HOW INVESTOR'S BEHAVIOUR TOWARDS INVESTMENT DECISION? PLSSEM APPROACH

BY

ANG HUI THENG

KONG KAH WENG

ONG VNN NEE

POO LING FENG

TAN KHAI SHEN

A final year project submitted in partial fulfilment of the requirement for degree of

BACHELOR OF FINANCE (HONS)

UNIVERSITI TUANKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE

DEPARTMENT OF FINANCE

APRIL 2019

DECLARATION

We hereby declare that:

(1) This undergraduate Final Year Project is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this Final Year Project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the FYP.

(4) The word count of this report is 18455 words.

Name of student:	Student ID:	Signature:
1. ANG HUI THENG	15ABB03217	_____
2. KONG KAH WENG	16ABB04476	_____
3. ONG VNN NEE	15ABB02707	_____
4. POO LING FENG	15ABB01998	_____
5. TAN KHAI SHEN	15ABB05978	_____

Date: _____

ACKNOWLEDGEMENT

First of all, we would like to evince our sincere appreciate to our supervisor, Ms Josephine Kuah Yoke Chin for giving us this treasure opportunity and supports in overseeing our research project. We would like to express millions of thanks to her who are always patient and concentrate in listening to the problems we faced while doing this research. She had provided us a clear direction, outline and suggestion from the beginning until the end of our research project. We are extremely thankful to done our project under her invaluable time, guidance and expertise.

Beyond that, we would like to express our appreciation for the infrastructures and facilities provided by University Tunku Abdul Rahman (UTAR). Without those facilities, we are unable to get the data, journal articles and information needed to conduct our research project.

Lastly, we would like to thank our friends, course mate and parents for their guidance and encouragement throughout the process of this research project. Their dedications are grateful acknowledged, together with the sincere apologies to those we have inadvertently failed to mention.

DEDICATION

First and foremost, we would like to dedicate our research project to our beloved supervisor, Ms. Josephine Kuah Yoke Chin for her invaluable guidance, suggestion, and support throughout the completion for this research.

Then, we intend to dedicate our research to our respective family members and friends as an appreciation of their encouragement in completing this research project and share our achievements with them.

Lastly, this research project also wants to dedicate to the potential researchers in assisting them in their future studies.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Page

LIST OF APPENDICES

Page

LIST OF ABBREVIATIONS

APT	Arbitrage pricing theory
AVE	Average Variance Extracted
CA	Cronbach's Alpha
CAPM	Capital Asset Pricing Model
CME	Chicago Mercantile Exchange
CR	Composite Reliability
DV	Dependent Variable
FTSE	Financial Times Stock Exchange
GDP	Gross Domestics Product
HTMT	Hetrotrait Monotrait
KLCI	Kuala Lumpur Composite Index
KLSE	Kuala Lumpur Stock Exchange
MPT	Modern Portfolio Theory
MSE	Malayan Stock Exchange
MYR	Malaysia Ringgit
PLS-SEM	Partial Least Squares Structural Equation Modeling
SEM	Stock Exchange of Malaysia
UTAR	University Tunku Abdul Rahman

ABSTRACT

This research was studied the relationship between individual investment decision making and psychological financial behaviour and Malaysia 14th General Election. The target respondents of this research were included 120 individual investors which involved in the Malaysia stock market with the sampling location at Perak state (Ipoh and Kampar). To execute the five statistics results were Cronbach's alpha, composite reliability (CR), average variance extracted (AVE), discriminant validity, as well as hypothesis testing. The Partial Least Squares Structural Equation Modeling (PLS-SEM) had been conducted in this research. The results found that there were the significant and insignificant relationship between individual investment decision making and psychological financial behaviour and Malaysia 14th General Election. This research was provided the benefit to the society such as financial investors, investment advisor and financial professional, policymaker and financial market regulator as well as corporate.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

This chapter presented the overview of the Malaysia stock market as research background. The purpose of investigation in this research concerning in discussing the problem statement. Subsequently, questions and objectives of the research are discussed by focusing on the dependent variable of individual investment decision making as well as independent variables which included over-confident, herding, loss-aversion, price anchoring, self-control and Malaysia's 14th Election. However, the significance of study also provided to acknowledge individual investor, investment advisor or financial professional, policymaker or financial market regulator, and corporate. Lastly, sum up by the conclusion.

1.1 Research Background

1.1.1 Malaysia Stock Market

Stock market viewed as an important market within a country where the government use to raise fund through government bond, and equity. It was the centre of development of strong and competitive economy. The capitalisation of stock market had a positive and significant relationship with real per capita GDP and market liquidity (Masoud, 2013). However, stock exchange was a platform that provided listed companies to raising

capital by issue and trade particular company shares in the open market in more effective way (Murthy, Anthony & Vighnesvaran, 2016). Fontanills and Gentile (2001) defined stock market as a platform of combination various ownership of shares in corporations. In addition, the name of stock market in Malaysia was changing all the time. According to Arshad and Yahya (2016) stated that Malaysia stock exchange first established in 1960s and named as Malayan Stock Exchange (MSE). During the year of Malaysia formation (1963s), the name of Malaysia stock exchange changed to Stock Exchange of Malaysia (SEM) which is the platform for Malaysia and Singapore to trade in the market due to the reason of economy interdependent (Schenk, 2013). However, name of stock exchange in Malaysia changed again after separated with the Singapore so-called "Kuala Lumpur Stock Exchange" (Ibrahim, 2006). In year 2004, the stock exchange in Malaysia renamed from KLSE to Bursa Malaysia until today. Bursa Malaysia used the stock market index of KLCI (Kuala Lumpur Composite Index) to full market capitalization among the performance of 30 largest companies which can be known as a major index in Malaysia. Arshad and Yahya also claimed that at the end of February 2014 there are around 1,145 listed companies issued their shares, and the capital of these companies reached around $ 235.28 billion in the market. It shows that stock exchange plays an important role in market which can affect the wealth for investors and also influence the movement of Malaysia economy.

In year 2009, Bursa Malaysia Berhad globalized in market because of the new strategy used by Bursa Malaysia Berhad to form a partnership together with Chicago Mercantile Exchange (CME). Bursa Malaysia Derivatives Berhad had a large portion of shares which is 75% and the remaining shares of 25% belong to CME (Sih, 2012). However, the globalization era had brought the benefit to Malaysia because of the financial and trade barrier had reduced among the countries. Apart from that, Yeoh (2010) pointed that Malaysia stock market was grown rapidly and lead to the growth of Malaysia economy because of the increased of foreign capitals inflow in Malaysia stock market. At the same year, Malaysia stock market cooperated

with the index partner of International Limited (FTSE) and upgraded from the index of KLCI to FTSE Bursa Malaysia KLCI. This transformation of market indicator is to serves the market more tradable, investable and traceable and also attract more investors invest in the market (Bit, Chee & Zainudin, 2010).

Figure 1.1: FTSE Bursa Malaysia KLCI
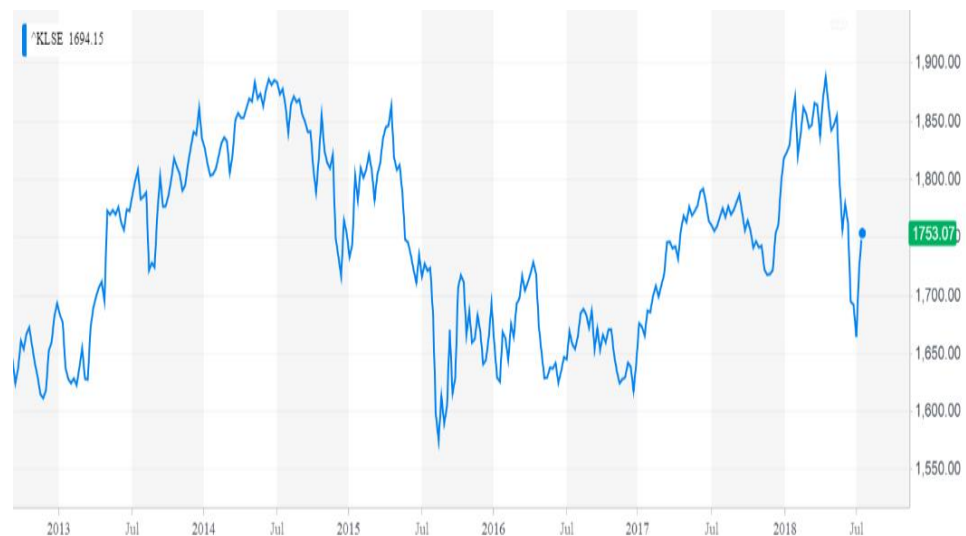
Source: Yahoo Finance (2013 - 2018)

Figures 1.1 shows the five years performance index of Malaysia stock market from year 2013 to 2018. This can be concluded that the five years performance index of Malaysia stock market are fluctuated, the highest index point for Malaysia stock market is almost reach to 1,900 in year 2018 while the lowest index point is on year 2015 in between of the value between of 1,550 and 1,600.

1.1.2 Malaysia's Investors

An investor is the person that had a requirement to sacrifice or purchase an asset in certain period of time in order to generate return from future investment. Different perception on investors has different risk tolerances, several investors prefer to generate lower return in lower risk investment such as dividend fund, money market fund as well as certificates of deposit. In sharp contrast to this, most of the people toward on generate higher return in higher risk investment such as stock market, foreign emerging markets, capital market fund and also currency trading. Furthermore, Powell (2017) declared that investors should study and understand Effective Annual Return (EAR) on a particular company stock they wish to invest before making the investment decision. Effective Annual Return is to help investors to measure the rate of return in various investments in the market, therefore it helped investor to determine the return or profit that investor might benefit from the investment. As stated by Loh, Chow, Kwan, Ng, and Ng (2017), investor had different investment philosophies in various stages of age based on the investing life cycle. The first stage of life cycle is growth-oriented youth stage (ages among 20 to 45), second stage of life cycle is middle-aged consolidation stage (ages among 45 to 60), and last stage of life cycle is income-oriented retirement years (ages among 60 and elder).

Table 1.1: Stock Exchange Data in Different Country (2016)

Stock Exchange	Number of retail accounts (full numbers as at end of 2016) [15]	Number of retail trades (2016 avge % total)	Value of retail trades (2016 avge % total)	Market Capitalisation (thousand USD as at end 2016)	Turnover velocity (2016 avge)
Amman Stock Exchange	509,974	92%	83%	24,553,072.78	11%
Bolsa de Valores de Colombia	7,861	64%	31%	103,404,864.23	14%
Bursa Malaysia	1,849,048	52%	21%	363,149,675.82	27%
Colombo Stock Exchange	779,701	79%	20%	18,627,319.96	7%
Dubai Financial Markets	828,775	77%	71%	92,236,000.00	41%
Indonesia Stock Exchange	87,130	60%	41%	433,822,384.68	22%

Table 1.1: Stock Exchange Data in Different Country (2016)

Kazakhstan Stock Exchange	107,279	79%	31%	40,129,894.69	2%
Moscow Exchange	1,499,778	43%	34%	622,051,532.64	26%
Muscat Securities Market	N/A	N/A	92%	23,315,615.22	10%
Philippine Stock Exchange	746,595	42%	20%	239,882,385.04	14%
Stock Exchange of Mauritius[16]	93,994	58%	39%	11,040,517.12	6%
Taipei Exchange	493,239	89%	82%	86,117,517.21	171%
The Egyptian Exchange	32,491	81%	64%	32,042,343.37	39%
The Stock Exchange of Thailand	1,850,890	84%	59%	437,313,794.777	81%

Source: WFE and exchange data submission (2016)

Based on Table 1.1, the numbers of retail accounts in Amman Stock Exchange is 509,974 ,and the numbers of retail trades is 92% which was the highest percentage as compared to others country stock exchange. Apart from that, this table also display the numbers of retail accounts in Philippine Stock Exchange was 746,595 with the numbers of retail trades of 42%. Based on Malaysia Stock Exchange – Bursa Malaysia, the data illustrated that the numbers of retail account in Bursa Malaysia consists of 1,849,048 with the numbers of retail trades of 52%. Even the retail account in Bursa Malaysia was the highest compared to others countries, but only 52% investors active in the market. Therefore, it can be concluded that the investors in Malaysia is not actively in stock market compared to others countries.

Figure 1.2: Malaysia Foreign Direct Investment from year 2015 to 2018

Source: Tradingeconomics.com, Department of Statistics, Malaysia

Figure 1.2 displays Malaysia Foreign Direct Investment from year 2015 until 2018. The amount of foreign direct investment in Malaysia is fluctuated every year. In year 2015, Malaysia foreign direct investment had generated the lowest MYR Million which is 2987. But in year 2017, Malaysia foreign direct investment had increased to the highest MYR Million which is 17237.

As stated by Economicshelp (2018), there are many factors can influence foreign direct investment through increase or decrease the tax rate, labour skills, wages rate, exchange rate and others. In addition, Hanif and Jalaluddin (2013) mentioned total investment in market does not influence by foreign direct investment in long run but there is a significant and positive relationship between each other in short run. For example, 1 percentage point rising in the growth of foreign direct investment, the growth of total investment would be rising 0.56 percentage point in short run.

1.2 Problem Statement

In the equity world, either negatively or positively, the general election might influence on one country's stock market performance. In the option of Leow & Celis (2015), the volatility of stock market is related to the electoral factor. The 20 days of post-election is more volatile than the 20 days of pre-election, because investors may refer to the result generated from election and make adjustment on their investment portfolio. The effect of general election may lead equity market under-reaction or over-reaction. Due to Malaysia is a political market, most of investors are not willing to take aggressive positions and bear extra risk, so they have been selloff Malaysia's stocks ("Market down on elections", 2018).

Before Malaysia 14th General Election, domestic investors and foreign investors are expect that Malaysia stock market will drop dramatically if the Barisan National coalition lost their position in Malaysia which had ruled for 61 years. Given the news of Bloomberg (Bloomberg, 2018), market watchers expect that the stock market will fall across the board, including benchmark index stocks. However, the fall in the price of stock market has a potential problem of leading the government

linked companies and others companies facing the problem of selloff the stocks. Furthermore, Affin Hwang Asset Management Berhad also made an expectation that the index maybe decline around 8% in the first few trading days after election. Moreover, before Malaysia 14th General Election, foreign investors had already sold out RM438.4 million from the market (Yee, 2018). Moreover Alvin, Evelyn, Lee, Lee and Yeoh (2014) concluded that 12th and 13th Malaysia General Election has brought a significant impact toward the Malaysia stock market. This statement also supported by Lean (2015).

However, Malaysia had experienced 14th General Election on 9 May 2018. Unfortunately, Barisan Nasional coalition had beaten by Pakatan Harapan that led by Tun Dr Mahathir Mohamad. Prime minister of Malaysia has been replaced by Tun Dr Mahathir Mohamad who was the oldest head of government in the world with 92 years old. The news of The Straits Times and The Star (Yee, 2018), KLCI index only declines on the first day morning after election, and keeping stable movement until the end of 14 May 2018. In the end of the first trading week after election, KLCI index had gained 0.4%. However, The Star (NST. Business, 2018) mentioned the foreign investors had sold their investment in Malaysia 10-straight trading days. On the first trading day after election (14 May 2018), the net outflow of foreign direct investment was RM682.6 million. Although there was a huge amount of net outflow, but the trading value was recorded at RM7.3 billion by Bursa Malaysia. On the next day, the amount of net outflow had increased to RM837.3 million. Nevertheless, the KLCI index had boosted to 1858 points or gained 0.54% at the end of eighth trading day. The whole KLCI market was supported by local fund, which are individual investors, retailers and national institution. Even there is a downgrade after 21th May 2018, the KLCI market still can maintain above 1700 points.

