

Irrational Behaviour and Stock Investment Decision. Does Gender Matter? Evidence from Sri Lanka.

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Abstract

The research aims to examine the effect of irrational behaviour of individual investors on stock investment decision, specifically, anchoring, disposition effect, home bias, herding, overconfidence and the risk perception. The research further investigates the moderating role of gender between irrational behaviour and stock investment decision. Finally, it reveals which irrational behaviour is most prevalent. A survey collected the primary data from 432 individual investors. The survey evidence shows that, of six irrational behaviours, anchoring, disposition effect, overconfidence and risk perception effect the investment decision of individual investors, and risk perception comes out to be the significant irrational behaviour on stock investment decision. The research further explores that gender has a significant moderation for anchoring, disposition effect, herding, overconfidence, risk perception, and stock investment decision. We recommend that if individuals are aware of the behavioural biases, it will help them for making the right stock investment decisions. The study also relevant for financial advisors, stockbrokers and policymakers as it facilitates them in gaining a better understanding of their clients' irrational behaviour. The present study gives a unique insight into the individual investors' profile of gender corresponding to each main irrational behaviour on investment decision under consideration of stock investment.

Key-words: Irrational Behaviour, Behavioural Bias, Investment Decision, Stock Market, Gender, Behavioural Finance

1.0 Introduction

In recent decades, stock market investment extensively studied in traditional financial perspectives (Toma, 2015). The traditional financial theories; Capital Asset Pricing Model (Sharpe, 1964), Expected Utility Theory (Lintner, 1965), and Efficient Market Theory (Fama, 1970) elaborated upon financial 'risk and return' in the investment decisions. The theoretical frameworks suggested in finance literature based on human rationality's norm – the investor behaves as if he maximises the desired benefit (he maximises his welfare in the financial sense). Neumann and Morgenstern (1947) introduced a mathematical model for investment selection in the stock market. These normative theories intended to clarify or predict outcomes in theoretical constraints (Rawls, 1971). However, traditional financial models failed to explain stock market anomalies and the validity assumptions (Takahashi & Terano, 2003). Traditional theories assume the rationality of investors and rational decision (Sharpe, 1964; Lintner, 1965; Fama, 1970). However, investors frequently suffer from cognitive and emotional biases and tend to be behaving irrationally in real life. Hence, behavioural factors are of significant concern in stock investment decision (Kahneman Tversky, 1979). As a result, behavioural finance theories help to understand the explanations of traditional finance theories behind such anomalies. Thus, emotions, feeling, and instincts control their choices and contribute to irrational behaviour (Kahneman and Tversky, 1979). Further, previous studies have mainly looked at whether the behavioural factors of investors effect the stock market in developed countries (Kahneman, 2003; Tom et al., 2007), and provide conflicting evidence among countries; the complex finance model needs to research within the context of Sri Lanka (Hilts, 2016). Thus, the current research sought to fill the gap in rational financial theories relevant to stock investment decision and examine irrational behavioural causes, such as anchoring, home bias, and disposition effects, herding, overconfidence and risk perception.

On the other hand, Pompian (2008) suggests that behavioural biases vary between countries and rely on the gender of investors (Kalra et al., 2012; Phan & Zhou., 2014; Ton & Dao, 2014). Several prominent researchers in behavioural finance found that male investors are more over-confident than female investors (Hilton, 2001; Sahi et al., 2012; Salman et al., 2012; Ton & Dao, 2014; Prasad et al., 2015; Toma, 2015). Female show a significant disposition effect than male, and female showed herding behaviour and followed others decision for investment (Lin, 2011). Kudryavtsev and Cohen (2011) find that anchoring measures are significantly higher for women with a high level of risk aversion. Contrarily, Gunathilaka (2014) concluded that gender does not effect the decision of investors. All this previous evidence measured the direct effects of gender and its relationship with investor decision. Nevertheless, the existing studies in behavioural finance failed to explore the effect of gender on the relationship

between irrational behaviours and investment decision, further there is no vital published research on the moderating role of gender through irrational behaviour and investment decision. Therefore, the current research primarily measures the effect of irrational behaviour on investment decision, and examines the moderating role of gender between investors' irrational behaviours and stock investment decision.

2.0 Literature review

2.1 Irrational behaviours and stock investment decision

The recent research on behavioural finance discusses the psychological and cognitive aspects of irrational decision. Investors tend to move away from the predictable and systematic way of optimal investment decision, because they are prone to emotional and psychological bias (Tourani & Kirkby, 2005). Kahneman & Tversky (1979) state that investor is irrational and individual psychological and cognitive factors effect the investment decision and deviate from rational thinking. These psychological and cognitive factors are known as discriminatory behaviour, which has rendered prospect theory a commonly accepted paradigm for explaining people's decisions in circumstances of risk and uncertainty, which has laid the groundwork for behavioural finance.

2.2 Anchoring

Tversky and Kahneman (1974) is a nominal researcher in anchoring theory, stated that people tend to make predictions of the probability of uncertain future events or remember other values or potential outcomes when considering the initial value. Subsequent decisions anchored around some previous information. Subsequently, many studies have demonstrated the prevalence of the anchoring effect in human decision-making processes. Lowies et al. (2016) studied "Heuristic-driven bias in the decision of property investment in South Africa," stating that anchoring adjustment exists in the decisions of managers of property funds. The finding of the study has consisted of other studies (Kudryavtsev & Cohen, 2011; Leung & Tsang, 2013). Furthermore, in Financial Decision, Jetter and Walker (2017) have studied anchoring behaviour and indicated that anchoring has a substantial role in the decision. Thus, we propose the hypothesis,

H1: Anchoring has a significant effect on stock investment decision.

2.3 Disposition effects

The disposition effect stock trading is another crucial behavioural factor in decision, which makes investors more likely to sell the winning stock and relay the gains while postponing the investment decision when they predict the losses. Shefrin and Statman (1985) focusing on various elements of the behavioural framework, and the disposition effect was systematically analysed.

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Furthermore, Toma (2015) has revealed that investors avoid taking risks when they know that profits are secured but prefer to take risks if there is a higher possibility of potential losses. Salman et al. (2012); Cuong and Jian (2014), and Kumar and Goyal (2015) also endorsed this argument for the disposition effect in several empirical research evidence. Previous studies have also confirmed the existence in the decision process of a disposition effect (Locke & Onayev, 2005; Locke & Mann, 2005; Barber et al., 2007). Thus, we propose the hypothesis, to achieve the objectives of the current research, the researcher framed the following hypothesis:

H2: The disposition effect has a significant association with the stock investment decision.

