

Influence of Behavioral Biases on Investment Decisions: Evidence From Selected Sri Lankan Investors

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Abstract

This study examined the impact of psychological biases in financial investment behavior at the Colombo Stock Exchange with evidence from selected Sri Lankan investors. The research population was the current and potential individual investors of the Colombo Stock Exchange. Snowball sampling technique was used to determine the respondents of the study and the sample consisted of 80 respondents. The survey questionnaire was prepared based on previous research and collected data through a questionnaire survey. Descriptive statistics, factor analysis, correlation analysis, Cronbach's alpha test, and multiple regression analysis were used to analyze the data. The results show that four behavioral biases, namely, heuristic, herding, prospect, and market variables, significantly impact the investors' financial behavior. Moreover, the herding, prospect, and market variables have a moderate impact whereas, the heuristic has a high impact. Thus, there is a significant relation between the investors' financial decision behavior and their behavioral biases.

Keywords: *behavioral finance, Colombo Stock Exchange, investment decisions, behavioral factors*

1. Introduction

In modern economics, it is assumed that humans are rational agents who attempt to maximize wealth while minimizing risk. However, according to Somil (2007), maximization values, self-interest principles and clear choices usually underpin the rational economic factor. Behavioral finance overviews the main theoretical

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foundations and touches the practical issues of causes or biases. Human decisions mainly depend on their nature, intuitions, habits, and cognitive or emotional biases hidden in their minds. Although behavioral finance is still a contentious topic, financial analysts have better understandings of human behavior, and it is accepted that behavior can influence financial decision-making. Behavioral finance consists of both sociological and psychological factors. Psychological studies explain that human judgment, behavior and actions can also provide essential facts about how human actions differ from traditional economic assumptions (Adam, 2010).

Contrary to traditional finance's assumptions and hypotheses, many irrational activities relevant to investment judgment occur in real life. The behavioral finance theories highlighted that individuals have limited access to information and are bound by external constraints and their own psychological, behavioral constraints. Therefore, to have better investments, investors should overcome these constraints. According to our knowledge, many previous studies related to psychological biases in financial investment behavior focus on registered investors in financial markets. This study contributes to the literature by analyzing both current and potential investors' psychological biases in their financial investment behavior. Thus, this study assesses the impact of behavioral biases on the investment behavior of individual investors.

2. Review of Literature

Traditional finance theory pays primary attention to the efficient market hypotheses claiming that the markets are efficient, investors are rational, and securities are valued rationally (Somil, 2007). On the other hand, behavioral finance is a novel concept that combines psychological theories and behavioral theories with traditional economics and finance to explain why people are irrational in decision-making. Heuristics are defined as the rules of thumb, making decision-making easier, especially in complex and uncertain environments by reducing the complexity of assessing probabilities and predicting values to more straightforward judgments (Kahneman & Tversky, 1974). Kahneman and Tversky (1974), being one of the first studies, introduced three factors belonging to heuristic factors such as representativeness, availability bias and anchoring. As per Barkar and Yi (2016), the factors of the market that have an impact on investors' decision making are the price changes, market information, past trends of stocks, customer preference, over-reaction to price changes, and fundamentals of underlying stocks. Furthermore, Barkar and Yi (2016) concluded that the market information has a very high impact on decision making and also, it may tend to focus on popular and hot stocks.