Figure 1.3：The movement of KLSE from 23th April until 16th July in 2018

Sources from www.malaysiastock.biz (2018)

It would be interesting to find out the investor's psychological behaviour in Malaysia stock market after 14th Malaysia's General Election, whether the expectation for investors in Malaysia stock market before election are match with the real result generated in Malaysia stock market after election. Furthermore, it also a chances to find out investor's psychological behaviour toward stock market in the view of huge amount of foreign net outflow.

1.3 Research Questions

Several research questions are proposed by this research:

1. Does overconfidence have a significant effect on individual investment decision making?

2. Does herding have a significant effect on individual investment decision making?

3. Does price anchoring have a significant effect on individual investment decision making?

4. Does loss aversion have a significant effect on individual investment decision making?

5. Does self-control have a significant effect on individual investment decision making?

6. Does Malaysia's 14th Election have a significant effect on individual investment decision making?

1.4 Research Objectives

1. The general objective of this research is to determine how investor's psychological behaviour and Malaysia's 14th Election might affect investor investment activity.

2. To identify the relationship between overconfidence and individual investment decision making in Bursa Malaysia.

3. To examine the relationship between herding and individual investment decision making in Bursa Malaysia.

4. To analyse the relationship between price anchoring and individual investment decision making in Bursa Malaysia.

5. To measure the relationship between loss aversion and individual investment decision making in Bursa Malaysia.

6. To investigate the relationship between self-control and individual investment decision making in Bursa Malaysia.

7. To study the relationship between Malaysia 14th Election and individual investment decision making in Bursa Malaysia.

1.5 Significant of Study

The objective of this research is to investigate the influence of behavioral finance and Malaysia 14th Election toward the individual investment decision making. It also benefit to society because it was an important information for the investor by knowing that the investment decision is not only be influenced by the current information and figures that available in the market. The investment decision can also be influenced by human financial behavioral bias and election as well as psychological factor and political issue.

1.5.1 Financial Investors

This research consider as a good reference for potential and existing financial market investor to know that which financial behavioral bias might affecting their investment decision making, and solve these biases in order to achieve their goal and create wealth from investment (Bashir, 2013; Bakar & Amelia, 2016). It also might enhance the knowledge for investors in the field of financial behavior bias in order to have a rational financial decision making. Most of the investors make investment decision by using the information available in the financial market, and ignore one factor that may influence their investment decision making which is financial

behavioral bias. Hence, this research might enhance the awareness of the investors toward their financial behavior while making their investment decision.

1.5.2 Investment Advisor and Financial Professional

In addition, this research can acknowledge investment advisor and financial professionals to investigate and judge on investors' financial behavior and attitude on investment decision making process. It also can guide and lead individual investor to make a better investment decision making in the market. The broker also can detect investors' behavior bias quickly, and have a control on their psychological factor before investment decision has been made, as well as help them to achieve investment goal (Kafayat, 2014). For investment advisor and financial professional, they might expert on controlling their emotional while providing advice. Therefore, individual investor may consult and follow the decision of investment advisor and financial professional, because financial behavioral bias may bring large impact to the financial market.

1.5.3 Policymaker and Financial Market Regulator

Besides that, this research also useful for policymaker and financial market regulator because it will help them to understand the roles of financial behavioral bias on individual investment decision making (Bakar & Amelia, 2016). Policymaker might have a deep understanding on investor financial behavioral bias after referred on this research and able to draw and set better

future policies in financial market (Ali & Tariq, 2013). Besides, policymaker able to create better policy by removed the negative effect of psychological factor of investor (Juliet, 2017). The policymaker and education institution can also provide training and workshop on understanding the financial behavior bias toward the investor.

1.5.4 Corporate

Corporate is the party who involved in the transaction of financial market directly. As they needed funds from investors to expand their business and develop new project by issue bond or stock. However, investor who having a financial behavioral bias might influence the cash flow on financial market due to the reason of investment decision making for investor is irrationally. Therefore, this research provided benefit to the corporate on understanding financial behavioral bias for investor that may cause investor act irrationally from the market. Besides, corporate also be provided relevant information on financial behavioral bias by this research, and create win-win situation for their potential and existing investor.

Overall, this research are beneficial to few categories of people who involved in financial market which are individual investor, investment advisor or financial professional, policymaker or financial market regulator, and corporate. The stock market can be operating in a way of efficiency and smoothly when the financial behavioral bias can be detect and control properly.

1.6 Conclusion

This chapter had introduced the background of study and carried out the investigation purpose in problem statement. This chapter also used those independent variables to develop the research questions and objectives of research. The field of investor's psychological behaviour bias or known as behavioural finance and Malaysia 14th Election are belonging to new area in the research study. Because of limited number of researches and studies regarding this area, so this research attempt to provide a big picture, basic knowledge and explanation for readers to have a clearly understanding. The literature review will discuss in the following chapter.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

The stock market movement in Malaysia is said to be highly fluctuated in general, Malaysia stock market (Bursa Malaysia) will affect directly by the investor decision making. Therefore, this research would like to examine the relationship between the dependent variable and independent variable. The dependent variable is based on an individual investment decision making in Bursa Malaysia while the independent variables which are overconfidence, herding, loss aversion, price anchoring, self-control as well as Malaysia 14th election. Apart from that, this research will be conducted by several relevant theoretical models in order to explain the relationship between the dependent variable and independent variables. At last, the research framework will be presented in the research.

2.1 Review of Literature

Literature review can be defined as the topic that has been released by accepted scholar and researchers previously. In following chapter, the past studies conducted by other researchers will be reviewed to identify the relationship between the dependent variable (individual investment decision making) and independent variables (overconfidence, herding, loss aversion, price anchoring, self-control and Malaysia 14th Election).

2.1.1 Dependent Variable - Individual Investment Decision Making

Before behavioural finance been introduced to world, investors are following the traditional finance theory. Traditional finance theory including efficient market theory (EMH), modern portfolio theory (MPT), capital asset pricing model (CAPM) and else. According to Suryawanshi and Jumle (2016), these theories assume that investor will consider all available information in the market and act rationally towards decision-making process. The whole investment markets and security price are considered as fully efficiency. Simply put, the traditional finance focuses on how investor should behave and market prices are reflected to all relevant information (Financial Analyst Warrior, CFA Knowledge Base). From the study of Byrne and Utkus (2013), those assumptions are not match with the reality. In fact, investors are rarely behave by following the assumption of traditional finance theory. They also mentioned that this might be the reason of behavioural finance can generate rapidly over the last twenty years.

As compared with traditional finance, behavioural finance is a new field that related to behave of financial practitioners, it can explain that why and how the market is inefficient. On the report of Sewell (2007), the behavioural finance can be defined as the behaviour of financial practitioners and market subsequent that affected by psychology. The finding of Byrne and Utkus (2013) also in line with this statement.

There are many factors that included in psychology which can affect individual investment decision-making. On the authorities of Babajide and Adetiloye (2012) Alquraan, Alqisie and Shorafa (2016), and Anum and Ameer (2017), which consist of many evidences shows that common psychology biases that can affect individual investment decision-making

including overconfidence, loss and regret aversion, confirmation bias, framing, heuristics, herding, mental accounting bias and anchoring. Some of uncommon psychology biases such as self-control, representativeness and risk aversion are only study by few researchers. However, if these common and uncommon psychology biases can be understand by the scholars, it can minimize an investment risk easily and maximize investor's quality of investment decision-making.

2.1.2 Independent Variable – Investor's Psychological Variables

2.1.2.1 Overconfident

Overconfidence is study an inadequate belief about the judgement, reasoning and cognition of personal ability. Nowadays in business world, overconfidence plays an important role in stock market and psychological research included the influence of overconfidence of the behaviours studied (Sadi, 2011). Overconfidence is one of the independent variable that can influence on the individual investor decision making and risk management by the investor. Overconfidence may lead to underrate risk and misjudge investor skill when control the events (Strong, 2006). Overconfidence can also be defined as when people is more confidence in their abilities such as overestimated their skill, knowledge as well as the power in several situation (Tapia & Yermo, 2007). One of the researcher stated that people who overconfidence may think that they can select profitable investment in stock market compare to others, and knowing the timing to entry and exit the market. But sometime they might be over-estimate the stock which generated low return with high risk (Odean, 1998). In an opposite view which explained by Kyle and Wang (1997) that people who with

overconfident bias in investment decision making can generate high profit compare to other investors. Taylor and Brown (1988) agreed that those people who are overconfident may think that they have an unrealistic attitude, and think they are superior in their decisions.

There is a positive relationship between overconfidence and individual investment decision making, which means that those investors will perform better on their intellectual and experience in making their investments decision (Barber & Odean, 1999; Horani & Haddad, 2011; Abdulaziz, 2013). This statement also supported by Lim (2012), Qureshi (2012), Qadri and Shabbir (2013), Bashir (2013) and Juliet (2017).

Based on the Menike, Dunusinghe, and Ranasinghe (2015), the person who with the feature of overconfidence can enhance their investment performance when using his/her ability and knowledge in several situation. Apart from that, investor with an ability of overconfidence can get more information rather than others who ignoring. Anderson (2005) pointed out that overconfidence can have a positive effect on investment performance because they conduct higher volume of transactions which can generate in higher returns as compared to the fewer transactions which only can generate lower returns. Overconfidence is good for difficult mission and low predictability (Barber & Odean, 2001).

Several researchers found that, there is a strong evidence to conclude that overconfident occur in the Nigeria security market have result negative relationship, this consequence caused market devaluation due to investors showing behavioural deviations (Babajide & Adetiloye, 2012). Barber and Odean (2001) also indicated that overconfidence bias may have a negative impact on investor decision making, and investor with overconfidence bias may trade more on high risk security, such as stocks, bonds as well as options. This statement also proved by Atif and Kengatharan (2014),

because high risk security may generate high return to the investor. Besides, investor who actively invest in stock market will not necessary generate favourable outcome (Odean, 1998).

2.1.2.2 Herding

The investor, who has herding behavior will follow and influence by others or a group of people suggestion to make their investment decision. Investor will assume that follow the majority to invest always be the correct ways and can earn profit from the investment (Bakar & Amelia, 2016). Investor believe that there was impossible for a group of people will do same mistake or wrong decision at the same time. Besides that, investor who has herding behavior may not thinking and planning such as making quantitative analysis and other techniques during the process of investment decision making (Alquraan, Alqisie & Shorafa, 2016). They are preferred to use collective information which the information that prepare by other party rather than private information to make investment decision.

Ghalandari and Ghahremanpour (2013) found that herding behavior has positive relationship with individual investment decision making. Investor who has herding behavior will cause security market become inefficient such as speculative bubbles. This is because they will influence the change in stock price and lead to effect of attribution of risk and return model on the stock market. Herding behavior might cause investor change their investment decision significantly by small information, and it may be wrong or right direction for the investor. It means that the investor will change their investment decision due to some unimportant information in the market, but this decision is not necessary to make them suffer lose in the investment.

This result proves by other researchers also which are Kimue (2016), Anum (2017), and Juliet (2017).

Based on the research of Bakar and Amelia (2016) proves that there is no significant relationship between herding behavior with individual investment decision making. However herding behavior of investors will not affect the investment decision in financial market, and they will make the investment decision rationally. Those investors will not change their investment decision due to the suggestion of other people (Kengatharan, 2015). However, Subash (2012), prove that herding behavior will affect younger investors' investment decision making significantly more than experienced investors. Experienced investors will use their experience and knowledge to make investment decision rather than follow the decision of majority without thinking and planning. Furthermore, younger investor may influence by other people easily because they have less experience on making investment, therefore they will make investment decision by taking suggestion and analysis of their friend, parent, and someone who more experience and knowledge.

Alquraan, Alqisie and Shorfa (2016) showed that the herding behavior has positive and insignificant relationship with individual investment decision making which means, investor will not follow majority investors' investment decision in stock market. Research of Ngoc (2013) shown that herding behavior has moderate level of relationship with investors' investment decision making which investors who are more experience and knowledge as the time past, the effect of herding behavior will be reduce. Because investors will learn and grow up in every time the investment decision they had made. As the time past, they will not listen and use others' suggestion and analysis simply. They will make judgment and thinking on others' work by using their own experience and knowledge.

2.1.2.3 Loss-aversion

Loss aversion, an important element proposed by Kahneman and Tversky (1979) in prospect theory. Losses cause larger emotional impact among the individual investor, as most of the investors fear for loss rather than achieve gain in investment market. Kahneman and Tversky had explained that investor who has behavioural bias of loss aversion are more concerning on avoiding for the losses instead of profit making from investment. Babajide and Adetiloye (2012) agreed this statement and proved that individual investor withdraw money from the investment when making losses and wish to invest in familiar stock because loss-averse investor thought that probability of making losses in acquainted investment is the lowest. However, loss aversion bias investor might have difficulty on cutting down their losses and wish to hold the investment they make lose for a long period, as a loss-averse is in relation on the profit making in the investment therefore loss-adverse investor hope for holding the loss-making stock in order to recover their shortfalls, it can be called as gamble action for loss-aversion investor (Mercer Consulting, 2006). This result also reinforcing by Shapira and Venezia (2001) as well as Chen (2007) who analysed that loss aversion investor may hold lose investment for longer period compare to winners.

Investor's investment behaviour might be completely different toward risks on concerning about losses and gains. For instance, given the alternative to the loss-adverse or risk adverse investor between getting $1000 or having 50% chance of winning $2500 form the investment, as a loss-adverse or risk-adverse investor will choose for getting $1000 due to avoiding for any losses make from the investment. In contradiction with the loss-adverse or risk-adverse, risk-seeking behaviour investors often choose the risky alternative (Kahneman & Tversky, 1979).

A study by Zoghlami and Matoussi (2009) analysed investor behavioural financial by using Tunisian market and found that Tunisian investors are affected by psychological factors while making investment decision in stock market. This statement had been proven by most of the researcher especially Ton (2011). Study shows that investor behavioural finance toward psychological factor for loss aversion investor are having a profound impact on making investment decision thus proved that psychological factors is one of the important issue in the stock market. As demonstrated by Huckle (2004), most of the investors' predilection is discordant. Investor had the traits of loss aversion has the ability to think rationally which they will buy stock at lower price and sell stock at higher price in profitable market, statement also agreed by Weber and Camerer (1998).

Several researcher findings shows that there have a positive significant relationship between loss-aversion and investment decision making which including Bashir, Javed, Ali, Meer, and Naseem, (2013) and Alquraan, Alqisie and Shorafa, (2016), and concluded that individual investor avoid to invest in stock due to losses minimization. This result had also proved by Tamimi (2005) and Ton (2011). Even the result of loss aversion discovered by Bashir, Javed, Meer and Naseem (2013) are positively relevant with individual investment decision making but it does not have any impact on investor decision making while using personal factors (gender, education and investment experience) to investigate the relationship.