2.4 Herding behaviour

Herding behaviour refers to the propensity of people to mimic the opinions of others while making decisions. Herding observed as another irrational behaviour among investors and as a market-wide practice. Al-Tamimi (2006) stated that individual investors' decision is compromised and more vulnerable to unintentional herding. Other empirical findings of Iqbal and Usmani (2009), Goyal (2015) are also confirmed the herding behaviour in the stock market. Grinblatt et al. (1995) and Wermers (1999) also demonstrated the herding behaviour of mutual funds and institutional investors in the US market. Fernandez et al. (2011) indicated that the uncertain availability of information and investors are more likely to mimic other decisions. Thus, we propose the hypothesis,

H3: Herding has a significant effect on stock investment decision.

2.5 Home bias

Home bias appears to devote too much of their overall portfolio to domestic equities and too little to international equities. Initially, French and Poterba (1991) provide evidence that investors often focused on local stocks in their investments. Investment barriers, transaction costs, and information asymmetry might be the reasons behind home bias behaviour. Among the empirical studies, Kilka and Weber (2000) revealed that more investors considered themselves to be more competent in predicting stock prices at the home front than in foreign markets. Findings of Schoemaker and Soeter (2014) indicated a significant decrease in EU stock and bond bias among the EU countries. Furthermore, Ahearne, Grier, and Warnock (2004) examined the interaction between information costs and home bias in US investor investment decisions and found a strong negative association between home bias and US investment portfolio. Thus, we propose the hypothesis,

H4: Home bias has a significant effect on stock investment decision.

2.6 Overconfidence

Overconfidence is a common bias in decision such that people are more confident in their skills and overlook the investment risk. Several Empirical studies examined how the overconfidence behaviour of professional's effect on rational investment decision, such that investment bankers (Holstein, 1972), entrepreneurs (Cooper et al., 1988), managers (Russo & Schoemaker, 1992), and chief executive officers (Malmendier & Tate, 2005) and family business (Tsai et al., 2018) were found overconfidence in decision. Daniel et al. (1998) state that "overconfident investors underreact to public and overreact to private signals in stock investment". Bakar et al. (2016) also found that overconfidence and choice of stock also negatively affect individual investors' decision . Thus, we propose the hypothesis,

H5: Overconfidence has a significant effect on stock investment decision.

2.7 Risk Perception

Risk is typically one of the main determinants of investment decision —limited information exposed to different interpretations of the risk to individual investors. Several studies have found that perception of risk effects the decision of the investment. Ricciardi (2007) addressed risk tolerance, where investors feel safer at natural risk, depending on the type of investment. Veld and Merkoulova (2008) examined individual investors' risk perceptions and concluded various risk attitudes among individual investors while comparing two portfolios: stocks and bonds. Nguyen, Gerry, and Cameron (2017) analysed the combined effect of financial risk assessment and risk management on Australia's financial advisors' specific investment decisions. They stated all risk constructs' joint role in making investment decisions. Moreover, risk perception has also influenced new venture decision (Kannadhasan et al., 2014). Thus, we propose the hypothesis,

H6: Risk perception has a significant effect on stock investment decision.

2.8 Association between gender, irrational behaviours, and investment decision

Besides irrational behaviour, demographic characteristics of individuals significantly effect investment decisions via investors' behavioural bias. Several empirical examinations in behavioural finance found gender differences in investment decision (Barber & Odean, 1999, 2001a; Bhandari & Deaves, 2006; Prasad & Sengupta, 2015). Jayakumar and Kothai (2014) studies have found that gender has a significant effect on decision . Lin (2011) examined how personal characteristics effectd behavioural biases, and documented that gender explained the differences in behavioural biases, whereby females displayed more disposition effect than males. While males were more overconfident than females, also revealed that females were the most affected by herding, as they tend to follow other

investor's decision blindly. Several researchers have found that male investors are more confident than female investors in investment decisions (Ali et al . 2012; Chen et al . 2007; Hilton, 2010; Kalra Sahi et al . 2012; Prasad et al . 2015) and female investors are more risk-averse than male investors (Lascu, Babb, & Phillips, 1997; Kapteyn and Teppa, 2011; Muniraju et al., 2013). On the other hand, females exhibited a more significant disposition effect and higher anchoring behaviour than males (Kudryavtsev & Cohen, 2011). Thus, we propose the hypothesis,

H7: The effect of irrational behaviours, viz, anchoring, disposition effect, herding, home bias, overconfidence, and risk perception in investment decision have a moderating effect of gender, such that the relationship between irrational behaviours in investment decision is stronger or weaker for men than women.

03. Research design

The present study demonstrates how investors' behaviour effect decision and the moderating role of gender in the stock market. The study model assumes five constructs of irrational behaviour and explores how the effect of gender on all primary structures is perceived to be the moderator of the study. Figure 1 shows the conceptual framework of this research.

