Role of heuristic on individual investment performance

Pratheepan, N[a] and Rathiranee, Y[b]

[a]*University of Jaffna, Sri Lanka*
[b]*Department of Financial Management, Faculty of Management Studies and Commerce, University of Jaffna, Sri Lanka*

[a]nadarajahpratheepan30@gmail.com

Abstract

This study's main objective is to investigate the role of heuristic behaviour on the investment performance of individual investors at Colombo Stock Exchange (CSE). Investment needs for effective use of accumulated money and, in return receiving the optimal return. Therefore, the stock market plays a backbone to the economy's development by extending the country's investments, especially for Sri Lanka as a developing country. This study begins with the heuristic theory in behavioural finance, based on which a hypothesis is proposed. Then, these hypotheses are tested through the questionnaires distributed to individual investors. The sample size is 100 individual investors, those respondents were selected under the Proportionate stratified random sampling method. The collected data are analyzed by using SPSS. Statistical techniques include Correlation Analysis and Regression Analysis. The result shows that, overall Heuristic factors have a positive significant influence on investment performance. In addition to this, while individual factors wise analysis, Representativeness and Anchoring variables have significant influence, whereas other factors namely Availability bias, Gambler's fallacy and Overconfidence, which do not have a significant influence on investment performance.
Keywords:behavioural finance, Colombo Stock Exchange, investors' heuristic behaviour and investment performance

Introduction

Nowadays, investors' behaviour and investment performance are vary in nature due to changes in investors' mindset time to time. This study's main objective is to investigate the role of heuristic behaviour on the investment performance of individual investors at Colombo Stock Exchange (CSE). Sewell (2001) defined behavioural finance as the study of the influence of psychology on financial practitioners' behavior. Behavioral finance theories present an opposing view to traditional finance and assume that investors are not entirely rational when making investment decisions (Subramaniyam & Velnamby, 2017). Behavioural finance theories include Heuristic Theory, Prospect Theory, Herding and Market effect. In this study, the Researcher has selected the Heuristic theory to investigate its influence on investment performance. Heuristics are defined as the rules of thumb, making decision-making easier, especially in complex and uncertain environments (Ritter,
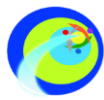
2003). People raised in Asian cultures are trapped by behavioral biases more than in Western cultures (Yates et al., 1989). After the civil war, in Sri Lanka, opening the CSE branch in Jaffna is a good mile stone to Northern people to improve their financial strength by investing their money at the stock market.

Research Problem

Behavioral finance is still a new topic for study. Asian investors usually suffer from cognitive biases more than people from other cultures (Kim & Nofsinger, 2008). There are only few studies about Asian countries that can be found; some of them belong to Kim and Nofsinger (2008), Yates, Lee and Bush (1997). Kengatharan and Kengatharan (2014) studied that the behavior factors influence individual investors' decisions and performance at the CSE in Sri Lanka. Conclusion this study concluded that overconfidence and Anchoring from heuristics factors have a positive influence on investment performance. Subramaniyam and Velnampy (2017) studied the Role of behavioral factors in household investors' investment decisions in the Northern Province of Sri Lanka. That study concluded that Representativeness bias, Overconfidence bias, Availability Bias, Loss Aversion bias, Regret Aversion bias, and Herding play a significant role in household investors' investment decisions.

As there are limited studies about behavioral finance in Sri Lanka, this study is expected to contribute significantly to the development of this field in Sri Lanka to enhance the development in Northern Province. The research question for the study is as follows,

- to what extent the Heuristic factors influence on the investment performance?

Objective of the study

- to investigate the role of heuristic factors on investment performance.