In addition, the result shows that stock market performance and loss aversion had a significant weak negative relationship between each other (Babajide & Adetiloye (2012). Market performance might be lower if investors keep withdrawn their money from investment before the maturity and lead to negative correlation on market capitalization. Besides, test generated by Nada (2013) also resulted negative correlation and concluded that most of the investors are risk taker when making investment decision.

Tripathy (2014) explained that there have significant relationship between loss aversion and investor behaviour on making investment decision.

2.1.2.4 Price Anchoring

Investor usually uses initial value to sell or analyze security value or predict current prices by using past prices can be known as investor having the feature of price anchoring bias. Babajide and Adetilove (2012) pointed out that investor who have price anchoring behavior may focus on particular value as a benchmark to compare and predict the future possible value. Some of the investors estimate share price by using past information of the company but insufficient information may occur if uses to predict the value based on the historical information (Ngoc, 2013).

Those uneducated investors usually have price anchoring tendencies, they usually make decision by looking on irrelevant source of information (Leppinen, 2013). In addition, Anum (2017) claimed that price anchoring behavior has a similarly with the representativeness bias because investor who with representativeness bias might also concentrate on recent price performances occurred in the market. Therefore, investor with price anchoring bias or representativeness bias will focus on past or current information to make investment decision.

Based on the researcher Shikuku (2012) claimed that price anchoring behavior will affect investment decision making significantly. Investor with price anchoring behavior will make quantitative assessments during the process of investment decision making while these assessments may affected by other's suggestions. Besides that, investors may analyze

information with friends and investment decision making may be influenced by the suggestions given by friends.

There is significant relationship between price anchoring behavior with investors' investment decision making. Those young investors have more prominent with anchoring behavior compare to experience investors. Because historical information can be found easily such as the financial statement of company, therefore the probability for young investors to use historical data to predict future price is higher than experience investors. Those experience investors have more experience on searching new information, therefore they seldom to use past information for estimating the expected return from the investment (Subash, 2012).

Besides that, investors with price anchoring behavior may concentrated on the recent information and past experience, and assume that the current value are exactly value. Therefore, they not only use historical data to predict current security price, also use current information to predict future security price.

There is a moderate significant relationship between price anchoring behavior and investor's investment decision making. It means that, price anchoring bias will be reduce as the time passed since investor will learn and gain experience from the past investment experience. Investor will realize that they could not get high return from the investment if they use historical data or current information to make investment decision (Ngoc, 2013).

Babajide and Adetilove (2012) found that price anchoring has an insignificant relationship with investor's investment decision making. Investor will not make investment decision by using past and current

information, thus not effect might occur on the stock market performance. Because investor can perform rationally without having the price anchoring behavior, and financial market can work more efficiently.

2.1.2.5 Self-control

Individuals might be know the meaning and the function of self-control, but not everyone will really understand the true meaning and function of self-control toward individual. Referring to the article of American Psychological Association, self-control can be represented by a person of willpower. A person lack of willpower, the ability of self-control will weak as well. Indeed, "Big Five" personality dimensions are really measuring individual differences in self-control. It was introduced by Oliver John and Sanjay Srivastava (Ameriks, Caplin, Leahy & Tyler, 2004). "Big Five" personality dimensions included extraversion, agreeableness, conscientiousness, neuroticism and openness. Self-control is one of the items within the domain of conscientiousness (Roberts, Lejuez, Krueger & Richards (2012).

Self-control is important for regulate personality behaviour. It is significant for society because it prevent antisocial behaviour happen from individual (Evans, Dillon, Goldin & Krueger, 2011). Individual has a weak ability on self-control might lead to self-control bias occur while making investment decision. Self-control bias is a human behavioural tendency that cause by lack of self- discipline and lead to far away from investor overarching goals (Roth, 2017). Lack of self-control is dangerous for every different aspect of life, especially investors having decision making on investment through the transaction such as buying or selling stocks, bonds, futures contract, forex

trading or any others financial products that potentially increase individual wealth and enhance the quality of future retirement.

On the other hand, conflict between individual inability and overarching desires will impulse individuals to consume today by using the saving for tomorrow (Pompian, 2016). The study of Evans agreed that the relationship of self-control and investment decision making are closely linked and the impulsive choice will happen when resources are scarce. This statement also supported by Nada (2013). Investors are preferred to consult financial experts before making decision for financial investment in order to reduce self-control bias towards investment. Liu (2014) stated that there is significant positive relationship among saving behaviour and professional financial advice. An investor feeling optimistic and overconfident toward their investment decision, self-control bias may occur. The mean result generated by Nada on the field of "self-control" concluded that the effect of self-control toward individual investment making is moderate based on the sample size of 400 investors.

Lack of self-control for individual has potential influence at the process of investment decision making and have an impact on individual's creation of wealth and the quality of future retirement (Pompian, 2006). Investor with self-control bias may cause several investment mistakes occur such as spend on "future money", unable to plan for future retirement, asset allocation imbalance of investment, and unable to capture of basic financial principles. Similarity, this relationship has also proven by Liu (2014), his empirical results indicate that there is a positive relationship between saving behaviour and self-control ability. A person lack of self-control, he or she is unable to accumulation his or her wealth. However, the findings of Ameriks, Caplin, Leahy and Tyler (2004) have proven that there is a negative and significant relationship between wealth accumulation and self-control.

2.1.2.6 Malaysia 14th Election

As explained by the theory of efficient market hypothesis, investors will make their investment decision based on historical information or current news. Therefore, no matter the investors' investment decision making or stock market performance, it will affected by news and bring impact to the stock market included economy and political events (Balaji, Kusuma & Kumar, 2018). Political uncertainty such as election may cause stock market performance become volatility therefore investors need to adjust their investment decision making to match with current situation otherwise they may suffer losses or earn abnormal profit during election period (Evelita & Leow, 2015).

There are some researchers found that there is a significant relationship between election and individual investor investment decision making. Investors should invest carefully at election period due to high volatility in the stock market; while the speculator has the chances to earn an abnormal profit during this period (Balaji, Kusuma & Kumar, 2018). The research of Aysan and Varoudaski (2007), claimed that election is a political instability which may make economic uncertainty occur, therefore investors have to change and adjust their investment decision making at the time of pre-election or post-election.

Furthermore, there are several researchers claimed that there is an insignificant relationship between election and individual investor investment decision making. In the opinion of Evelita & Leow (2015), the incumbent party of Malaysia won the election every five years from the independence of Malaysia, therefore investors might not change their investment decision making during the election period.

2.2 Review of Relevant Theoretical Model

2.2.1 Efficient Market Hypothesis

Efficient Market hypothesis, is one of the traditional financial theory that developed by Eugene Fama, and the definition of this theory is reported that the security price in financial market is fully affected by all the available information. Therefore, the change of security price is random and unpredictable based on random walk theory since the random walk theory is close related with efficient market hypothesis (Kisaka, 2015). There is no people can control and hide the information in the financial market. Namely, if the company suffers a large amount of losses in a project, this bad news can be disseminated by the person who knows this information, and make the investor lose confident with this company and stop to invest, and then affect the security price.

Assumption of random walk theory, the main idea of efficient market hypothesis is the information can affect the securities price quickly and efficiency at any time but the information cannot used to predict the movement of security price in the future period (Nada, 2013). Furthermore, Nouri, Motamedi, and Soltani (2017) believed that the market only can be considered as efficient market when the securities price is influenced by the all available information otherwise it is an inefficient market, and the price of securities is fair when the capital market is efficient.

Besides that, the theoretical foundation of efficient market hypothesis is being founded on three main assumptions: (1) all the investors who involve in financial market are acting rational in the process of investment decision making; (2) the transaction is random and security price in financial market

will not be affected if the investors act irrational in investment decision making; (3) the rational arbitrageurs will remove the effect of irrational investor action on the financial market (Subash, 2012 ; Nada, 2013). Therefore, efficient market hypothesis always assume that the investors are rational during the process of investment decision making, and they want to maximize the expected return from the investment.

The developer of efficient market hypothesis-Eugene Fama distinguish into three forms of efficient market hypothesis which are weak form efficiency, semi-strong form efficiency and strong form efficiency. Nada (2013) stated that weak form efficient market hypothesis means the security price already affected by the past information and the information is available for all the public. The past information in weak form efficiency includes the security price, volume of trading security, past financial report, news and stories of the company. The investor is impossible to earn high or abnormal profit by using historical data. Because the historical data in useless for analyst use to predict the future security price. For example, the company who earn very high earning in the business last year will not affect the current security price, because this historical data do not means that this company will earn high earning in this year also.

For the semi-strong form of efficient market hypothesis means that the security price is influenced by all and new information that available for the public. In the light of Subash (2012), stated that the investor will not earn highest return from the investment by using the public information in the process of investment decision making, because these information had been affect the current security price. It means that, the investor and analysis is not suitable to use current public information to predict the expected return from investment. The information that included in semi-strong form efficient market hypothesis is balance sheet and income statement such as dividend and earning. Namely, the company pay high dividend to investors currently; not means that next year have high dividend to pay also.

The last form of efficient market hypothesis is strong form, which means that all the public and private information are fully affect the security price. But the private information is not necessary help the investor to earn superior return from the investment based on the main assumption of strong form efficiency. Nada (2013), indicated that this is impossible only the strong form efficiency can influence the financial market, it also influence by the weak form and semi-strong form of efficiency. Therefore, the price of security is influence by all public and private information available in the market. But the security price always influence by the new information, and the people who can get the new information early the higher chance to get high return on investment.

But the efficient market hypothesis may not be work because the people difficult to act rational in the process of investment decision making when there is too much available information and economic change occur in the financial market (Qureshi & Hunjra, 2012). Besides that, the investor may influence by the emotion factor such as greed, fear and other subjective thinking during the process of investment decision making. Therefore, the investor may over or under-reacted to the information that available in the financial market then cause the financial market become inefficient (Babajide & Adetiloye, 2012). Namely, there is some bad news or information about a company then those investors act in overreacted, which mean that investors lose confident with the company and sell the security due to the bad news. Then the financial market become inefficient since those investors are overreacted with the bad news, and the bad news may be not truth or will not influence the security price at all.

2.2.2 Modern Portfolio Theory

Markowitz is the person who developed Modern Portfolio Theories (MPT), also called him as 'Father of Modern Portfolio Theories'. Besides that, the modern portfolio theories called as portfolio selection also. The objective of Modern Portfolio Theories is used to maximize the expected return and minimize the whole portfolio risk. This traditional financial theory is focus on portfolio investment; therefore it is more suitable for financial asset manager rather than the individual investor who hold single financial asset. The developer of Modern Portfolio Theories suggested that investors need to focus on the diversification in order to reduce the total risk on investment and learn how to diversify effectively rather than just look at the relationship between risk and return to find a profitable investment (Shikuku, 2012).

The modern portfolio theories assume that the investors are rational during the process of investment decision making and the market is efficient, this assumption same with the efficient market hypothesis, as specified by Omisore (2012). Because the irrational action of investor during the process of investment decision making will affect the security price and then cause the financial market become inefficient. This traditional financial theory also help the investors know how to classify, estimate and control expected risk and return in portfolio investment.

Figure 2.1: Optimal Portfolio
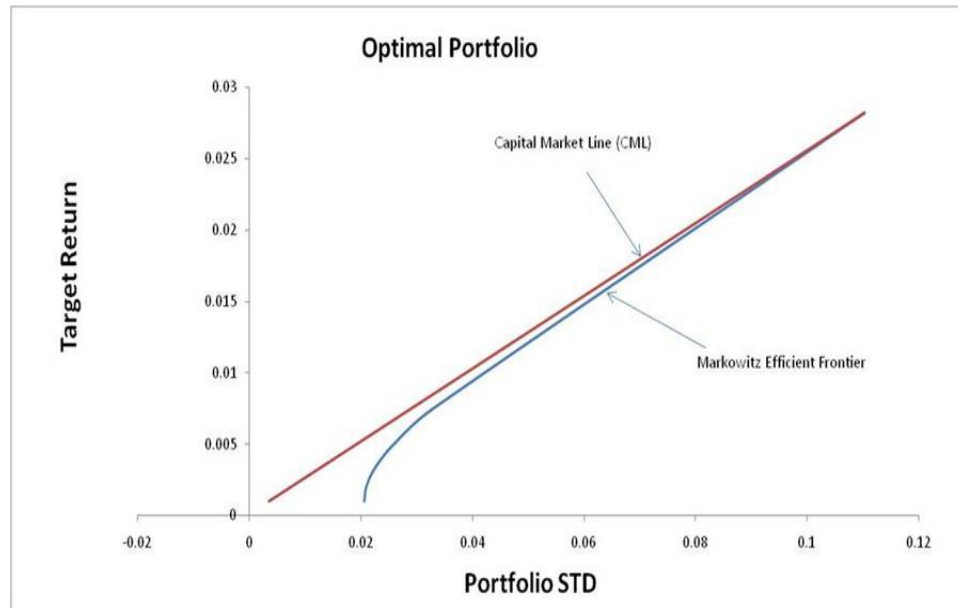
Source: Omisore, Yusuf, and Christopher, (2012). The modern portfolio theory as an investment decision tool. Journal of Accounting and Taxation.

The study of Shikuku (2012) presented that modern portfolio theories can offer lowest level of risk for each level of return; and highest level of return for each level of risk can get the efficient frontier which is the best level of diversification. The resulting line is the efficient frontier when the investor done the step of plot the lowest level of risk for each level of return and highest level of return for each level of risk. Usually, the rational investors will choose the portfolio investment that place in the upper curve because this investment will provide highest expected return with a reasonable risk level. The portfolio of investment will be more efficiency when the investment able to give the highest returns with a suitable risk level or given the lowest risk level with a suitable return (Alquraan, Alqisie & Shorafa, 2016).

Modern portfolio theory is an expectation theory; the people who apply this theory should do some prediction or estimation on the performance of investment (Elton & Gruber, 1995; Petersen & Singh, 2003). Because,

modern portfolio theory need to use expected or forecast value to measure the risk, return and correlation of the investment. Therefore, investors should use prediction based on historical value of asset return and volatility of these value in practice. These expected data difficult use for predict the future value since there is many things change in every second, and the expected data may not be accurate.

2.2.3 Arbitrage Pricing Theory

Theoretically, arbitraging has no risk as to arbitrage in financial markets, no capital is required. To profit from arbitraging, individuals just have to simultaneously buy and sell an asset in order to gain from differences in price. However, Shleifer and Vishny (1995) resulted it is risky to arbitrage in practical. Arbitragers need to have large pool of initial outlays in order to profits by exploiting the price differences of similar financial instruments on diverse markets or in distinct forms.

Moreover, the action of "arbitraging" may only be taken under inefficient market (Stout, 2003). If all markets are perfectly efficient, arbitrage will not exist since the market prices of financial instruments will react immediately to changing information, which in the other words of saying, the security prices were able to reflect the most accurate estimates of future risks and returns under perfectly efficient market. Thus, none lacking information can be considered to affect market price, and individual investors will not have any chance to gain from price differences.