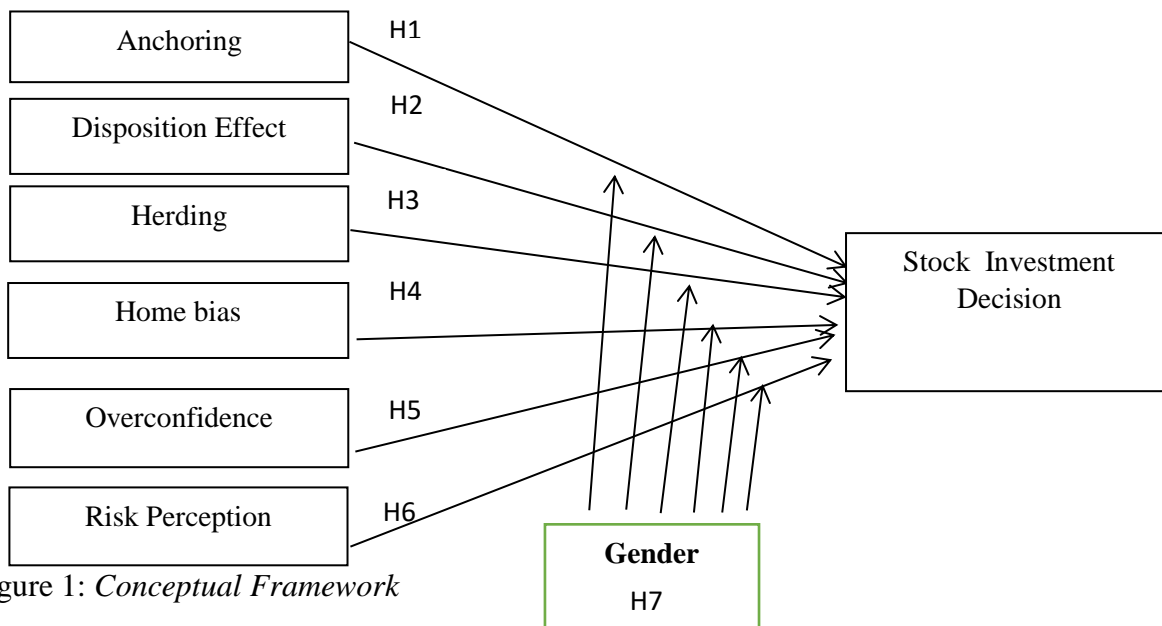


Figure 1: *Conceptual Framework*

3.1 Questionnaire design, data and sample selection

The research uses a survey questionnaire—Forty-four measurement items established in this research. After the experts' views have been taken into consideration to guarantee to construct authenticity, the questionnaire completed. The reliability of the questionnaire tested with alpha from Cronbach. The survey divided into three sections. Standardised questions included in section A, measuring irrational behaviours (anchoring, disposition effect, herding, home bias, overconfidence and

risk perception). Section B concerned with the standard measures related to decision on equity investments. The questions for demographic profiles were used in the last section C. Five-point scale for Likert with one as ‘strongly disagree’ and 5 for ‘strongly agreed’ is used to collect the scale strength of the relationship between behavioural variables and investment decision in all the questions found in the questionnaire.

The current research population is registered individual investors of the CSE in Sri Lanka. From February 2019 to July 2019, 580 questionnaires distributed through stock brokering firms as an online survey link. Upon eliminating incomplete questionnaires, a total of 432 valid respondents obtained. The data compiled and analysed using AMOS 20 and SPSS 20 tools after data collection. Confirmatory Factor Analysis (CFA) and Structure Equation Modelling (SEM) were supported in this study to respond to research objectives. The researcher used path-coefficients or regression to represent the theoretical model relationships (Hox & Bechger, 1998). The multi-group study used to measure the moderating effect of gender (Byrne,2010). Data analysis continued in two stages: first, we measured the overall quality of the measurement using Confirmatory Factor Analysis (CFA) to check the testing tool’s reliability and validity. We also examined the conceptual model to decide whether the model can match the findings of the theoretical models suggested.

4.0 Data Analysis and Finding

4.1 Demographic profile of the respondent

Table 1 shows the demographic profiles of the respondent, showing that the analysis consists of 220 males (50.9 per cent) and 212 females (49 per cent). Age 31-40 (43 per cent) was the largest part of the sample, with age 21-30 (27 per cent), age 41-50 (18 per cent), age 50 (8 per cent) and age 18-20 (4 per cent). 167 (nearly 41 per cent) investors show a bachelor’s degree, followed by Master (17 per cent), Advanced Level (nearly 13 per cent), Undergraduate (nearly 13 per cent), Other Professional (nearly 6 per cent) and GCE (O / L) and Lower (nearly 6 per cent) and PhD Degree (nearly 4 per cent). The highest percentage of investors recorded that stock market prices ranged from 0-3 months (53.6 per cent), followed by intraday (nearly 30 per cent), 3-12 months (nearly 11 per cent), 12-36 months (nearly 4 per cent) and (nearly 1 per cent) within 36 months or more.

Table 1: Respondents' Demographic Profile (n=432)

Profile	Investor group	Frequency	Percentage (%)
Gender	Male	220	50.9
	Female	212	49.1
Age	18-20	18	4
	21-30	118	27
	31-40	185	43
	41- 50	77	18
	50 +	35	8
Education	GCE (O/L) and lower	24	5.7
	GCE (A/L)	56	13.3
	Under-graduate	55	13.1
	Bachelor Degree	177	41.2
	Master	71	17.3
	PhD. Degree	17	3.7
	Professional	24	5.7
Stock Trading Frequency	Intraday	122	30.4
	0-03 months	232	53.6
	03-12 months	48	11.1
	12-36 months	16	3.7
	36 months or above	5	1.2

Source: survey data

4.2 Reliability and validity test

Table 2 shows the factors, reliability measurement, and the standard deviation. Kaiser Meyer-Olkin (KMO) calculated the adequacy of the sample at 0.883 and adopted the EFA assumptions. Cronbach's alpha was 0.885, 0.807, 0.916, 0.794, 0.857, 0.928, and 0.899 for herding anchoring, disposal effect, overconfidence in home bias, risk perception, and investment decision. The findings indicate that the internal reliability of the current research is agreed (Hair et al . , 2010).

In the sampling-adequate factor loading, the researcher tested KMO of each latent variable, below 0.5 is excluded and taking less (Hair et al., 2010). Firstly, we dropped six items in the constructs, named Overconfidence (OC) [OC5], Home Bias (HB) [HB5 and HB6], Disposition Effect (DE) [DE2], Risk Perception [RP4] and Investment Decision (ID) [ID 5], factor loading below the minimum level of 0.5. The standardised factor loads varied significantly from 0.571 (DE1) to 0.923 (A2) above the recommended level of 0.5 (Hair et al., 2010) for all items, Indicates that the validity and reliability of the scales are considered appropriate. Besides, the TVE evaluates the degree of variance explained with

a degree of difference due to the underlying factor's error of estimation (Hatcher, 1994). For each variable, a minimum of 50 per cent of TVE should be reached (Cummins and Lau, 2005). The AVE ranged from 0.50 (DE) to 0.74 (RP) above the minimum threshold of 0.50 for all latent structures (Fornell and Larcker, 1981) (Fornell and Larcker, 1981). For each construction, we have also tested Composite Reliability (CR). CR has reached a minimum threshold of 0.70 in all cases, and AVE reached in each case of CR, which shows strong convergence validity (Hair et al., 2010). The adequacy of the convergent validity of all constructions in this analysis has demonstrated. Finally, the correlation matrix proves to be discriminatory (Appendix 1).