Prospect theory describes the states of mind affecting an individual's

decision-making processes, including regret aversion, loss aversion and mental accounting (Barkar & Yi, 2016). Regret is an emotion that occurs after making some mistake, and investors regret more when holding losing stocks for too long and selling winning stocks too soon. People are more worried at the prospect of losses than they are gratified by the same amount of gain (Barkar & Yi, 2016). Mental accounting helps investors organize their portfolios into discrete accounts (Barberis & Thaler, 2003). The herding effect in the financial market is recognized as the propensity of the investors to follow others' actions. It means investors make their decisions based on the other investors' behavior in the financial markets. Barkar and Yi (2016) identified that buying and selling decisions, choice of stocks, the volume of stocks and length of time to hold stocks decisions are influenced by other investors' decisions. Also, they concluded that others' decisions significantly affect buying and selling decisions while the remaining three decisions are less impacted by others' decisions. Luong and Thu Ha (2011) investigated behavioral factors influencing individual investors' decision-making and performance in the Ho Chi Minh Stock Exchange survey. The findings showed that five behavioral factors affect individual investors' investment decisions. They are herding, market, prospect, overconfidence and anchoring and ability bias. Most of these factors have a moderate impact, whereas the market factor has a high impact. That study found that only three factors are influencing the investment performance: herding (including buying and selling; choice of trading stocks; the volume of trading stocks; the speed of herding), prospect (including loss aversion, regret aversion, and mental accounting), and heuristic (including overconfidence and gamble's fallacy). The heuristic variables have the highest positive impact on the investment performance while the herding behavior positively influences the investment performance at the lower level.

On the other hand, prospect behaviors harm investment performance. Khan (2014) states that it is better to understand investor psychology when deciding on investment decision-making patterns. This study considered two behavioral factors, namely herding and framing effect, to explore their influence on investment decisions in Pakistan. The results of the study present that both framing and herding effects have a significant positive relation with investment performance. The results also show that framing and herding effects significantly influence perceived stock market investment performance, whereas financial literacy has a moderating relation with framing effect and perceived stock market investment performance. Most of the conventional researchers identified the behavioral biases that affect the financial investment behavior of the registered investors (Khan, 2014). The current study highlights the behavioral biases that impact the current and potential investors in the market.

3. Methodology

This study is based on behavioral finance and categorized under quantitative research. The population is all current and potential Sri Lankan individual investors in the stock market. The study uses a convenient and snowball sample of 80 respondents, including investors, students of finance, bank officers, executives and managers in the Sri Lanka stock market. This study did not use a sampling frame. Closely connected relatives, friends, eminent persons and employees from different CSE investors were selected as the first respondents to the sample. The first respondents were requested to recommend another investor with their connections and social linkages. The data have been collected through a self-administrated questionnaire where the questionnaires consist of three sections: the demographic variable, investment decisions, and behavioral factors. The questionnaire was pre-tested through a pilot study conducted previously. The structured questionnaire includes four variables and ten questions. The scale questions were measured using a 5-point Likert scale, which is widely exercised to obtain the results of the respondents. The five points in the scale are from 1 – 5, respectively, 1 being *strongly disagree* and 5 being *strongly agree*.

Table 1: Rotated Component Matrix

Item	Factor			
	1	2	3	4
You prefer to buy local stock than international stock because the information of local stocks is more available.	.491			
When it comes to trusting people, I can usually rely on my “gut feelings”	.506			
Other investors’ decisions of buying and selling stocks have impact on your investment decisions.		.546		
You usually react quickly to the changes of other investors’ decisions and follow their reactions to the stock market.		.686		
After a prior loss, you become more risk averse			.482	
You avoid selling shares that have decreased in value and readily sell shares that have increased in value			.778	
You tend to treat each element of your investment portfolio separately			.733	
You put the past trends of stocks under your consideration for your investment				.720
Market information is important for your stock investment.				.672
You consider carefully the price changes of stocks that you intend to invest in				.582

Source: Survey Data 2020

The collected data were cleaned by removing the responses with poor quality, such as many missing values and bias ratings. Next, the reliability of the variables was measured by their Cronbach's alpha values. Then, descriptive, correlation and multiple regression analyses were done. The descriptive statistics represent the respondents' demographic profile. Next, the factor analysis was applied to explore the most relevant factors that explain a higher impact on investors' decision-making and investment performance and measure the impact levels of variables on decision-making by using mean values. Finally, multiple regression was performed to determine which behavioral factors affect the investment performance of individual investors in Sri Lanka.

4. Findings and Discussion

The overall Cronbach's Alpha for the five items ($\alpha = .724$) indicates a higher level of internal consistency. Table 1 shows that ten variables affect investment decisions. Heuristic factors were loaded onto factor 1, herding factors were grouped onto factor 2, prospect factors were loaded onto factor 3, and market factors were loaded onto factor 4. As such, four behavioral factors influence the investment decisions of individual investors in Sri Lanka.