Literature Review

Being different from Efficient Markets Hypothesis (EMH) theory, behavioral finance believes that financial markets sometimes do not have informational efficiency. Heuristics are defined as the rules of thumb, making decision-making easier, especially in complex and uncertain environments (Ritter, 2003) by reducing the complexity of assessing probabilities and predicting values to simpler judgments. Heuristics theory, as three factors namely representativeness, availability bias, and anchoring (Kahneman & Tversky, 1974). Then Waweru et al. (2008) also listed two factors named Gambler's fallacy and Overconfidence into heuristic theory.

Representativeness refers to the degree of similarity that an event has with its parent population (DeBondt & Thaler, 1995). Gamblers' fallacy arises when people predict inaccurately the reverse points considered the end of good (or poor) market returns (Waweru et al., 2008). Anchoring is a phenomenon used when people use some initial values to make estimation, which are biased toward the initial ones as different starting points yield different estimates (Kahneman & Tversky, 1974). When people overestimate their knowledge and skills' reliability, it is the manifestation of overconfidence (DeBondt & Thaler, 1995). In the stock trading area, this bias manifests itself through the preference of investing in local companies that investors are familiar with or easily obtain information, despite the fundamental principles (Waweru et al., 2003). Oberlechner and Osler (2004) identifed the level of impacts of overconfidence on investment performance measured by investment return rate and trading experience.

In this research, five components of heuristics, namely Overconfidence, Gambler's fallacy, Availability bias, Anchoring, and Representativeness, are used to measure their impact levels on individual investors' investment performance CSE.

Methodology
The population of the study was active individual investors at CSE in Northern Province. One hundred individual investors (They belong to Jaffna (78), Vavuniya (18) and Mannar (4)) are selected as the sample size from 900 active investors.

The researcher used the primary data collection method for this study. Therefore, Questionnaires are sent to respondents using stratified random sampling. Sample selected by stratifying the population by a criterion of the number of investors in each Districts and based on individual investors' monthly income. The number of questionnaires sent to each security company such as Asha Phillip Securities Ltd, BartleetReligare Securities (Pvt) Ltd, Capital Alliance Limited and Softlogic Stockbrokers (Pvt) Ltd through the branch manager of CSE – Jaffna Branch.
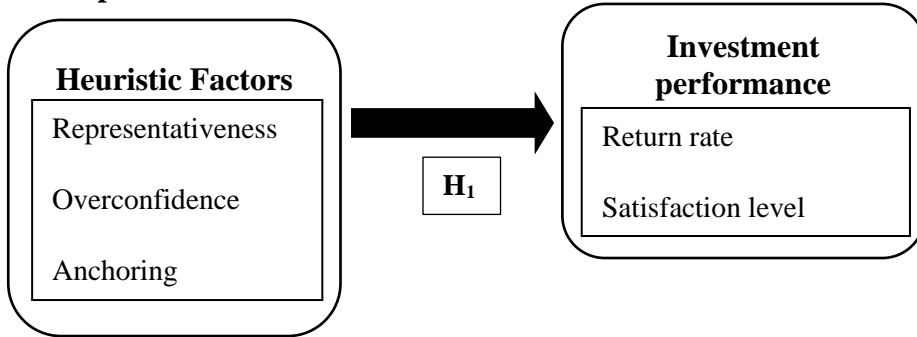
Conceptual Framework

Fig 1. Conceptual Framework

Hypotheses of the study

H_1:   The heuristic factors have influence on the investment performance of individual investors at the CSE in Northern Province.

In order to test the influence of heuristic factors on the individual investment performance hypothesis has been divided into four parts as follows:

H_{1A}:   Representativeness factor has an influence on investment performance.
H_{1B}:   Overconfidence factor has an influence on investment performance.
H_{1C}:   Anchoring factor has an influence on investment performance.
H_{1D}:   Gamblers' fallacy factor has an influence on investment performance.
H_{1E}:   Availability bias factor has an influence on investment performance.

Results and Discussions

The Cronbach's alpha was used to measure of random reliability errors. The reliability coefficient of all indicators of investment performance was 0.744, which indicated acceptable reliability. The data analysis has done through SPSS. Then, statistical techniques include Regression Analysis and Correlation Analysis.