Table 2: Internal Quality of Latent Variable

Latent Variable/Scale items	<i>Cronbach's alpha</i>	<i>Standardized Factor loading</i>	<i>t-value (CR)</i>	<i>Composite Reliability</i>	<i>AVE</i>
Anchoring	.885			.89	0.57
A1		.714	-		
A2		.923	17.584		
A3		.700	13.521		
A4		.706	13.642		
A5		.762	14.743		
A6		.680	13.166		
Disposition effects	0.807			.83	0.50
DE1		0.571	-		
DE3		0.776	10.732		
DE4		0.772	11.387		
DE5		0.695	9.277		
DE6		0.707	10.277		
Herding	.916			.92	0.65
HE1		.810	16.351		
HE2		.836	19.478		
HE3		.844	19.741		
HE4		.775	17.528		
HE5		.822	19.012		
HE6		.746	16.665		
Home bias	.794			.80	0.51
HB1		.622	-		
HB2		.655	10.320		
HB3		.830	11.601		
HB4		.728	11.079		
Overconfidence	.857			.86	0.55
OC1		.707	-		
OC2		.721	13.204		
OC3		.706	12.947		
OC4		.833	14.944		
OC6		.729	13.328		
Risk Perception	.928			.93	0.74
RP1		.876	-		
RP2		.823	21.576		
RP3		.842	22.500		
RP5		.903	25.658		
RP6		.852	19.240		
Investment Decision	.899			.89	0.54

ID1	.714	-
ID2	.815	15.299
ID3	.822	15.410
ID4	.782	14.720
ID6	.655	12.324
ID7	.672	12.659
ID8	.668	12.577

4.3 Structural Equation Model (SEM)

In this study, Structural Equation Modelling (SEM) tested the determinants of behavioural variables (anchoring, disposition effect, home bias, overconfidence, and risk perception) in investment decision. We confirm the cumulative Chi-square/degree of freedom for the model fit, shows 1.578, $P > .05$ ($p=.000$) and is similar to 3. Overall the result of the study shows Goodness of Fit Index (GFI) 0.884, Comparative Fix index (CFI) is 0.958 (Blunch, 2013), and RMSEA is 0.038 (Root Middle Square Approximate Error). The result suggested that RMSEA value for adequately fits is 0.05-0.08 (Kline, 2005). The results validate that the model is fit for further analysis (Annex 2).

Table 3: Results of irrational behaviour and stock investment decision

Unstandardised solution					Standardised solution.	Hypothesis results
	Estimate	SE.	CR.	P	Estimate	
ID. ← Anchoring (H1)	.278*	.112	2.474	.013	.216	Accepted
ID. ← Disposition effect(H2)	.257**	.084	3.077	.002	.157	Accepted
ID. ← Herding (H3)	-.080	.099	-.809	.478	-.071	Not accepted
ID. ← Home Bias (H4)	.060	.060	.306	.760	.015	Not accepted
ID. ← Overconfidence (H5)	-.190*	.079	-2.395	.017	-.153	Accepted
ID. ← Risk Perception (H6)	.614***	.063	9.741	.000	.556	Accepted

Note: Path significance: *** $p < .001$; ** $p < .01$; * $p < .05$.

First we purposed the hypothesis was to define and prioritise irrational behaviour that effect stock investment decision. The hypotheses, the study shows that the first hypothesis accepted, anchoring has a significant positive effect on the stock investment decision . The result was similar to the finding of Ishfaq & Anjum, 2015 and Gert et al., 2016. Furthermore, hypothesis 2 is accepted, implying that the disposition effect positively effects stock investment decision. This relationship expected because the disposition effects are optimistic and can effect their behaviour. The results are consistent with the results of Kumar and Goyal (2016), Ali Qureshi et al. (2012), Curong and Jian (2014), and Muradoglu (2012).

Besides, Hypothesis 3 can not be accepted since no significant relationship exists between the decision of herding and investment in stocks. The result was an insignificant negative association between herding and stock investment decision than initially hypothesised. The results confirm the results of Kumar and Goyal (2016), Ali Qureshi et al. (2012), Curong and Jian (2014), and Muradoglu (2012). This result is a similar finding with Loung (2011), Bakar et al., (2016), Gamage and Sewwandi (2016). However, the results inconsistent with Al-Tamimi, (2006), Ton and Dao (2014), Phan and Zhou (2014). Hypothesis 4 is also not accepted since no significant association found between home bias and stock investment decision . This result contradicts Brown et al., (2005) findings, who have found that individuals with home bias tend to invest in stocks to their overall portfolio to domestic equities. Meanwhile, the results consist of Schoenmaker and Soeter (2014) that home bias does not predict in the European investment decision.

Hypothesis 5 is accepted, which indicates that the over-confidence and stock investment decision have a statistically significant negative association. Previous findings suggest that overloading information is to over-confident investors. A logical explanation is that people who are over-confident think and act more impulse fully. This result is a similar finding with Bakar et al. (2016), Kengatharan (2014), Ton and Dao (2014), and Phan and Zhou (2014).

Hypothesis 6 is also acceptable, which shows that risk perception has a positive effect on stock decision . The result is consistent with Ricciardi's (2007) finding showing that risk increases when investors invest more assets indicate that current research has supported previous findings, there is a significant positive association between perceived risk and stock investment decision . Moreover, the above findings also confirmed with the results of Kannadhasan et al. (2014) and Veld & Merkoulova (2008).

4.4 Moderating Role of Gender

In this analysis, the hypothesised relationships were evaluated in a multi-group analysis using a full model. A multi-group analysis approach suggested by Byrne (2001) is used to analyse the moderating effect. Appendix 4 and Appendix 5 show the results of the SEM. The hypothesis of a structural model for gender's moderating effect presented as a good fit for the current data. The goodness of fit, all indications of fitness were CMIN / DF=1.423; RMSEA=.032; RMR=.055; GFI=.815; TLI=.932; CFI=.938).

Table 4: Results of the moderating effect of gender

Multi-group effect for the unstandardised and standardised solution

			Unstandardised Solution				Standardised Solution Estimate			
			Estimate		CR.		P			
			M	F	M	F	M	F		
ID.	←	Anc	.185*	.510*	0.659	3.802	.010	.022	.067	.368
ID	←	DE	.255*	.229*	2.115	3.445	.034	.035	.138	.164
ID	←	HB	.105	-.029	1.153	-.362	.249	.717	.080	-.027
ID.	←	HE	.107*	-.419*	.915	-2.045	.040	.041	.095	-.345
ID.	←	OC.	-.203*	.229**	-2.177	.117	.029	.007	-.166	.017
ID.	←	RP	.751***	.446***	7.850	4.780	000	000	.609	.453

Note: Path significance: *** p <.001; ** p <.01; * p <.05.