The impact levels of the behavioral factors on investment decisions are recognized by using the sample mean values of each variable as per the literature review. As such, among the heuristic variables, the availability bias has the strongest impact on the investors when they decide to trade stocks, which means individual investors more rely on the familiar and available sources of information for their stock investment such as the information supplied by their relatives or friends and coming from the local rather than international sources. The variables considered in evaluating the herding factor on the investment decisions of individual investors are choice of stocks, the volume of stocks, buying and selling decisions of other investors and the opinions of family members and friends. This means there is a moderate impact of herding effect on the individual investors at CSE. In the dimension of prospect, all its three kinds of behavior: loss aversion, regret aversion and mental accounting have their representative variables influencing the decision making of investors' stock investment. Individual investors at the stock market have loss aversion ($M = 3.84, SD = 1.277$), regret aversion ($M = 3.79, SD = 1.328$), and mental accounting ($M = 3.51, SD = 1.180$), at a moderate level. The market factor, i.e., changes of stock price ($M = 3.79$), market information ($M = 3.94$), and past trends of stocks ($M = 3.43$), highly affects individual investors' investment decision-making. This means the individuals tend to consider general information, past trends of stock price and current stock price changes carefully before making their investment.

Table 2: Coefficients

$R^2 = .331$, Adj. $R^2 = .325$, SE = .817, D-W statistic = 1.629					
Variable	Unstandardized B	SE	Standardized Beta	<i>t</i>	<i>p</i>
Constant	.956	1.842		0.519	.115
Herding	.013	.060	.022	3.217	.014
Prospect	-.001	.104	-.001	3.276	.008
Market	.387	.102	.341	3.781	.007
Heuristic	.415	.095	.392	4.381	.000

Source: Survey Data 2020

According to Table 2, herding, heuristic, market, and prospect cause 33.1 percent variation in the dependent variable ($R^2 = .331$). Any field that attempts to predict human behavior, such as psychology, typically has predictive power of less than 50 percent. Human behavior is harder to predict. According to Table 2, herding has a positive impact on investment performance ($\beta = 0.22$, $p = .014$). Prospect does not affect the investment performance ($\beta = 0.001$, $p = .008$). Further, the market positively affects the investment performance of individual investors ($\beta = 0.341$, $p = .007$). Finally, heuristic has a positive impact on individual investors' performance ($\beta = 0.392$, $p < .001$).

5. Conclusion

In summary, all the behavioral factors have a positive and significant influence on the investment performance of individual investors in Sri Lanka. Based on the results of factor analysis, this study identified four factors influencing investor's decision making and investment performance, namely herding, prospect, heuristic and market factors. More precisely, based on the investors' responses, factor analysis grouped the variables into four factors. Herding factor consisted of the items on the choice of stocks, the volume of stocks, buying and selling stocks and speed of herding. Further, the prospect factor consisted of loss aversion, regret aversion, and mental accounting. Market factor has three items, namely price changes, market information and past trends of stocks. Finally, the heuristic factor consisted of overconfidence, anchoring and availability bias. The heuristic factor has a high impact on investment decision making while herding, prospect, and market factors have a moderate impact on individual investors' decision making at CSE. As per Kengatharan and Kengatharan (2014), four factors of herding, heuristic, prospect, and market, have a moderate impact on decision making while the choice of stock types under herding factor has low impact and reliance on previous experience under heuristic factor has a strong impact (Kengatharan

& Kengatharan, 2014). This study is based on 80 respondents selected using the snowball sampling technique and the investors from three stock brokerage firms.

Further research can be done with a more extensive and more diversified sample of respondents from CSE. Further, future studies can focus on other behavioral variables such as representativeness, Gamblers Fallacy and customer preferences. Also, this research only examined the individual investors in CSE, and further research can study the behavioral factors that influence the institutional investors such as banks, insurance companies, and equity investment companies. This study also suggests researching with the respondents from selective sectors in CSE such as land & property investors, investors in the plantation sector, the manufacturing sector, bank & finance sector to discuss how behavioral factors may affect investors in different sectors.

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