. 1 indicate that all constructs of the investigation exhibit strong internal consistency reliability, as seen by composite reliability and Cronbach's alpha values significantly exceeding the 0.7 threshold. The findings from the construct loadings, convergent reliability, and AVE affirm the internal consistency and convergent validity of the constructs. The results indicated that all important constructions accurately represented their respective core conceptions, based on parameter estimations and statistical inference. The model's constructs are hence enough convergent valid.

Table 2: Composite Reliability and Convergent Validity:

Variables	Cronbach Alpha (CA)	Composite Reliability (CR)	Average Variance Extracted(AVE)
Halo Bias	0.754	0.812	0.729

Table 3: Summary of Factor Loadings of the Constructs

Construct	Items	Factor Loadings
Halo Bias (HB)	HB1	0.677
	HB2	0.886
	HB3	0.609
	HB4	0.941
	HB5	0.712
Individual Investors' Investment Decision Making (ID)	ID1	0.795
	ID2	0.793
	ID3	0.871

In this section cross loadings are analysed. The recommended value should be 0.5 or higher than 0.5 as elaborated by (Chin, 1998). Items having extremely low loadings are to be deleted. Here low reading means values less than 0.4 (Hair et al., 2014). Every construct measure must also be significantly weighted on the related construct, among other requirements. If the factor loading values for the allocated build are greater than 0.50, the factor loading indications for the remaining constructs must be increased in value. The outer loadings of the item are more than the cross loadings of the other constructs, as shown in Table 1, hence the loadings must be greater than 0.5. There were no cross-loadings between indicators, as evidenced by the fact that all indicators correctly loaded over their corresponding constructions as expected.

Table 4: Cross-Loadings of the constructs to assess Discriminant Validity:

Items	**HB**
HB1	0.709
HB2	0.763
HB3	0.738
HB4	0.867
HB5	0.886
ID1	0.682
ID2	0.635
ID3	0.657

Note: HB = Halo Bias, Individual Investors Decision Making.

4.3 Assessment of Structural Model:

The researcher determines if the dependent variable is strongly impacted by independent variables while evaluating the structural model. The hypothesis is evaluated while the researcher looks at the connections between the variables. Bootstrapping is one method for achieving this. Path coefficients are used to display the results of the bootstrapping. To demonstrate the significance of the link between the independent and dependent variables, T statistics must essentially be higher than 1.96. Original sample (O) divided by standard deviation yields T statistics. Original Sample (O), also known as Beta coefficient, must fall within the range of +1 and -1 to get correct results; if it does, it is substantial and has a greater impact. The presence of a substantial correlation between the independent and dependent variables would be indicated by a p-value that is lower than 0.5.

Table 5 Results of the Structural Model Path Coffecients:

	Original Sample (O)	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**t Statistics (O/STDEV)**	**p values**	**Decision**
FB -> ID	0.146	0.146	0.051	2.834	0.005	Supported

Numerous cognitive biases exist, among which the Halo Effect, is particularly prominent, undoubtedly influencing individual investors' decision-making about the PSX. They understand that when The Halo Effect leads investors to exhibit an optimistic perception of a company and choose to invest without more examination, the results of investment decisions are likely to be biased (Husnatarina, 2022). This action frequently results in elevated stock prices that typically exceed fair value, since the investor holds a comparatively favorable view of the firm in question. It is apparent that, similar to other scholars, the methods employed to disseminate investment information and the manner of its presentation, particularly the focus on positive returns over losses, have partially influenced the observed behavior of investors (Jamal, 2024).

5. Conclusion and Recommendations:

This research is among the limited studies examining the factors affecting stock investment decisions via the lens of behavioral finance conducted in Pakistan. This study seeks to utilize a diverse array of behavioral parameters to investigate their impact on Pakistani individual investors, contrasting with prior research that predominantly focused on a limited set of behavioral factors, such as the herding effects highlighted by Naila and Nadeem (2017). This study indicates an increase in the frequency of behavioral finance applications in frontier and emerging stock markets.

The research indicates that Halo bias, impact individual investors' decisions at PSX. Consequently, investors must cultivate awareness prior to scheduling an investing consultation and should guard against these prejudices. They should remain unaffected by the views and behaviors of others throughout the formulation of investment judgments. Furthermore, people want to regulate their mental state and perceptions of well-being or fortune about investments. They should also refrain from being misled by the notion that a single product delivering substantial profits guarantees overall success. This assertion does not suggest that other items from the aforementioned firm will likewise exhibit favorable returns.The study's subjects are from Pakistan, and it employed behavioral finance through 5-point Likert scale evaluations. Additional research is necessary with a larger sample size and a more diverse participant group to validate the findings of this study. Additional study is necessary to enhance and refine behavioral finance indicators to better align with Pakistan's securities market. Future study should employ behavioral finance to investigate how the behaviors of institutional investors affect their selections in the Pakistani stock markets. This research can ascertain the suitability of applying behavioral finance across various securities markets and investor types.

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