M: Male F: Female

Table 2 result shows that for males ($\beta = 0.751$, C.R= 7.850, $p < .001$; $\beta = 0.255$, C.R= 2.115, $p < 0.05$), the effect of risk perception and disposition effect on investment decision was stronger for male than female ($\beta = 0.446$, C.R= 4.780, $p < 0.001$; $\beta = 0.229$, C.R= 3.445, $p < 0.05$). Oppositely, the effect of anchoring and herding on investment decision is significantly stronger for females ($\beta = .510$, C.R= 3.802, $p < .05$; $\beta = -.419$, C.R= -2.045, $p < .05$) than the males ($\beta = .085$, C.R=0.659, $p > .05$; $\beta = .107$, C.R=.915, $p > .05$). Moreover, the effect of overconfidence on stock investment decision is significantly stronger for male ($\beta = -.203$, C.R= -2.177, $p < .05$) than the female ($\beta = .029$, C.R= .117, $p > .05$). In contrast, the results show that the home bias in the decision of investments was not significant for men and women. Thus, hypothesis H7 is supported for anchoring (H7a), disposition effect (H7b), herding (H7d), overconfidence (H7e), and risk perception (H7f). Thus, gender can have significantly moderated the relationship between irrational behaviour and stock investment decision except for home bias.

5.0 Conclusions

In summary, the anchoring and disposition effect of irrational behaviour does have a significant positive effect on the sock investment decision process. Instead, overconfidence has a negative effect on investor investment decisions. Furthermore, the effect of gender on the relationship between irrational behaviours, anchoring, disposition effect, herding, overconfidence and risk perception on decision significantly moderated. The results concluded that female investors remain anchored to their old viewpoints, probably because female investors relay to the old historical point of view, and expect a similar trend in the future to lead them to the wrong decision. Besides, in investment decision , males

showed a more significant disposition effect than males. It indicates that females tend to follow other investors in investment decision.

On the other hand, the effect of overconfidence on investment decision found to be significantly stronger for male than the female investor. Finally, the risk perception effect found to be stronger for males than for females. The reason that female investors in investment decisions are more risk-averse than male investors. The results of the study consisted of the previous findings of Lin, 2011; Goyal, 2016; Robert & Constance, 2010. The research finding contributed to the literature related to behavioural financing in emerging economy and significant implication for individual investors. This research also provides financial advisors and stockbrokers with a better understanding of the irrational behaviour of investors and better advice on the behavioural characteristics and gender of clients. The limitation of the research is the research is only limited to individual stock investors, and future research can focus on the behaviour of professional investors and the moderating role of financial literacy and experience in the investment decision.

References:

- Ahearne, A. G., Grier, W. L., & Warnock, F. E. (2004). Information costs and home bias: an analysis of US holdings of foreign equities. *Journal of international economics*, 62(2), 313-336. DOI:10.1016/S0022-1996(03)00015-1
- Al-Tamimi, H. A. H. (2006). Factors influencing individual investor behaviour: an empirical study of the UAE financial markets. *The Business Review*, 5(2), 225-233. Retrieved from https://www.researchgate.net/profile/Hussein_Al-Tamimi/publication/257936341
- Bakar, S., & Yi, A. N. C. (2016). The Impact of Psychological Factors on Investors' Decision in Malaysian Stock Market: A Case of Klang Valley and Pahang. *Procedia Economics and Finance*, 35, 319-328. DOI:10.1016/S2212-5671(16)00040-X
- Barber, B. M., & Odean, T. (1999). The courage of misguided convictions. *Financial Analysts Journal*, 55(6), 41-55. DOI:10.2469/faj.v55.n6.2313
- Barber, B. M., & Odean, T. (2001a). Boys will be boys: Gender, overconfidence, and common stock investment. *The quarterly journal of economics*, 116(1), 261-292. DOI:10.1162/003355301556400
- Barber, B. M.; Y.-T. Lee; Y.-J. Liu; and T. Odean. 2007. "Is the Aggregate Investor Reluctant to Realise Losses? Evidence from Taiwan." *European Financial Management* 13, no. 3: 423-447.
- Bhandari, G., & Deaves, R. (2006). The demographics of overconfidence. *The Journal of Behavioural Finance*, 7(1), 5-11. http://dx.doi.org/10.1207/s15427579jpfm0701_2
- Blunch, N. J. (2013). *Introduction to Structural Equation Modeling Using IBM SPSS Statistics and Amos*. 2nd Edition, Sage Publications Ltd.

- Brown, J. R., Smith, P. A., Ivkovich, Z., & Weisbenner, S. J. (2005). Neighbours matter: The geography of stock market participation. DOI:10.2139/ssrn.673510
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. Sage focus editions, 154, 136-136.
- Byrne, B. M. (2010). Multivariate applications series. Structural equation modelling with AMOS: Basic concepts, applications, and programming (2nd Ed.). New York, NY, US: Routledge/Taylor & Francis Group.
- Chen, G., Kim, K. A., Nofsinger, J. R., & Rui, O. M. (2007). Trading performance, disposition effect, overconfidence, representativeness bias, and experience of emerging market investors. *Journal of Behavioural Decision*, 20(4), 425-451. DOI:10.1002/bdm.561.
- Cooper, I., & Kaplanis, E. (1994). Home bias in equity portfolios, inflation hedging, and international capital market equilibrium. *The Review of Financial Studies*, 7(1), 45-60. DOI:10.1093/rfs/7.1.45
- Cooper, A.C., Woo, C.Y., Dunkelberg, W.C., 1988. Entrepreneurs' perceived chances for success. *Journal of Business Venturing* 3, 97-108.
- Cuong, P. K., & Jian, Z. (2014). Factors influencing individual investors' behaviour: An empirical study of the Vietnamese stock market. *American Journal of Business and Management*, 3(2), 77-94.
- Daniel, K., Hirshleifer, D., & Subrahmanyam, A. (1998). Investor psychology and security market under-and overreactions. *The Journal of Finance*, 53(6), 1839-1885. Retrieved from <https://onlinelibrary.wiley.com/doi/full/10.1111/0022-1082.00077>
- De Bondt, W. F., & Thaler, R. H. (1985). Financial decision-making in markets and firms: A behavioural perspective. *Handbooks in operations research and management science*, 9, 385-410. DOI:10.1016/S0927-0507(05)80057-X
- Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *The journal of finance*, 25(2), 383-417. DOI: 10.2307/2325486
- Fernández, B., Garcia-Merino, T., Mayoral, R., Santos, V., & Valledado, E. (2011). Herding, information uncertainty and investors' cognitive profile. *Qualitative Research in Financial Markets*, 3(1), 7-33. DOI:10.1108/17554171111124595
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of marketing research*, 382-388. DOI: 10.2307/3150980
- French, K., & Poterba, J., 1991. Investor diversification and international equity markets. *The American Economic Review*, 81(2): 222-226.
- Gamage, .W., & Sewwandi. T.(2016). Herding in Colombo stock exchange. *International Journal of Multidisciplinary Research*. Retrieved from: https://www.researchgate.net/publication/299497376_Herding_in_CSE
- Grinblatt, M., Titman, S., & Wermers, R. (1995). Momentum investment strategies, portfolio performance, and herding: A study of mutual fund behaviour. *The American economic review*, 1088-1105. Retrieved from: <http://www.jstor.org/stable/2950976>