Arbitrage pricing theory is actually created by Stephen Ross in year 1976 (Huberman, 2005). This theory implies that the relationship between the

returns of a portfolio and its individual assets is able to be predicted through an asset pricing model. Arbitrage pricing theory (APT) is considered as an improved model of Capital Asset Pricing Model (CAPM), where the formula of CAPM requires market's expected return but the APT applies actually the expected return of risky asset. In addition, such more flexible model is taken by arbitrageur to benefit from mispricing securities. To make risk-free profit through arbitraging, individuals may short overpriced security predicted by the APT model.

Furthermore, individual investors with different characteristics may have different perceptions toward arbitraging, as people with different points of view will make distinct investment decisions. A loss aversion investor may try to benefit from pure arbitrage which he or she thinks that it is a risk-free investment with reliably moderate return, within the plausible arbitrage boundary (Docherty & Hurst, 2016). In contrast, predicted price inefficiencies tend to be relatively small in reality, and hence arbitraging becomes risky in practical as individuals will face difficulties in gaining profits or spreads from differences in price.

Conclusively, arbitraging is being considered as an action that is perishable and self-defeating. Thus, individual investors whoever making the investment decision of going to arbitrage should possess certain important features such as advanced self-control and well-managed of state of one's psyche (Bertaut & Haliassos, 2001). On the other hand, people with characteristic of over-confident are unsuitable in becoming an arbitrageurs, as they will overestimate the essence of information signals generated regarding to the security values. In addition, other retail investors may also affect by the trading of those informed overconfidence arbitrageurs by exploiting pricing errors introduced (Daniel, Hirshleifer, & Subrahmanyam, 2001).

As mentioned earlier, Arbitrage Pricing Theory (APT) depends on several factors in deriving expected return instead of just looking at risk premium $(r_m - r_f)$ as in Capital Asset Pricing Model (CAPM).

CAPM: $r = r_f + Bf$

APT: $r = r_f + b_1F_1 + b_2F_2 + b_3F_3...$

It is good to apply APT as it grants the ability to build portfolio with any level of sensitivity to each of the factors. The portfolio which constructed by using APT will then be well-managed to its strengths and capabilities. Besides, sensitivity of it was optimised to each of the predicted factors. Moreover, it helps protect the portfolio against unpredictable events or factors.

Nonetheless, since any inefficient pricing setups are normally been responded immediately, and hence the opportunity of grabbing risk-free profit is often eliminated in a matter of seconds. On the side, APT is not always good for use as factors to use need to be considered, and the beta of each factor associated with its stability should be determined. However, it may be difficult for people to construct a pure factor portfolio by applying Arbitrage Pricing Theory (APT).

2.2.4 Capital Asset Pricing Model (CAPM)

The CAPM formula as below:

$$r_a = r_{rf} + B_a (r_m - r_{rf})$$

Where:

r_{rf} = risk free rate of return

r_m = return on market portfolio

B_a = beta of asset

Capital Asset Pricing Model (CAPM) is one of the famous theories that measure a relationship between systematic risk and expected return. The CAPM can helps people to define the required return in any of the investment. If the beta increase, the required return also keep increase whereas if the beta decrease, it will lead the required return decrease too. The CAPM was developed by Harry Markowitz (1959) on the diversification and modern portfolio theory and CAPM was introduced by both of the researchers which are William Sharpe (1964) and John Lintner (1965). The risk and return play an important role in investment decision (Sharpe, 1985).

Based on the study of Markowitz portfolio theory also called a "mean-variance model", the mean and variance of the return which included in the portfolio can be used to measure how effectiveness for a given portfolio. Apart from that, different investors have different characteristics. Some investors prefer high risk high return and some investors prefer low risk low return. However, in the study of Markowitz portfolio theory an investors are assumed to be risk-averse, which mean that the investors will choose the portfolio which is low risk when there are given two portfolio that offer the identical expected return.

Apart from that, Sharpe (1964) and Lintner (1965) introduce the mean-variance model with extra two key assumptions. The borrowing and lending at a risk free rate is the first assumption which mean that the risk free rate of return that allow the investors to borrow or lend whichever amount of the money. Another assumption is all the investors have same expectation. It

results in evaluating the same probability distributions of future return (Elbannan, 2014).

On the testimony of Pettengill, Sundaram and, Mathur (1995) found that the relationship between returns and beta can be positive and negative. When the market is boom, there is positive relationship in contrast when the market is recession, there is negative relationship. In the study of Theriou, Maditinos, Aggelidis and Theriou (2007), they assured that there is significant relationship between returns and beta. When the stocks or portfolio have generate a higher return, which mean that the stocks or portfolio is consider higher beta and higher risk. On the other hand, when the stocks or portfolio have generate a lower return, which means that the stocks or portfolio is consider lower beta and lower risk.

2.3 Proposed Framework

Figure 2.2: Proposed Conceptual Framework

Independent Variables
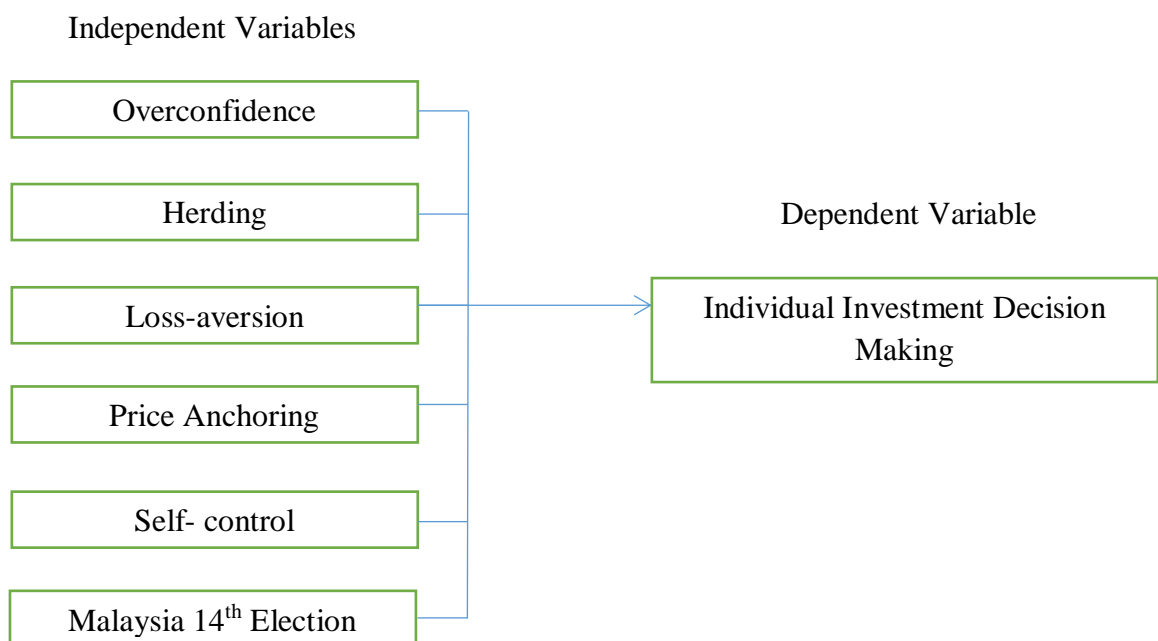
Research expects that there have a significant relationship between overconfidence and individual investment decision making which also agreed by the findings of Barber and Odean (1999), Al-Horani and Haddad (2011), Abdulaziz (2013), Bakar and Amelia (2016), and Juliet (2017). After that, it also has an expectation of significant relationship between loss aversion and individual investment decision making with the result found by the previous researchers such as Bashir, Javed, Ali, Meer and Naseem (2013), and Alquraan, Alqisie and Shorafa (2016). Next, this research also wish to get positive significant relationship between herding and individual investment decision making which follow the result given by Ghalandari and Ghahremanpour (2013), Kimue (2016), Anum (2017), and Juliet (2017). Besides that, the research also have an expectation on significant relationship between price anchoring behavior and individual investment decision making which supported by the research of Shikuku (2012), Subash (2012), and Juliet (2017). In line with the finding of Liu (2014), there are also expect that there have a significant relationship between self-control and individual investment decision making. Lastly, this research is expected to have an insignificant relationship between Malaysia 14th election and individual investment decision making, based on the conclusion made by Evelita and Leow (2015).

2.4 Conclusion

The related journal articles were presented in the literature review. Besides that, this chapter defined the meaning of overconfidence, loss aversion, herding, price anchoring, self-control, Malaysia 14th election and individual investment decision making. Furthermore, the relationship between psychological financial behaviour and individual investment decision making was explained. Next, traditional finance behavior theories are demonstrated. Lastly, the proposed framework was presented. This research will then continue to next chapter with the identification of research methodology and its discussion

CHAPTER 3: METHODOLOGY

3.0 Introduction

Research methodology can be viewed as a systematic procedure used to collect relevant data and relative information for the aim of making a good decision. This chapter provided an overview of methods would be used in the following chapter. It included the research of the design following by the data collection method. It also provided design of sampling, instrument used for research, measurement of constructs, processing of data as well as the analysis of data. At the end, end up with a conclusion.

3.1 Research Design

Qualitative research was designed to search out a wide range of dimensions of the social world (Mason, 2002), including texture of daily life, way of research participants conduct their tasks, understanding and experiences of research participants. Nevertheless, quantitative research can be viewed as a social research that is aims to identify the problems by data collected from historical numbers and statistics (Muijs, 2010). Quantitative research focuses on cause and effect to make specific prediction and hypothesis (Sukamolson, 2007). In this research, method of quantitative research was implemented in order to conduct the purpose of this research.

For further investigation purpose, this research project would be applied partial least squares structural equation modeling (PLS-SEM) to transform the variables data into empirical results. A survey research is employed by this research. The data of stock market movement that needed for dependent variable would be collected from appropriated website. On the other hand, several questions were set for dependent and independent variables through questionnaire in order to obtain better information from respondents to achieve research objective, such as investors in Ipoh and Kampar (Perak).

3.2 Data Collection Method

Process of data collection is a procedure for researcher to gather and measure the information from all the relevant sources that enable to answer several research questions and hypothesis testing. It should be easy to understand and clearly identify in order to ensure the data are accurate and valid. There are two categories of data collection for research project, which are first hand data and historical data. However, first hand data will be applied in this research.

3.2.1 Primary Data

As the name suggests, primary data is the first-hand data that first time collected by the researcher for the research purpose (Ajayi, 2017). This data also can be called as real time data. Primary data came from questionnaire, personal interview, surveys and etc. Collection of first-hand data has the advantage in which the questionnaires are designed specifically for the

objective of research, therefore it can enhance the quality and degree of accuracy for the data (Hazen, Boone, Ezell & Jones-Farmer, 2014).

In order to cater the research objective that examines the relationship between overconfidence, herding, price anchoring, loss aversion, self-control and Malaysia 14th election towards individual investment decision making, the collection of primary data is relative suitable than secondary data. The questionnaires are designed as close-ended question since this type of question is more specific and easy to answer, it just requires respondents to choose their answer from multiple options. Binary and ranking questioning was used for structure of questionnaires.

3.2.2 Secondary Data

Secondary data is a type of data that related to the past. It also can be viewed that data has been generated by another party or researcher, such as journals and articles of other researchers even in published or unpublished, annual report or statistic of countries (Baoduo, 2011).

In this research, most of the journals, articles and website documented sources are used as references to support the research objective, such as ScienceDirect, ProQuest and Google Scholar. The advantages for secondary data are faster to access, time-saving and able to get the data from different location with different resources.

3.3 Sampling Design

3.3.1 Target Population

The main objective of this research is to investigate the interrelationship between behaviour biases of finance towards investment decision among investor who involve in Malaysia's stock market. The target populations of this research are the individual investors on Malaysia stock market.

3.3.2 Sampling Frame and Sampling Location

This research will use sampling method to investigate the individual financial behavior bias towards individual investment decision since the total population is huge, and might be waste time and money on collecting the population data. Therefore, sampling frame and sampling location are applied.

3.3.2.1 Sampling Frame

The investors of Malaysia stock market will be the sampling frame in this research. This research will target on 120 individual investors who involve in Malaysia stock market. Because this research is examine the significant of financial behavior of individual investor toward Malaysia stock market.

3.3.2.2 Sampling Location

Furthermore, the sampling location chosen for this research is Perak state. To be specific, this research investigate the financial behavior of individual investors at the investment bank which located on Ipoh and Kampar (Perak).

3.3.3 Sampling Elements

Individual investor who involve in Malaysia stock market might take part in this research as the respondent and answer the questionnaire which based on investor's gender, investment experiences, income level and etc.

3.3.4 Sampling Technique

Sampling technique divided into two categories which are probability sampling and non-probability sampling (Taherdoost, 2016).

Figure 3.1 Sampling Techniques
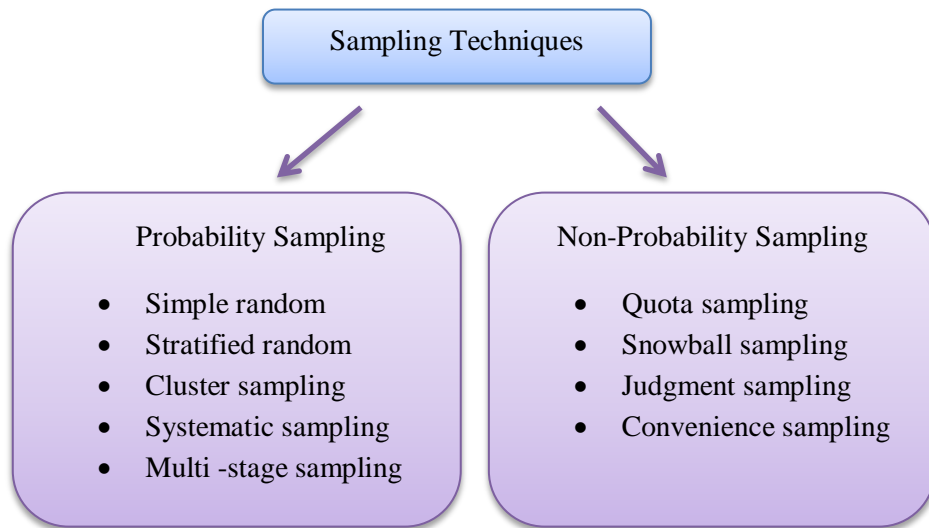
Adapted from: Taherdoost, H., (2016). Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research. International Journal of Academic Research in Management (IJARM).5(2), 18-27.

3.3.4.1 Probability Sampling

Probability sampling is everything in the population has same opportunity to become samples which the respondents will be picked randomly. Probability sampling also named as representative sampling or random sampling (Alvi, 2016). The advantage of probability sampling is reduce systematic error and sampling biases and comes along with the disadvantage of time consuming and high cost. Probability sampling including simple random, stratified random, cluster sampling, systematic sampling and multi-stage sampling.