Table 1. Summary of regression analysis

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	SE	Beta		
1 (Constant)	1.904	.593		3.211	.002
Representativeness	.176	.078	.222	2.239	.027
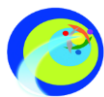
Overconfidence	.075	.054	.139	1.378	.171
Anchoring	.165	.072	.228	2.301	.024
Gambler's fallacy	.013	.073	.019	.182	.852
Availability bias	.183	.102	.179	1.794	.076

$R^2 = 0.112$ F=2.351   P= 0.047[b]

According to the Regression Analysis, the value of R- square for the model is 0.112. This means that 11.2 percent of the variation in CSE's investment performance (dependent variable) can be explained from the five independent variables, namely Representativeness, Overconfidence, Anchoring, Gambler's fallacy Availability bias. The model is statistically significant (F ratio = 2.351, probability level (p) = 0.047) because the probability level is less than 0.05.

The following model was used to investigate the relationship between independent and dependent variables:
$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$
$$Y = 1.904 + 0.222 X_1 + 0.139 X_2 - 0.228 X_3 - 0.019 X_4 + 0.179 X_5 + \varepsilon$$

According to the Correlation Analysis (Ref. Table 2), there is a statistically positive weak relationship between Representativeness & Anchoring and investment performance. There is statistically no relationship between the Overconfidence, Gambler's fallacy and Availability bias and investment performance of investors.

Table 2. Summary of Hypotheses Testing

H1	Hypothesis	Hypothesis result
H1A	Representativeness factor has an influence on investment performance.	F ratio = 2.239 p = 0.027 r = 0.222 **Accepted.**
H1B	Overconfidence factor has an influence on investment performance.	F ratio = 1.378 p = 0.171 r = 0.139 **Rejected.**
H1C	Anchoring factor has an influence on investment performance.	F ratio = 2.301 p = 0.024 r = 0.228 **Accepted.**

H1D	Gambler's fallacy factor has an influence on investment performance.	F ratio = 0.182 p = 0.852 r = 0.019 **Rejected**.
H1E	Availability bias factor has an influence on investment performance	F ratio = 1.794 p = 0.076 r = 0. 179 **Rejected**.

Therefore, the overall statistical analysis result shows that the Heuristic factor has a significant positive influence on investment performance. In addition to this, while individual factors wise analysis, Representativeness and Anchoring variables have significant influence, whereas other factors, namely Availability bias, Gambler's fallacy and Overconfidence, which do not have a significant influence on investment performance. This result conforms of the results of Kengatharan and Kengatharan (2014).

Conclusions and Recommendations

This study has attempted to investigate the role of influence of heuristic behaviour on the investment performance of investors. Therefore, the study has been successfully completed by achieving the research objectives and answering the research question. The researcher concluded that overall, Heuristic factors have a significant positive influence on investment performance while Representativeness and Anchoring variables have significant influence and other variables do not have a significant influence on investment performance. These findings support the investors in enhancing their investment's performance by managing their heuristic behaviour due to significant influence on investment performance. This study expects to provide a good background about behavioral finance concepts to the security organizations for the prediction of future stock-market trend and give reliable information to the investors because concepts of behavioral finance are relatively new compared to other financial theories.

It is suggested that CSE investors should consider their skills and abilities to improve their investment outcomes. Therefore, investors should carefully make their investment decisions as rational investors and plan their structured portfolio through diversification mechanism by getting guidance from financial experts and stock brokers. Investors should use effective information sources to obtain the information such as CSE's online trading and communicate through the phone calls with brokerage companies. It will minimize their operational cost of investment and save their money for future investments. Investors should select good partners and create a coalition or association with them as an investment source. In addition to these efforts,

Government authorities should also conduct investment training and awareness programmes to the region's investors.

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