Gunathilaka, C. (2014). Factors Influencing Stock Selection Decision the Case of Retail Investors in Colombo Stock Exchange. Proceedings of 11th International *Conference on Business Management of Faculty of Management Studies and Commerce*, University of Sri Jayewardenepura, Nugegoda, 107-115. <http://dr.lib.sjp.ac.lk/handle/123456789/1596>

Hair Jr., J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2010) *Multivariate Data Analysis: A Global Perspective*. 7th Edition, Pearson Education, Upper Saddle River.

Hatcher, Larry. (1994), *Step-by-Step Approach to Using the SAS. System for Factor Analysis and Structural Equation Modeling*. Cary, NC: SAS. Institute.

Hilton, D. J. (2001). The psychology of financial decision-making: Applications to trading, dealing, and investment analysis. *The Journal of Psychology and Financial Markets*, 2(1), 37-53. http://dx.doi.org/10.1207/S15327760JPFM0201_4

Hilts, P. J. (2016, January 30). Salient role of the stock market in economic growth. Daily mirror. Retrieved from <http://www.dailymirror.lk/article/Salient-role-of-stock-market-in-economic-growth-122958.html#sthash.S27LIwQp.dpuf>

Hox, J. J., & Bechger, T. M. (1998). *An introduction to structural equation modelling*.

Hoyle, R.H. (1995), *Structural Equation Modelling*. Thousand Oaks, CA: SAGE

Iqbal, A., & Usmani, S. (2009). Factors Influencing Individual Investor Behaviour (The Case of the Karachi Stock Exchange). *South Asian Journal of Management Sciences*, 3(1), 15-26. Retrieved from: www.academia.edu/download/30607070/Spring2009V3N1P3.pdf

Ishfaq, M., & Anjum, N. (2015). Effect of Anchoring Bias on Risky Investment Decision. Evidence from Pakistan Equity Market. *Journal of Poverty, Investment and Development*, 14, 1-9. Retrieved From [http://www.ijemr.net/DOC/Effect Of Anchoring BiasOnRiskyInvestmentDecisionEvidenceFromPakistanEquityMarket\(32-38\).pdf](http://www.ijemr.net/DOC/Effect%20Of%20Anchoring%20Bias%20On%20Risky%20Investment%20Decision%20Evidence%20From%20Pakistan%20Equity%20Market(32-38).pdf)

Jaya Mamta Prosad, Sujata Kapoor Jhumur Sengupta, (2015), "Behavioural biases of Indian investors: a survey of Delhi-NCR region", *Qualitative Research in Financial Markets*, Vol. 7 Iss 3 pp. 230 – 263. <http://dx.doi.org/10.1108/QRFM-04-2014-0012>

Jayakumar, T., & Kothai.S. (2014). Does the Investor Investigate? Antecedents of Investment Decision. *European Journal of Business and Management*, 37 (6). Retrieved from <http://www.iiste.org/Journals/index.php/EJBM/article/view/18692>

Jetter, M., & Walker, J. K. (2017). Anchoring in financial decision-making: Evidence from Jeopardy. *Journal of Economic Behaviour & Organization*, 141, 164-176. DOI:10.1016/j.jebo.2017.07.006

Kahneman, D. (2003). A perspective on judgment and choice: mapping bounded rationality. *American psychologist*, 58(9), 697. Retrieved from <http://www.jstor.org/stable/3132137>

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica: Journal of the econometric society*, 263-291. Retrieved from <http://www.jstor.org/stable/1914185>

Kalra Sahi, S., & Pratap Arora, A. (2012). Individual investor biases: a segmentation analysis. *Qualitative Research in Financial Markets*, 4(1), 6-25. DOI:10.1108/17554171211213522

- Kannadhasan, M., Aramvalarthan, S., & Kumar, B. P. (2014). The relationship among cognitive biases, risk perceptions and individual's decision to start a venture. *The decision*, 41(1), 87-98. Retrieved from <https://link.springer.com/article/10.1007/s40622-014-0029-1>
- Kapteyn, A., & Teppa, F. (2011). Subjective measures of risk aversion, fixed costs, and portfolio choice. *Journal of Economic Psychology*, 32(4), 564-580. DOI:10.1016/j.joep.2011.04.002
- Kengatharan, L., & Kengatharan, N. (2014). The influence of behavioural factors in making investment decisions and performance: Study investor of Colombo Stock Exchange, Sri Lanka. *Asian Journal of Finance & Accounting*, 6(1), 1.
- Kilka, M., & Weber, M. (2000). Home bias in international stock return expectations. *The Journal of Psychology and Financial Markets*, 1(3-4), 176-192. https://www.tandfonline.com/doi/abs/10.1207/S15327760JPFM0134_3
- Kline, R.B. (2005), *Principles and Practice of Structural Equation Modelling*, 2nd ed., New York: The Guilford Press
- Kudryavtsev, A., & Cohen, G. (2011). Behavioural biases in economic and financial knowledge: Are they the same for men and women? *Advances in Management and Applied Economics*, 1(1), 15. Retrieved from <https://search.proquest.com/openview/7cae8f8cbc84b5045ce34cc805d347f3/1?pq-origsite=gscholar&cbl=796380>
- Kumar Goyal, N. (2015). Behavioural biases in investment decision—a systematic literature review. *Qualitative research in financial markets*, 7(1), 88-108. <https://www.emeraldinsight.com/doi/abs/10.1108/QRFM-07-2014-0022>
- Lascu, D. N., Babb, H. W., & Phillips, R. W. (1997). Gender and investment: The influence of gender on investment preferences and practices. *Managerial Finance*, 23(10), 69-83. Retrieved from <https://www.emeraldinsight.com/doi/abs/10.1108/eb018652>
- Leung, T. C., & Tsang, K. P. (2013). Anchoring and loss aversion in the housing market: implications on price dynamics. *China Economic Review*, 24, 42-54. DOI:10.1016/j.chieco.2012.10.003
- Lin, H. W. (2011). Elucidating rational investment decisions and behavioural biases: Evidence from the Taiwanese stock market. *African Journal of Business Management*, 5(5), 1630. Retrieved from: www.academicjournals.org/journal/AJBM/article-full-text-pdf/AC702DF18509
- Lintner, J. (1965). The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets. *The review of economics and statistics*, 13-37. Retrieved from <http://www.jstor.org/stable/1924119>
- Locke, P. R., & Mann, S. C. (2005). Professional trader discipline and trade disposition. *Journal of Financial Economics*, 76(2), 401-444. DOI:10.1016/j.jfineco.2004.01.004
- Locke, P. R., & Onayev, Z. (2005). Trade duration: Information and trade disposition. *Financial Review*, 40(1), 113-129. DOI:10.1111/j.0732-8516.2005.00095.x
- Luong, L. and Thu Ha, D. (2011), Behavioural factors influencing individual investors' decision and performance, Master thesis, Umeå School of Business, Spring semester 2011.
- Malmendier, U., & Tate, G. (2005). CEO overconfidence and corporate investment. *The Journal of Finance*, 60(6), 2661-2700. DOI:10.1111/j.1540-6261.2005.00813.x