Firstly, the simple random is every element of population has the same chance to become sample. The criteria to use simple random is every unit must be mutually exclusive and population is homogenous (Taherdoost, 2016). Secondly, systematic sampling is the element of population select at a regular interval. Namely, the unit occurs after every 15 minutes or every 10th unit appearing on the list. This sampling can enhance the coverage of sample toward the whole population. Thirdly, stratified random is the population divided into subgroups that randomly pick the sample from each group. Investigator will use stratified random when the population is heterogeneous; therefore they need to divided into subgroups which are homogenous. Fourthly, cluster sampling is the population categorized into cluster (subgroup) based on the geographical allocation. The cluster sampling have lower cost spending compare with simple random and systematic sampling if the population is cover wide geographical area. Last but not least, multi-stage sampling is the most complicated sampling method compare with other probability sampling because of the combination of two or more probability techniques. For example, the investigator examined the entire Malaysian, and divide area of Malaysia into number of geographical regions, called as primary units. After that, choose certain region randomly and divided it into subdivision (local authority region) called as second stage unit, repeat the step and divided the subdivision into smaller area (towns or cities). These steps can help to reduce cost and time consuming because of the selected samples had been concentrated.

However, non-probability sampling also named as non-random sampling, every unit of population has no same opportunity to become sample in the research (Alvin, 2016). Because the selection of the sample was not picked by randomly since it is based on the subjective judgment of researchers. Advantages for non-probability sampling is save cost and time spending was less while the disadvantages is has more chances to get systematic error and sampling biases. Non-probability sampling divided into quota sampling, snowball sampling, judgment sampling, and convenience sampling.

Firstly, quota sampling is the sampling techniques that cannot be choose randomly, it was chosen based on the predetermined characteristics; therefore the entire sample in quota sampling have same characteristics (homogenous). This sampling technique is lower cost and time consuming compare with stratified random. Investigators might use quota sampling when the population is heterogeneous. Secondly, snowball sampling also called as chain sampling, this technique will rely on initial subjects to generate additional subject in order to increase the sample size. For example, investigator required 10 respondents involved in the survey and those respondents share the survey to others lead to the respondents in the investigation increase. This sampling technique is useful for the research which involved only small population. Thirdly, judgment sampling is the investigator selects the element from population into sample based on their knowledge or professional judgment. The criteria for the element in the research had been decided, therefore the researcher only focus on the respondents who fulfill the criteria. Lastly, convenience sampling also named as opportunity sampling or accidental sampling. Investigator focus on the respondent who can approach easily, and this technique is useful for the huge target of population. Namely, the questionnaire distributed by the investigator and completed by respondents will be accept and use for this research.

In this research, it was suggested to use convenience sampling (non-probability sampling) to carry out the investigation, because this research only concentrated on the investor who involve in stock market, not the background of the respondent.

3.3.5 Sampling Size

The 120 respondents will be targeted as the sample size for this research. This research was accepted all the data that collected from the investor who invest in Malaysia stock market.

3.4 Research Instrument

3.4.1 Questionnaire Survey

Questionnaire method is the most popular way for the researchers to get the data from respondents, because it is cheaper and quicker way to get the data compare with the face-to-face interview and telephone interview (Mathers, Fox & Hunn, 2009).

There are several mode of delivery to collect data by using questionnaires such as self-administered mail, email, administered telephone and face-to-face (Bird, 2009). In this research, the mode of distribute questionnaires will be face-to-face as the target was focus on investor, hence, needed to ensure that the respondent was truly involved in the stock market only can be involve in this survey.

The question listed in questionnaires should be clear and straight forward to the respondents to answer. A good questionnaire can help investigator get data more accurately and the words of deliver should be simple and direct in order to deliver clear cut understanding to the respondent.

The question set in the questionnaire will be used fixed-alternative question which consists of multiple-choice answer to the respondent. For example, simple-dichotomy question provide one or two alternative answer (Yes or No), and determinant-choice questions provide multiple alternative answer (A, B, C or others).

3.4.2 Questionnaire Design

The designation of the questionnaire was related to the content of questionnaires, the cover page of questionnaires will consist of the title and objective of this research. All basic information for respondent should be included such as income level, gender and marital status. Besides that, the questionnaires should provide the acceptance letter of UTAR and personal data protection statement to protect private information for the respondents and mention that the survey is solely for academic purpose. There are three section included in this questionnaire.

Section A comprises the demographic question which is the respondent personal information. It including age, gender, education level, monthly income, and marital status of all respondents.

Section B is the question that mainly focus on dependent variable which is individual investment decision making in stock market. This section have four question will be listed in questionnaires.

For the Section C asked about the question which related to independent variables (overconfidence, herding, price anchoring, loss aversion, self-control and Malaysia 14th General Election) that might affect individual investment decision making. There are three to five questions will be set for

various independent variables. Both section B and section C will apply the Five - Point Likert - scale for respondent to answer the question, where 1= extremely dissent, 2= dissent, 3= neutral, 4= assent, and 5= extremely assent.

3.4.3 Pilot Study

The meaning of pilot study is conduct small study to test the whole research process in the preparation of a large study (Hassan, Schattner & Mazza, 2006). It means that the pilot study is pre-study of the research. A good pilot study provides a clear list of the formal framework to researchers, and lead to high quality of research. Pilot study can be conducted easily because it only proceeds for small group of investors (Lancaster, Dodd & Williamson, 2002).

Lancaster, Dodd and Williamson (2002) suggested that the number of respondents to participate in pilot study should be 30 investors or above. Therefore, this research will distribute 30 set of questionnaires to the UTAR academic staffs as well as students to carry out the process of pilot study. After done the data collected from 30 set of questionnaires will run with the Smart PLS software to test the reliability and validity of the question that had been listed in the questionnaires.

3.5 Constructs Measurement

Dependent variable in this research was an individual investment decision making in stock market. Apart from that, there are six independent variables involved in this research which are overconfidence, herding, price anchoring, loss aversion, self-control and Malaysia 14th General Election. To make the questionnaire more efficient, respondent was required to response on the alternatives of Five Likert Scale (Likert, 1932).

3.5.1 Origin of Constructs

Table 3.1: Origin of Constructs

Dimension	Author	Scale of Measurement
Individual investment decision making (Dependent variable)	Kisaka (2015)	Ordinal
Overconfidence (Independent variable)	Ul Abdin, Farooq, Sultana, and Farooq (2017).	Interval
Herding (Independent variable)	Nada and Moa'mer (2013)	Interval
Loss aversion bias (Independent variable)	Juliet (2017).	Interval
Price anchoring (Independent variable)	Murithi (2014)	Interval
Self-control (Independent variable)	Nada and Moa'mer (2013)	Interval
Malaysia 14th Election (Independent variable)	Balaji, Kusuma and Kumar (2018)	Interval

Source: Developed for the research

3.5.2 Scale of Measurement

Stanley Smith Stevens was developed "Scale of Measurement" or also can be known as "Level of Measurement" in 1946. He had introduced three types of scale of measurement for research, including nominal, ordinal as well as interval. The scale of measurement refers to the specific way in which the dependent and independent variables are measured in scientific research. Besides, the researchers can use the scale of measurement to classify data in an organized manner, depending on the three types of scale of measurement they choose. The nominal and ordinal is considered the low level of measurement, while the interval is considered high level of measurement (Crossman, n.d).

3.5.2.1 Nominal Scale

Nominal scale is a measurement that used based on the qualitative classification instead of quantitative classification (Stevens, 1946). It is the most common and easy scale to be used while setting the questionnaire in the field of demographic profile. For this scale, it is the determination of individual equality where it only can measured the term of individual belongs to which different categories and the individual will not have the equally answer on the particular question. For example, gender and etc. Individual can either male or female, cannot having the gender of male at the same time also female. Other example that can be used for nominal scale is shown below:

Marital Status

☐ Single

☐ Married

Source: Developed for the research

3.5.2.2 Ordinal Scale

Ordinal scale is the scale that is totally different with the nominal scale which the ordinal scale are based on quantitative classification and is in ordering and ranking. Allen and Seaman (2007) mentioned that the ordinal scale is the most appropriate level of measurement in numerical measurement. For instance, age and etc. The age for individual will not be exactly at 21 years old, it might be in 21 years old and 1 day. Therefore, the best way to measure the age can be used in between of 21 to 25 or any others. Other example that can be used in ordinal scale has been shown below:

Income (RM)

☐ Below 1,000   ☐ 1,000 – 3,000

☐ 3,001 – 5,000   ☐ 5,001 and above

Source: Developed for the research

3.5.2.3 Interval Scale

As compared to nominal scale and ordinal scale, the interval scale is categories high level of measurement, this is because interval scale has provide an information regarding the order and the differences between values is exactly the same. For example, the difference between a 90 degrees Fahrenheit and 80 degrees Fahrenheit is exactly same as the difference between 90 degrees Fahrenheit and 100 degrees Fahrenheit. On the other hand, in this research will conducted Likert Scale to measure the interval scale, Likert Scale is one of the measurement that are most frequently used in questionnaires. All the dependent and independent variables (overconfidence, herding, price anchoring, loss aversion, self-control, and Malaysia 14th election) can be considered as interval scale. Another example that can be used in interval scale has been display below:

No	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I am confident with my trading skill and investment knowledge.	1	2	3	4	5

Source: Developed for the research

3.5.3 Scaling Technique

The Likert Scale is one of the measurement that can be used to measure the people attitudes, beliefs, opinions and others. Based on each of the question created, the respondents should select a degree of agreement or disagreement toward a particular question given on questionnaires.

Therefore, in this study will adopted the five response alternatives of Likert Scale ("Strongly agree – 5", "agree – 4", "Neutral – 3, "Disagree – 2, "Strongly Disagree – 1") to design the questionnaire (Likert, 1932). The advantage of using Likert Scale to do the survey collection is because it is the most effective method to let the respondents easily quantifiable and distinguish the statement. Apart from that, the Likert Survey are considered very efficient and low cost when implement for data collection, because it consist of high versatility and can be sent via internet, social media or direct to someone.

3.6 Data Processing

Data processing is a common and critical step in doing the research by distributed all the questionnaires and collecting back the data and transform it into the statistical analysis. Most of the organization commonly used questionnaires to collecting the data due to easier measure of individual opinions and practices through the questionnaires (Sekaran, 2006). The process of data processing involved four important steps. It including checking, editing, data coding as well as data transcribing.

3.6.1 Checking

Based on this research, the researcher will adopted the 7'c (correct, clear, complete, concrete, concise, consideration, courteous) to check whether there is an error that exist in the questionnaire. In order to design a good questionnaire, it must have seven qualities. The 7'c provide a checklist to

ensure that the respondents can gets the message clearly. Besides, the researcher also need to ensure that there are no grammar and jargon error, because it will make the respondent misunderstanding and confuse what should the statement is going to tell. Apart from that, the researcher need to figure out those complete and incomplete questionnaires and then make some improvements based on the results.

3.6.2 Editing

After successfully checking the whole questionnaire, the researcher need to make some editing on the questionnaire. The editing include the modification and review of the collected survey data. The researcher should minimize the error by correcting the errors and making statement more precise and clearer such as grammar and jargon error, the recasting sentences, the usage of words, deleting incomplete sentences and others. The purpose of editing is to avoid omissions error on the questionnaire and also to make sure that there is a desirable quality.

3.6.3 Data Coding

Data coding can be used in the questionnaires to allocating number make it more meaningful and precise distributed to the respondents. All the sections consist in the questionnaires are using the data coding. For instance, under section A was the demographic profile to the respondent, common question might be asking was the gender, "1" represented male while "2" represented female. However, under section B and C was more toward the respondent opinion and attitude on the investment. Therefore, in order to have a clearly

understanding on the respondent opinion, researchers can using the data coding to measure individual opinion on investment from "1" to "5" which represented "Strongly Disagree" to "Strongly agree".

3.6.4 Data Transcribing

Data transcribing is the process that linked with the coding of data. After the data coding has been perform, researchers can transferring the data that has been coded from the questionnaires into the statistical data by using partial least squares structural equation modeling (PLS-SEM) software and come out the outcome of cronbach's alpha, composite reliability (CR), average variance extracted (AVE), discriminant validity, and hypothesis testing to make the result more reliable.

3.7 Data Analysis

Data analysis is the process of converting the data collected from respondents into useful result by using analytic procedure. This research use partial least squares structural equation modeling (PLS-SEM) to study and interpret the data have been collected from the respondents. There are five statistics result will be mentioned in this study such as cronbach's alpha, composite reliability (CR), average variance extracted (AVE), discriminant validity, and hypothesis testing.

3.7.1 Construct Validity

3.7.1.1 Cronbach's Alpha

Cronbach's alpha is one of the typical measurements of the construct validity. The basic way to assess internal consistency reliability is cronbach's alpha; the high value of cronbach's alpha means that all elements have similar range and meaning with one construct (Nils & Frederik, 2010). Furthermore, the theory of cronbach's alpha assumes all indicators have same reliable, but it is impossible for all indicators have equal reliable in reality. Therefore, this is the weakness of cronbach's alpha, and this weakness will cause the PLS-SEM underestimate the actual value of internal consistency reliability. Wong (2013) said that cronbach's alpha can provide conservative measurement in PLS-SEM software, and use to quantify internal consistency reliability in research. The cronbach's alpha result is acceptable when the value is equal or higher than 0.7 (Durdyev, Ihtiyar, Banaitis & Thurnell, 2018). But, Ajibade and Ahmed (2010) suggested that the acceptable figure of cronbach's alpha is 0.6.

3.7.1.2 Composite Reliability

Composite reliability is used to overcome the problem of cronbach's alpha, because it allow for the indicator with different weight (Nils & Frederik, 2010). Therefore, composite reliability is similar with the cronbach's alpha. In the research result, the composite reliability equal or more than 0.7 is indicated as acceptable reliability (Peng & Lai, 2012). It means that the measurement model is considered as satisfactory internal consistency reliability when the value of all composite reliability is exceeds 0.7 (Noraini

& Nurul, 2014). But Wong (2013) said that for the exploratory research, the value of composite reliability equal or more than 0.6 is acceptable result also.

3.7.1.3 Average Variance Extracted (AVE)

Average Variance Extracted (AVE) was proposed by Fornell and Larcker (1981), it stated that the used of AVE is to measures the amount of variance captures from the latent variable as well as cause by the measurement error. AVE can be knows as one of the important tool to evaluate the convergent validity (Wang, Wallace, & Wang, 2017). However, Fornell and Larcker also suggested the range of AVE must in between 0 to 1, the result for AVE should be at 0.5 or more than only can be accepted which means that the amount of variance captures from the latent variable at least 50% or above. If AVE below 0.5 consider the amount of variance are cause by measurement error. Value for AVE at 0.5 or above consider valid, and thus AVE can be used in discriminant validity to determine the relationship among the independent variables.

3.7.2 Discriminant Validity

Discriminant Validity is using to assess the concepts or measurements that supposed to be no relationship or unrelated. Discriminant Validity is a step been used after successfully established the Composite Reliability, Cronbach Alpha as well as an Average Variance Extracted. There are involved three criteria in Discriminant Validity, which are analysis of Average Variance Extracted, analysis of Cross- Loadings and analysis of Hetrotrait Monotrait correlations (HTMT). Nonetheless, the most frequently

criterion to assess the Discriminant Validity which is Fornell and Larcker (1981) criterion. Based on the analysis of Average Variance Extracted is to measure the relationship between square root of AVE in each construct and inter-construct correlation. When the square root of AVE value is more than the inter-construct correlation value, the Discriminant Validity is considered adequate. On the other hand, when the square root of AVE value is less than the inter-construct correlation value, the Discriminant Validity is considered inadequate.