Muniraju, M., & Manuel, J. (2013). Behavioural finance in individual investors' decision—*International Journal of Research in Social Sciences*, 3(3), 83.

Muradoglu, G., & Harvey, N. (2012). Behavioural finance: the role of psychological factors in financial decisions. *Review of Behavioural Finance*, 4(2), 68-80. Retrieved from <https://www.emeraldinsight.com/doi/full/10.1108/19405971211284862>

Nair, V. R., & Antony, A. (2015). Evolutions and challenges of behavioural finance. *International Journal of Science and Research*, 4(3), 1055-1059.

Nguyen, L., Gallery, G., & Newton, C. (2017). The joint influence of financial risk perception and risk tolerance on individual investment decision-making. *Accounting & Finance*. <https://onlinelibrary.wiley.com/doi/full/10.1111/acfi.12295>

Phan, C. K., & Zhou, J. (2014). Vietnamese individual investors' behaviour in the stock market: An exploratory study. *Research Journal of Social Science & Management*, 3(12), 46-

Pompian, M. M. (2008). Using behavioural investor types to build better relationships with your clients. *Journal of Financial Planning*, 21(10).

Ricciardi, V. (2007). A literature review of risk perception studies in behavioural finance: emerging issues. SSRN. Retrieved from <https://ssrn.com/abstract=988342> or <http://dx.doi.org/10.2139/ssrn.988342>

Russo, J. E., & Schoemaker, P. J. (1992). Managing overconfidence. *Sloan management review*, 33(2), 7. Retrieved from <https://search.proquest.com/openview/0d0f69350a8aa6b46ba0e3e5e5c95c84/1?pq-origsite=gscholar&cbl=1817083>

Salman Ali Qureshi and Kashif ur Rehman and Ahmed Imran Hunjra (2012). Factors Affecting Investment Decision of Equity Fund Managers. *Journal of Wulfenia*, 19(10). Retried From: <http://mpa.ub.uni-muenchen.de/60783>

Schoemaker, D., & Soeter, C. (2014). New Evidence on the Home Bias in European Investment. Duisenberg School of Finance (D.F.S.), Policy Brief, (34).

Sharpe, W. F. (1964). Capital asset prices: A theory of market equilibrium under conditions of risk. *The Journal of Finance*, 19(3), 425-442. DOI: 10.1111/j.1540-6261.1964.tb02865.x

Shefrin, H. (1999). Irrational exuberance and option smiles. *Financial Analysts Journal*, 55(6), 91-103. DOI:10.2469/faj.v55.n6.2316

Shefrin, H. (2002). Beyond greed and fear: understanding behavioural finance and the psychology of investing. Oxford University Press on Demand.

Shefrin, H., & Statman, M. (1985). The disposition to sell winners too early and ride losers too long: Theory and evidence. *The Journal of Finance*, 40(3), 777-790. DOI: 10.1111/j.1540

Simon, H. A. (1956). Rational choice and the structure of environments. *Psychological Review*, 63, 129-138. Reprinted in Simon, H.A. (1979), *Models of Thought*, vol. I (pp. 20-28). New Haven, CT: Yale University Press.

Tsai, F. S., Lin, C. H., Lin, J. L., Lu, I. P., & Nugroho, A. (2018). Generational diversity, overconfidence and decision-making in family business: A knowledge heterogeneity perspective. *Asia Pacific Management Review*, 23(1), 53-59.

Toma, F. M. (2015). Behavioural Biases of the Investment Decisions of Romanian Investors on the Bucharest Stock Exchange. *Procedia Economics and Finance*, 32, 200-207. DOI:10.1016/S2212-5671 (15)01383-0

Ton, H. T. H., & Dao, T. K. (2014). The Effects of Psychology on Individual Investors' Behaviours: Evidence from the Vietnam Stock Exchange. *Journal of Management and Sustainability*, 4(3), 125. <http://dx.doi.org/10.5539/jms.v4n3p125>

Ton, H. T. H., & Dao, T. K. (2014). The Effects of Psychology on Individual Investors' Behaviours: Evidence from the Vietnam Stock Exchange. *Journal of Management and Sustainability*, 4(3), 125. Retrieved from <http://www.ccsenet.org/journal/index.php/jms/article/viewFile/39897/22142>

Tourani-Rad, A., & Kirkby, S. (2005). Investigation of investors' overconfidence, familiarity, and socialisation. *Accounting & Finance*, 45(2), 283-300.