3.7.3 Assessment of Structural model

Once the structure of cronbach's alpha, composite reliability, average variance extracted (AVE) and discriminant validity have been viewed as valid and reliable, the next step is to deal with the results of structural model or called as inner model. The result of structural model represents the relationships among constructs variables, as the dependent and independent variables that were hypothesized in the research model (Duarte & Raposo, 2010).

3.7.3.1 Path Coefficients

One of the features in PLS-SEM for assessment structural model is using the bootstrapping to generate the results of path coefficients. It is a very important step for data analysis, because it depends on the procedure of bootstrapping to get the significance of parameter estimates and estimate the standard errors (Chin, 1998). The result of path coefficients will show the dependent and independents variables significance levels, confidence

intervals, P-values, and T-values. However, within those information, the numbers of T-values are the most significant value since it can indicate to researchers that whether the inner models are significant or not. Once the T-value is greater than 1.96, it would consider as a significant value.

3.7.3.2 Hypothesis Testing

The conceptual framework for this research is adopted from the dependent variable and those independent variables. Furthermore, the significant level of this research is set by 10%. Moreover, based on those theoretical bases as mentioned before, the following statement of hypotheses are proposed:

H1: Overconfidence will have significantly influence on individual investment decision making.

H2: Herding will have significantly influence on individual investment decision making.

H3: Price anchoring will have significantly influence on individual investment decision making.

H4: Loss aversion will have significantly influence on individual investment decision making.

H5: Self-control will have significantly influence on individual investment decision making.

H6: Malaysia 14th election will have insignificantly influence on individual investment decision making.

Hypothesized Research Model
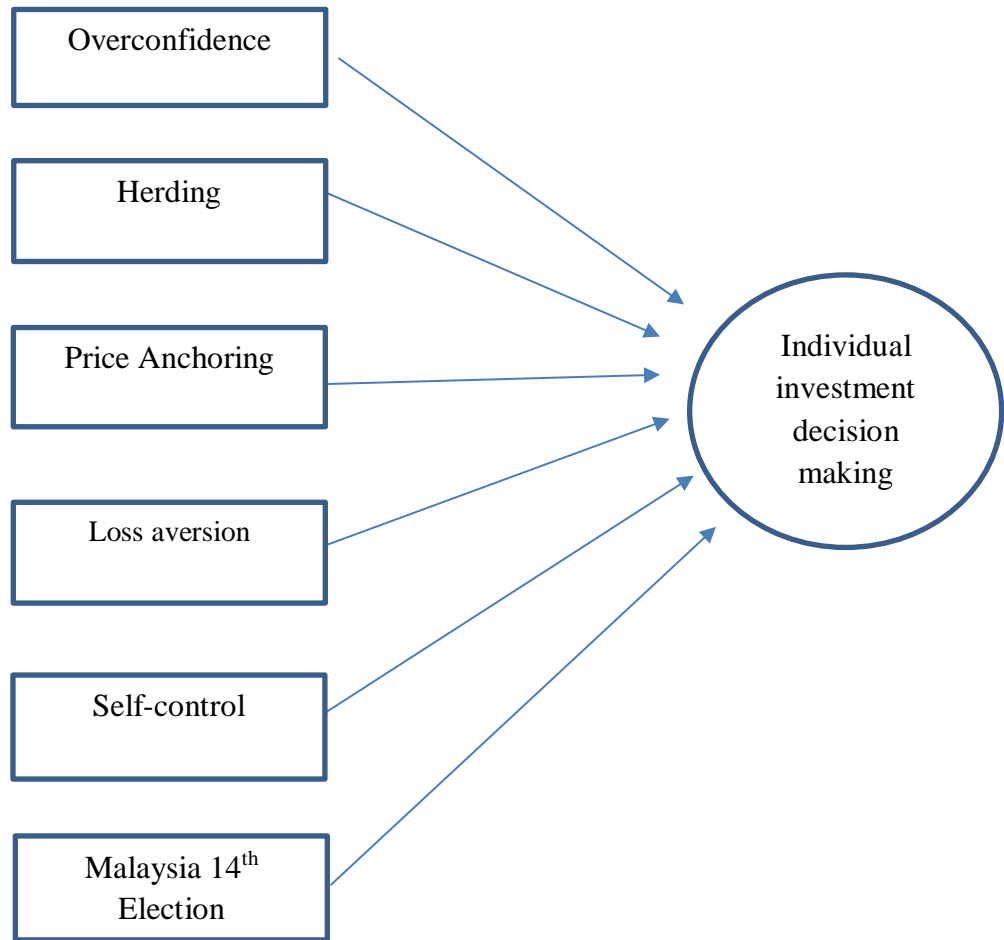
3.8 Conclusion

Come to an end, this chapter has discussed the research methodology in details and provided certain useful information for further researchers. Which began from the research of design, the data collection method, the design of sampling, instrument used for research, measurement of constructs, processing of data and the analysis of data. Those useful data and information collected through questionnaires will be discussed in the following chapter.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

The purpose of this chapter was used as analysed and interpreted the result generated from the questionnaire. This chapter presented investor's demographic profile and also the descriptive analysis. By using the software application of SmartPLS for Partial Least Squares Structural Equation Modeling (PLS-SEM), it comes out descriptive analysis and the resulted data of construct validity, discriminant validity as well as path coefficient.

4.1 Descriptive Analysis

Descriptive analysis is the method that used to summaries data in an easier way in order to perform a clear and simple understanding in this research. For Section A of investor demographic profile, it employed by using the pie chat to shows the frequency and percentage among 120 respondents who involved in the survey. Following Section B and C will be performed through the software application of Smart-PLS to calculated mean and standard deviation.

4.1.1 Investor Demographic Profile

Figure 4.1 : Gender of Investors
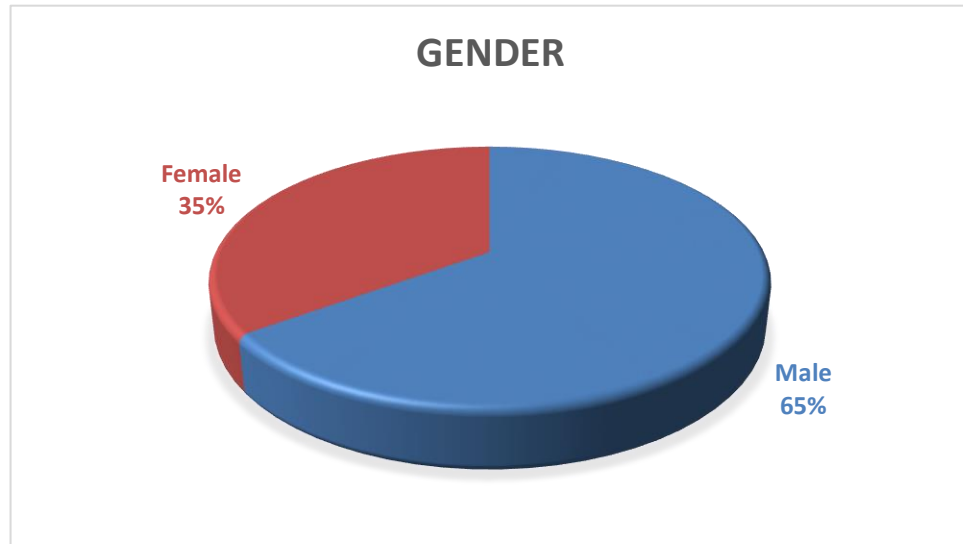
Source : Developed for the research

From the above figure 4.1 shows that out of 120 investors was involved in survey, there are 42 respondents are female with 35% and remaining 78 respondents are male with 65%.

Figure 4.2 : Age of Investors
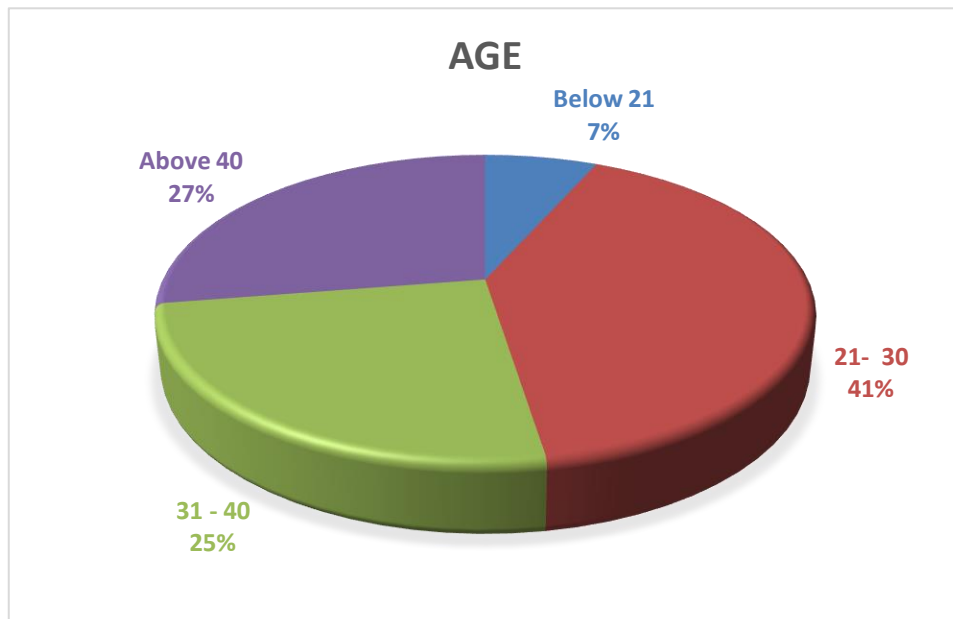
Source : Developed for the research

Figure 4.2 demonstrated that majority of the investors was in between the age of 21 to 30 year old which consist of 41% among 120 respondents. There are 27% of the investors was above 40 year old which consist of 33 respondents while the investors of 31 to 40 year old was slightly less than the investors who above 40 year old which only generated 25% with number of respondents of 30. However, there are only 7% of the investors was below 21 year old which mean that only 9 respondents was involved in this survey.

Figure 4.3 : Marital Status of Investors
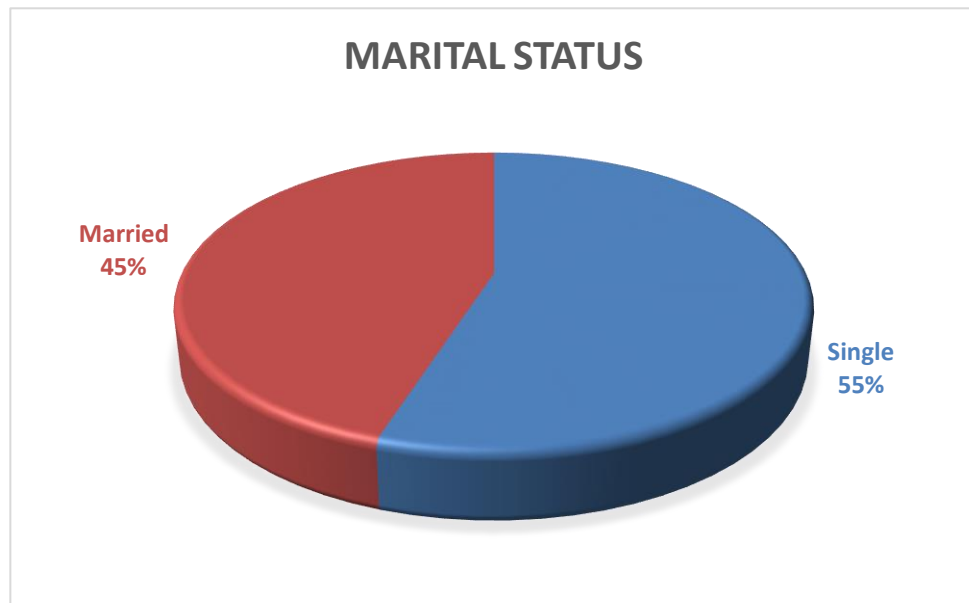
Source : Developed for the research

Figure 4.3 presented the result among 120 investors, there are 55% of the investors was married while 45% of the investors was in the marital status of single which can be known as 66 respondents was married while 54 respondents was single out of 120 respondents.

Figure 4.4: Education Level of Investors
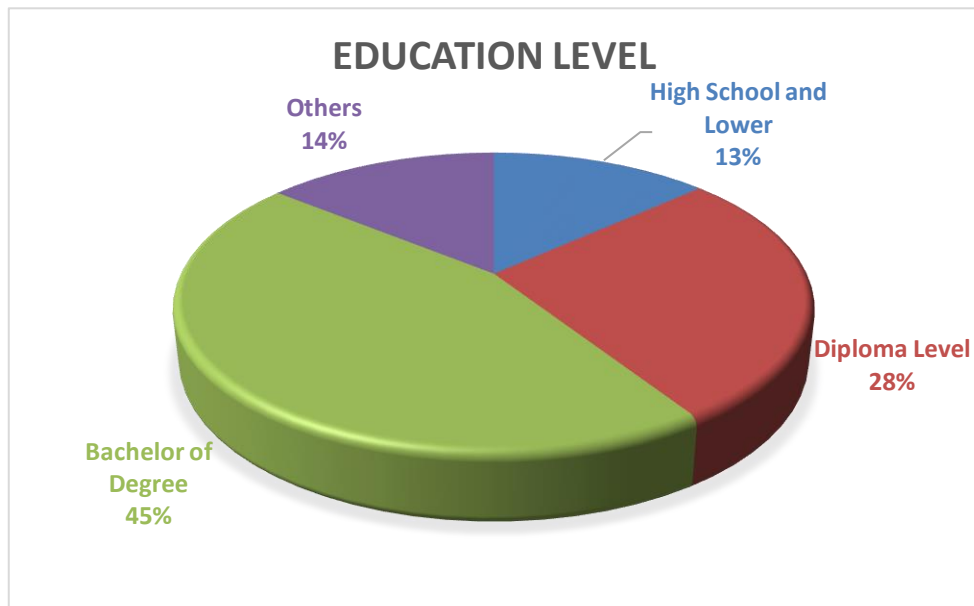
Source : Developed for the research

According to the figure 4.4 shows the education level among 120 investors, most of the investors was degree holder which consist of 45% with 54 respondents. Out of 120 respondents, there are 34 respondents was diploma holders occupy 28% in this survey. The remaining 27% of the investors was almost equally occupy of 14% and 13% to the investors who with high school and lower education level and also education level which above bachelor of degree.

Figure 4.5 : Income Level of Investors

INCOME LEVEL (RM)

Below 1,000
7%

1,000 - 3,000
30%

3,001 - 5,000
35%

Above 5,001
28%
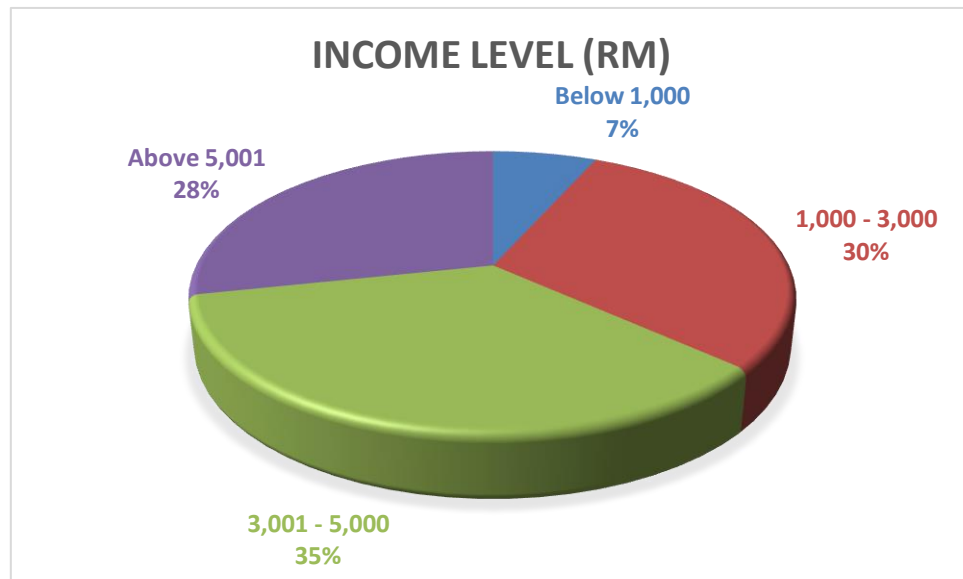
Source : Developed for the research

Figure 4.5 presented the monthly income level among 120 investors who involved in this survey. The least frequency is 9 respondents who monthly income level was below RM1,000 which comprised 7%. While the higher frequency was 42 respondents with monthly income level of RM3,001 to RM5,000 which occupy 35% in the survey. Besides, there are 30% of the respondents who having monthly income of RM1,000 to RM3,000.For the income level who above RM5,001 was comprised 28% in the survey which stated that there are 34 respondents' income was above RM5,001.

Figure 4.6 : Investing Experience of Investors

INVESTING EXPERIENCE

Below 1
3%

Above 10
15%

6 to 10
26%
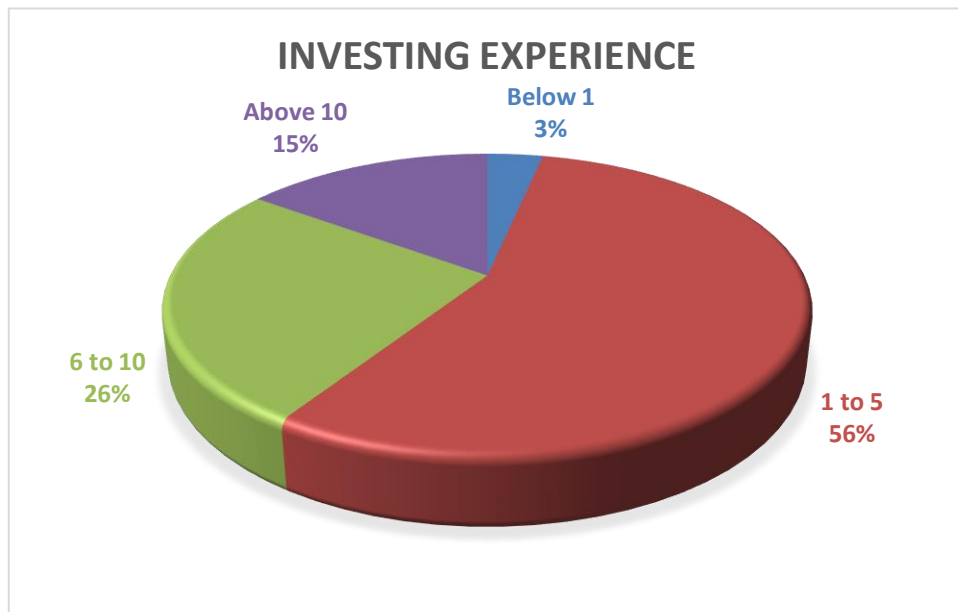
1 to 5
56%

Source : Developed for the research

The figure 4.6 clearly presented that 56% of the investors are having the investing experience of 1 to 5 years which consist of large portion of 68 respondents in the survey. Minority of the investors have the investment experience of below 1 year which comprised of only 3% among 120 respondents. Result also shows that 26% of the respondents are having 6 to 10 years investing experiences which comprised of 32 respondents while the respondents who having investment experience more than 10 years are occupy 15% which only had 18 respondents.

4.2 Measurement and structural model

In traditional, the partial least squares structural equation modelling (PLS-SEM) was aim to maximise the variance of the dependent variables and mainly focuses on the prediction of primary data. In the following part of this research, further evaluation of the research finding of PLS-SEM 3 interpreted and analysed accordingly.

4.2.1 Cronbach's Alpha (CA)

 "Cronbach's Alpha" is the way to measure internal consistency reliability and validity in primary data research (Nils & Frederik, 2010). Cronbach's Alpha also allow researcher to measure the reliability and validity from different categories and the satisfaction level of Cronbach's Alpha must be equal or higher than 0.7 only will be accepted.

Table 4.7 : Cronbach's Alpha

Variables	Cronbach's Alpha
Investor Investment Decision Making	0.805
Herding	0.794
Loss Aversion	0.905
Malaysia's 14th Election	0.738

Overconfident	0.864
Price Anchoring	0.773
Self-Control	0.907

Source: Developed for the research

From the result of table 4.7, all variables are greater than 0.7 which mean that the value of internal consistency reliability was acceptable. Self-control has the highest value of 0.907 along with the value of 0.905 which belongs to loss aversion. Besides, overconfident generated the result of 0.864 while the investor investment decision making resulted 0.805. Herding, price anchoring and Malaysia's 14th Election was comprised into the value of 0.794, 0.773, and 0.738.

4.2.2 Composite Reliability (CR)

The function of "Composite Reliability" is similar as "Cronbach's Alpha", but the result of Composite Reliability is more reliable than the result of Cronbach's Alpha because it indicated the weight from different categories. Several studies have suggested that using Composite Reliability to replace the Cronbach's Alpha so as to enhance the reliability and validity (Wong, 2013). This statement also agreed by the researcher. (Hair et al, 2012).

Table 4.8 : Composite Reliability

Variables	Composite Reliability
Investor Investment Decision Making	0.870
Herding	0.862
Loss Aversion	0.920
Malaysia's 14th Election	0.838
Overconfident	0.908
Price Anchoring	0.852
Self-Control	0.935

Source: Developed for the research

From the result of table 4.8, all values of variables are greater than 0.7 which reached between 0.8 and 0.9. It means that the internal consistencies for all the variables are highly reliability and validity.

4.2.3 Average Variance Extracted (AVE)

The usage of Average Variance Extracted is to evaluate the convergent validity which also stated in chapter 3. The acceptable threshold of Average Variance Extracted should be greater than 0.5, means that the amount of variance capture from the latent variable is more than 50%. If the figure below than 0.5 means that a measurement error was occur in the variance.

Table 4.9 : Average Variance Extracted (AVE)

Variables	Average Variance Extracted
Investor Investment Decision Making	0.628
Herding	0.612
Loss Aversion	0.699
Malaysia's 14th Election	0.634
Overconfident	0.715
Price Anchoring	0.590
Self-Control	0.782

Source: Developed for the research

The table 4.9 presented all variables are qualified and fulfilled the condition of Average Variance Extracted. In order word, the convergent validity is confirmed.

4.2.4 Discriminant Validity

Discriminant Validity is the extend measurement that to assess those variables concept that supposed to be unrelated. Fornell-Lacker Criterion is the most well-known and effective method used to evaluate those variables in Discriminant Validity. In short, those figures of Discriminant Validity are established by the figures of Average Variance Extracted's square root in each latent variable. According to formula by Fornell and Larcker (1981), when the square root of Average Variance Extracted value is more than the

inter-construct correlation value, the Discriminant Validity is considered adequate. On the contrary, the Discriminant Validity is considered inadequate.

Table 4.10: Fornell-Larcker Criterion

	Herding	Investor Investment Decision Making	Loss Aversion	Malaysia's 14th Election	Overconfident	Price Anchoring	Self-Control
Herding	**0.782**						
Investor Investment Decision Making	0.661	**0.792**					
Loss Aversion	0.712	0.526	**0.836**				
Malaysia's 14th Election	0.694	0.551	0.797	**0.796**			
Overconfident	0.881	0.775	0.599	0.635	**0.845**		
Price Anchoring	0.791	0.585	0.858	0.729	0.681	**0.768**	
Self-Control	0.783	0.657	0.831	0.807	0.772	0.794	**0.884**

Source: Developed for the research

The table 4.9 presented the value of AVE for loss aversion is found to be 0.699. Hence, when applying the square root in Fornell-Larcker Criterion (table 4.10), it becomes 0.836. The value 0.836 is larger than others values within the same column of loss aversion. Similar calculation and observation are also made for others latent variables. Overall, the result as above proved that the discriminant validity is well established and this structure model can consider as valid and fit.

4.2.5 Path Coefficient

Once the reliability and the validity of the measurement are confirmed. Subsequent the PLS-SEM analysis was performed into the path coefficient. This is one of the important and special terms of PLS-SEM to assess or to evaluate the structural model. The result of path coefficient can generate the significance of parameter estimates and estimate the standard errors (Chin, 1998). This research used a special procedure of "bootstrapping" to obtain Standard Deviations, T-statistics and P-values of both inner and outer model. This research is used subsamples to replace the original sample in the calculation of bootstrapping in order to get the approximate T-values and P-values for the structural path. Table 4.11 represent the structural model that was analysed using subsamples of "bootstrapping".

Table 4.11: Structural Model
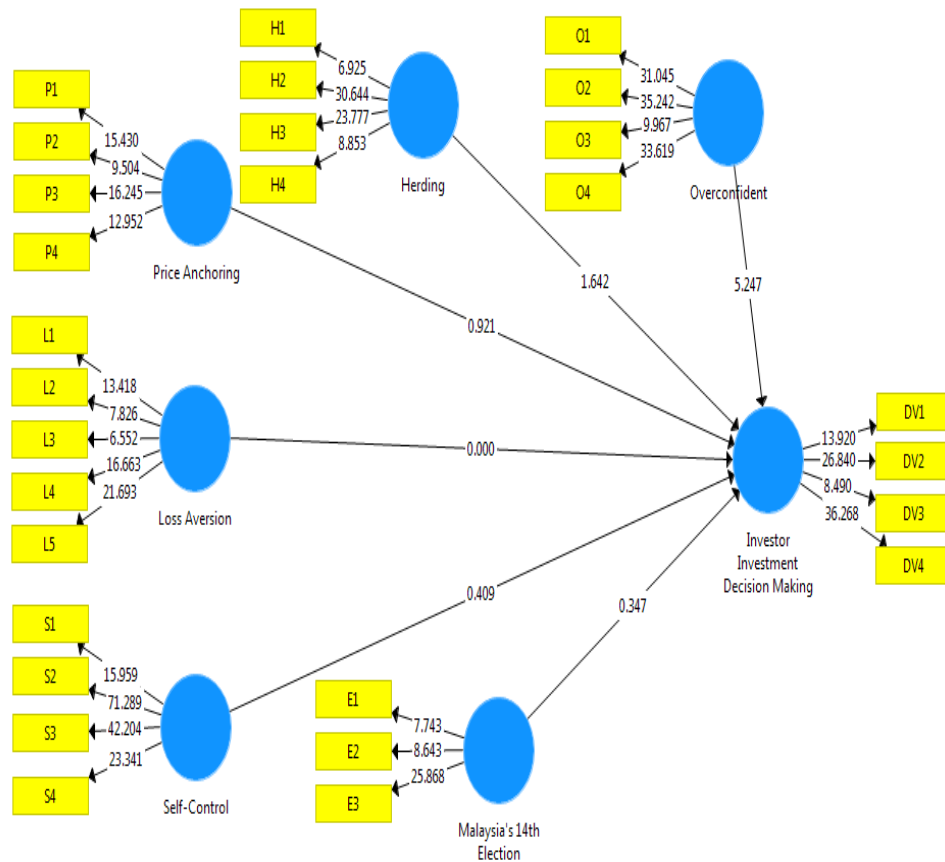
Table 4.12: Summary of Structural Model

	Hypothesis	STDEV	T-statistics	P-values	Result
Overconfident ->DV	H1	0.161	5.187	0.000	Supported
Herding ->DV	H2	0.171	1.655	0.098	Supported

Price Anchoring->DV	H3	0.148	0.920	0.358	Not Supported
Loss Aversion->DV	H4	0.275	0.000	1.000	Not Supported
Self-Control->DV	H5	0.218	0.405	0.686	Not Supported
Malaysia 14th Election->DV	H6	0.135	0.350	0.727	Not Supported

Source: Developed for the research

The summary of structural model presented by table 4.12.The significant level was set by 10% or 0.10 at previous chapter. Which means that when P-value is greater than the significant level, the result consider as unsupported. As concluded that, P-values of Herding and Overconfident are lower than the significant level. However, the P-values of Loss Aversion, Malaysia 14th Election, Price Anchoring and Self-Control are greater than the significant level.

4.3 Analysis of Outer Loading

4.3.1 Overconfidence

Table 4.1: Descriptive Statistics of Overconfidence

No	Statement	Original Sample	Sample Mean	Standard Deviation	T-statistic	P-Value
1.	I am confident with my trading skill and investment knowledge.	0.876	0.875	0.029	30.699	0.000*
2.	I am only trusted on my own investment decision.	0.896	0.896	0.025	35.260	0.000*
3.	I used my predictive skills to outperform the market.	0.690	0.684	0.069	9.924	0.000*
4.	I trade the stocks frequently.	0.902	0.903	0.027	32.852	0.000*

*When P-value less than 10% or 0.1 considered as significant

Source: Developed for the research

Table 4.1 demonstrated on the descriptive statistics of overconfidence. The highest recorded of original sample and sample mean were belonged to the statement of "I trade the stocks frequently" which were 0.902 and 0.903 respectively. While for the statement of "I used my predictive skills to outperform the market" has the lowest original sample (0.690), sample mean (0.684), as well as t-statistic (9.924). However it also obtained the highest standard deviation (0.069). Besides, the statement of "I am only trusted on my own investment decision" obtained the highest t-statistic with the value of 35.260.

4.3.2 Herding

Table 4.2 : Descriptive Statistics of Herding

No	Statement	Original Sample	Sample Mean	Standard Deviation	T-statistic	P-Value
1.	I follow those investors who with high education.	0.672	0.656	0.099	6.788	0.000*
2.	I follow decision of financial experts.	0.869	0.874	0.028	30.950	0.000*
3.	I believe on the stock that hold by investors in long period.	0.846	0.849	0.035	24.094	0.000*
4.	I choose the stock that been chosen by huge numbers of investors.	0.725	0.709	0.085	8.572	0.000*

*When P-value less than 10% or 0.1 considered as significant

Source: Developed for the research

The table 4.2 shows the highest recorded of original sample, sample mean and t-statistic were belonged to the statement of "I follow decision of financial experts" which were 0.869, 0.874 and 30.950. However, the lowest recorded of original sample, sample mean and t-statistic were belonged to the statement of "I follow those investors who with high education" which were 0.672, 0.656 and 6.788. Apart from that, the statement of "I follow

those investors who with high education" charted the highest standard deviation with a value of 0.099 and the statement of "I follow decision of financial experts" charted the least standard deviation with a value of 0.028.