Veld, C., & Veld-Merkoulova, Y. V. (2008). The risk perceptions of individual investors. *Journal of Economic Psychology*, 29(2), 226-252. DOI:10.1016/j.joep.2007.07.001

Von Holstein, C. A. S. S. (1972). Probabilistic forecasting: An experiment related to the stock market. *Organisational Behaviour and Human Performance*, 8(1), 139-158. DOI:10.1016/0030-5073 (72)90041-4

Wermers, R. (1999). Mutual fund herding and the impact on stock prices. *The Journal of Finance*, 54(2), 581-622. DOI: 10.1111/0022-1082.00118

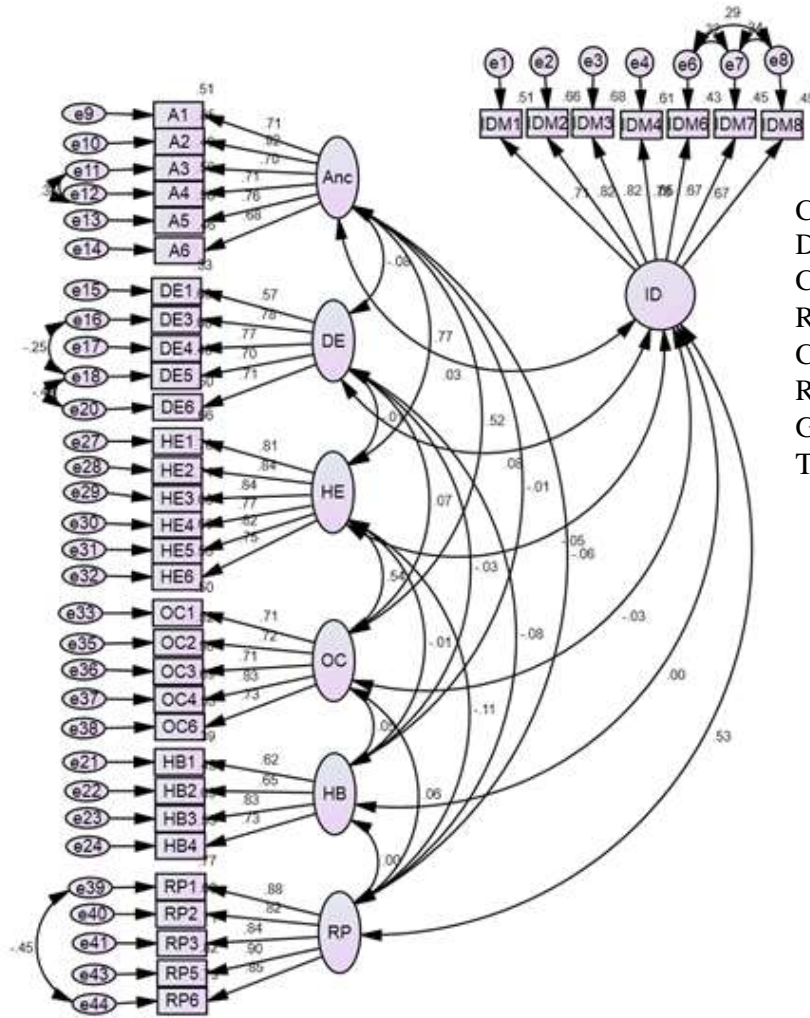
Appendices

Appendix 1

	AN	DE	HE	HB	OC.	RP.	ID.
Anchoring (AN)	0.57						
Disposition effects (DE)	0.009	0.50					
Herding Effects (HE)	0.421	.001	0.65				
Home Bias(HB)	0.001	.002	.001	0.51			
Overconfidence (OC)	0.269	.004	.289	.003	0.55		
Risk Perception (RP)	0.004	.005	.013	.001	.004	0.74	
Investment Decision (ID)	0.001	.006	.003	.001	.001	.279	0.54

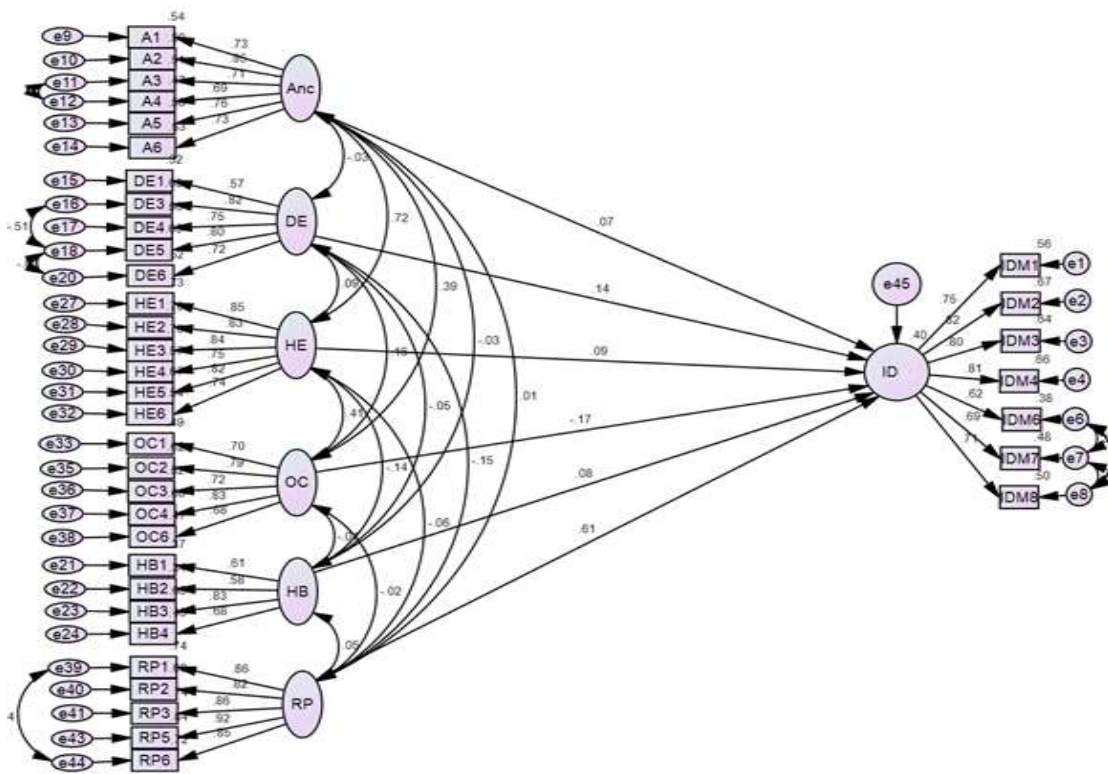
Note: AVE is represented on the diagonal, and the square correlation is represented on the matrix entries

Appendix 2- figure1 - overall measurement model of the irrational behaviour and investment decision



Chi-square = 1009.061
 Degrees of freedom = 638
 CMIN/DF = 1.578,
 RMSEA = .038
 CFI = .958
 RMR = .041
 GFI = .884
 TLI = .954

Appendix 3- figure 2- The multi-group (male) moderation effect of gender between irrational behaviour and investment decision.



Appendix 4- figure3- The multi-group (female) moderation effect of gender between irrational behaviour and investment decision.