4.3.3 Price Anchoring

Table 4.3 : Descriptive Statistics of Price Anchoring

No	Statement	Original Sample	Sample Mean	Standard Deviation	T-statistic	P-Value
1.	I sell stock when reach to the highest point.	0.763	0.768	0.049	15.695	0.000*
2.	I not to buy the stock if it was expensive than last year.	0.772	0.756	0.083	9.323	0.000*
3.	I rely on past stock price.	0.758	0.756	0.048	15.875	0.000*
4.	I rely on company historical financial performance.	0.781	0.771	0.062	12.636	0.000*

*When P-value less than 10% or 0.1 considered as significant

Source: Developed for the research

The table 4.3 demonstrated on the descriptive statistics of price anchoring. The statement of "I rely on company historical financial performance" carried out the highest value of original sample and sample mean which were 0.781 and 0.771 respectively. Moreover, the statement of "I not to buy the stock if it was expensive than last year" and "I rely on past stock price" achieved the same value of sample mean (0.756). However, in the same statement of "I not to buy the stock if it was expensive than last year" and "I rely on past stock price", both statement achieved the highest standard deviation and t-statistic which were 0.083 and 15.875 and lowest t-statistic and standard deviation which were 9.323 and 0.048.

4.3.4 Loss-Aversion

Table 4.4 : Descriptive Statistics of Loss-Aversion

No	Statement	Original Sample	Sample Mean	Standard Deviation	T-statistic	P-Value
1.	I choose the stock with fewer losses performance.	0.887	0.871	0.068	13.021	0.000*
2.	I sell the stock when the price dropped dramatically.	0.806	0.775	0.106	7.583	0.000*
3.	I become risk-adverse after suffer losses.	0.763	0.731	0.119	6.408	0.000*
4.	I do not buy the stock that keep	0.890	0.879	0.053	16.746	0.000*

No	Statement	Original Sample	Sample Mean	Standard Deviation	T-statistic	P-Value
	decreasing in value.					
5.	I sell the stock immediately once the price increased.	0.827	0.841	0.038	21.697	0.000*

*When P-value less than 10% or 0.1 considered as significant

Source: Developed for the research

The table 4.4 demonstrated on the descriptive statistics of loss-aversion. Based on the table 4.4, the statement of "I do not buy the stock that keep decreasing in value" achieved the highest original sample and sample mean which were 0.890 and 0.879 respectively. While for the statement of "I become risk-adverse after suffer losses" it achieved the lowest original sample and sample mean which were 0.763 and 0.731 respectively. Furthermore, the highest t-statistic (21.697) was belonged to the statement of "I sell the stock immediately once the price increased", but come to standard deviation, it achieved the lowest value which was 0.038 only.

4.3.5 Self-Control

Table 4.5 : Descriptive Statistics of Self-Control

No	Statement	Original Sample	Sample Mean	Standard Deviation	T-statistic	P-Value
1.	I would not overspend on investment.	0.814	0.810	0.051	15.956	0.000*

No	Statement	Original Sample	Sample Mean	Standard Deviation	T-statistic	P-Value
2.	I would not buy the stock that with higher risk.	0.911	0.912	0.013	71.262	0.000*
3.	I would invest the stock based on my economic capability.	0.926	0.927	0.022	41.806	0.000*
4.	I would not greedy on gaining profit.	0.882	0.880	0.038	22.995	0.000*

*When P-value less than 10% or 0.1 considered as significant

Source: Developed for the research

The result of table 4.5 shows that, the statement of "I would invest the stock based on my economic capability" marked as highest original sample (0.926) come with highest sample mean (0.927) as well. Apart from that, the lowest standard deviation (0.013) was belonged to the statement "I would not buy the stock that with higher risk" and also with the higher t-statistic value of 71.262.

4.3.6 Malaysia's 14th Election

Table 4.6 : Descriptive Statistics of Malaysia's 14th Election

No	Statement	Original Sample	Sample Mean	Standard Deviation	T-statistic	P-Value
1.	I sell stocks before	0.732	0.712	0.098	7.505	0.000*

	Malaysia's 14th general election.					
2.	I buy stocks before Malaysia's 14th general election.	0.784	0.762	0.093	8.391	0.000*
3.	I buy stocks after Malaysia's 14th general election.	0.866	0.875	0.034	25.416	0.000*

*When P-value less than 10% or 0.1 considered as significant

Source: Developed for the research

From the table 4.6, it shows that the statement of "I buy stocks after Malaysia's 14th general election" recorded the highest original sample (0.866), sample mean (0.875) as well as t-statistic (25.416). But at the same statement, the lowest value of standard deviation was recorded as 0.034. Moreover, the statement of "I sell stocks before Malaysia's 14th general election" recorded the lowest original sample (0.732), sample mean (0.712) as well as t-statistic (7.505) along with the topmost standard deviation of 0.098.

4.4 Conclusion

All in all, this chapter had discussed regarding the descriptive analysis that used to summarize the data of demographic information from the questionnaire such as gender, age, marital status, education level, income level as well as investing

experience of investors. All the data has been done by using frequency analysis. Apart from that, analysis of Outer Loading has been done by using the software application of Smart PLS for Partial Least Squares Structural Equation Modeling (PLS-SEM) for analysed and interpreted all the result of each independent variables. Furthermore, Cronbach's Alpha (CA), Composite Reliability (CR), Average Variance Extracted (AVE) and Discriminant Validity (Fornell-Larcker Criterion) has been conducted to test whether the variables were reliability and validity. Besides, Path Coefficient also has been conducted to evaluate whether the result supported or not supported between dependent variable and independent variable.

CHAPTER 5 : DISCUSSION AND CONCLUSION

5.0 Introduction

In this chapter was started with an introduction, follow by the summary of statistical analysis presented by using the result of boostrapping. Furthermore, the result of hypothesis for each independent variable considered as major finding in this research and discussed in this chapter. Besides that, the limitation of study will be outlined along with the recommendations for future researcher and end up with the conclusion.

5.1 Summary of Statistical Analysis

Table 5.1: Summary of Boostrapping Result

Test	Hypothesis	Hypothesis Decision	Result
Overconfidence and Investor Investment Decision Making	H_1: There is a significant relationship between overconfidence and investor investment decision making.	H_0 is not supported H_1 is supported	Significant **(p-value = 0.000)**
Herding and Investor	H_1: There is a significant	H_0 is not supported H_1 is supported	Significant **(p-value = 0.098)**

Investment Decision Making	relationship between herding and investor investment decision making.		
Price Anchoring and Investor Investment Decision Making	H_1: There is a significant relationship between price anchoring and investor investment decision making.	H_0 is supported H_1 is not supported	Insignificant (**p-value = 0.358**)
Loss Aversion and Investor Investment Decision Making	H_1: There is a significant relationship between loss aversion and investor investment decision making.	H_0 is supported H_1 is not supported	Insignificant (**p-value = 1.000**)
Self-Control and Investor Investment Decision Making	H_1: There is a significant relationship between self-control and investor investment	H_0 is supported H_1 is not supported	Insignificant (**p-value = 0.686**)

	decision making.		
Malaysia'14th Election and Investor Investment Decision Making	H_1: There is a significant relationship between Malaysia'14th election and investor investment decision making.	H_0 is supported H_1 is not supported	Insignificant **(p-value = 0.727)**

5.2 Discussion of Major Finding

5.2.1 Overconfidence

Investors who participate in the survey and having the feature of overconfidence might trade frequently in the stock market. Result shows that there is a significant relationship between overconfidence with investors' investment decision making in this research. It means that investors who are overconfidence on their personal skill, knowledge or experience in stock market will affect their investment decision making. This result also obtained from a previous study done by Babajide and Adetiloye (2012). The investor who has overconfidence bias will cause them trade frequently in stock market especially on high risk security (Barber & Odean, 2001). Due to the feature of overconfidence, it makes the investor feel that they are professional and expert on stock market, therefore they tend to trade frequently on high risk security in order to earn more profit from trading. As the research of Anderson (2005), stated that higher volume

of trading on stock market will generate higher return compare with fewer volume of trading. But overconfidence will cause investor make wrong decision and mistake on trading, therefore the investor trade frequently on stock market will not necessary get favorable return from stock market (Odean, 1998).

5.2.2 Herding

Investors who involved in the research stated that the information available in the market will affect their investment decision making. Thus, herding has significant relationship with investors' investment decision making. This research outcome is in parallel with the conclusion made by Ghalandari and Ghahremanpour (2013). It means that the investors who has the feature of herding will more rely on others or a group of investor suggestions to make their investment decision making; because they believe that a group of people was impossible to do a wrong decision. They will follow others suggestion to make their investment decision without their personal analysis, planning, thinking and investment technique (Alquraan, Alqisie & Shorafa, 2016). Investor with herding behavior may cause the stock market become inefficient such as speculative bubbles due to investor will change their investment decision making significantly by small information which lead investor make wrong decision (Kimue, 2016).

5.2.3 Price Anchoring

Price anchoring means that the investor will use historical information to predict and forecast the future stock price. In this research, price anchoring

has insignificant relationship with investors' investment decision making. It means that price anchoring will not affect the investor's investment decision making. This research result is in line with the conclusion of Babajide and Adetilove (2012). From this research show that, the investor who had price anchoring behavior still can perform rationally in investment decision making, because they will not use past and current information to predict future stock price and make investment decision. Therefore, performance of investors on stock market are not influence by the price anchoring behavior.

5.2.4 Loss Aversion

Loss aversion is the investors who are more concern on how to avoid losses instead of making profit on investment decision making. For the result of this research show that loss aversion has insignificant relationship with investors' decision making on stock market. This outcome also obtained from a previous study done by Bashir, Javed, Meer and Naseem (2013). It means that the investor will not avoid investing in the stock in order to minimizing the losses on stock market. Therefore, investor will not withdraw the money from the investment when the stock and investment making losses; and most of the investors who participate in this research not to sell the stock when the price drop dramatically.

5.2.5 Self-Control

Self-control is required for investor to prevent loss and protect their investment, and help investor to control them from over consume (Jahanzeb & Muneer, 2012). For the outcome of this research show that self-control

has insignificant relationship with investors' decision making on stock market. This outcome also obtained from a previous study done by Konstantin (2016). Most of the respondents agree with that they willing to use their saving fund and emergency fund to spent on investment if they are confident on the particular stock or investment which might provide higher profit to them.

5.2.6 Malaysia 14th Election

Election is a political uncertainty which may affect investors' investment decision making and stock market during pre-election and post-election (Balaji, Kusuma & Kumar, 2018). In this research, Malaysia 14th Election has insignificant relationship with investors' investment decision making. This research outcome is in line with the conclusion made by Evelita and Leow (2015). Investor will not affect their investment decision making during election period due to the assumption of incumbent party always win the election. But there is a different in Malaysia 14th Election due to incumbent party loses in the election; most of the respondents have confident with the new party therefore they will not trade post-election, because they believe that the prime minister of new government had experienced on managed the nation (Liew, 2018).

5.3 Limitations of Study

There are many reasons and limitations to constraint the process of research, and cause the research result become imperfect. The first limitation that had found in this research is the software that used to run the data – Smart PLS of Partial Least

Squares Structural Equation Modeling (PLS-SEM). Most of the finance student had learned E-View to run the data for research and least of them use PLS-SEM for research purpose. Therefore, this is a challenge for the student who first times to use this software for research purpose. Because there are many new things for student to learn in PLS-SEM such as construct reliability and validity, discriminant validity, collinearity statistics, path coefficient and so on which are totally new things for finance student. Therefore, this study had taken a big portion on time consuming for investigate on how to use PLS-SEM.

Besides that, the primary data might be not accurate in this research. Because the respondent who participate in this research may answer the questionnaire randomly and unable to ensure that the data had been collected are totally correct, and the actual result generated from this research was not same as the expected result that generated in Chapter 2. Because different people might have different behavior, therefore the target respondent in this research might not be affected by price anchoring bias, loss aversion bias, and self-control bias on their investment decision making. As this research was used primary data as collection, hence was difficult to make the result match with the expectation.

Furthermore, one of the independent variable in this research is about political issue which is Malaysia 14th Election. For the Malaysia 14th Election is a new event therefore it's hard to get more information or discussion on journal and website. Therefore, there is lack of information about Malaysia 14th Election to carry out this research and most of the information about the Malaysia 14th Election are get from news and refer to other country's election or general election discussion on journal.

Lastly, the target of investors in this research is unspecific. Because different groups of investors have different investment behavior in investment decision making such as gender, age or experience of investment. For example, male may show overconfidence than female in investment decision making, and younger investor

will follow others' opinion to make investment decision. Thus, it might lead this research become too general and no specific enough.

5.4 Recommendation for Future Researchers

For the solutions to improve this research by overcoming its limitations, there are several recommendations are given for the future studies. Investigator may learn more about Smart PLS software before start to do the research such as read more journals about how to apply Smart PLS software or watch Youtube about the use of Smart PLS software; so that investigator no need to waste time for running the test during the process of research.

Furthermore, the researchers may use investors' return as the measurement of dependent variable instead of using the factors to impact the investor's investment decision making as the measurement. Because return of investor generate from investment can make the researchers know whether the investor outperform or underperform in stock market, and how their behavior affects the return of investment and so on.

In addition, future studies are recommended to find out the relevant journal for the independent variable chosen before start to do the research otherwise researchers may suffer in the trouble such as fail to get the journal to support the result of research might cause the research inaccurate. In short, researcher should make well preparation before start to do the research.

For the future studies, researchers can target more specific on the group of investors. For example, the experiences of the investor on stock market affect the investment

decision making. It will be show that how is the different between young investor and experiences investor in stock market. Meanwhile, the younger investors have been affected by the financial behavior in investment decision making than experiences investors (Subash, 2012). Thus, the research specific on a demographic group of investors and use it to make the comparison will be more special and attractive.

5.5 Conclusion

For this research, the relationship between independent variables included overconfidence, herding, price-anchoring, loss-aversion, self-control, and Malaysia'14th election as well as the dependent variable of investor's investment decision making have been tested. The result of this research shows that overconfidence and herding have significant relationship with investor's investment decision making while the price-anchoring, loss aversion, self-control and Malaysia'14th election have insignificant relationship with investor's investment decision making.

End of the test, this research finds out that there are some limitations by using Partial Least Squares Structural Equation Modeling (PLS-SEM), it is the first time using Smart PLS software to run the data, therefore consume a lot of time to learn the function of this software. Besides that, the target of investors is unspecific due to different group of investors have their own perspective. Furthermore, there is lack of information about Malaysia's 14th Election, and the primary data may not be accurate for this research. For the recommendation to the future researcher to overcome the limitation of first time using Smart PLS software is to do the preparation early of learning on the use of Smart PLS. Besides, researcher can also target the survey's investors specific before doing the questionnaire as there could have the comparison between different groups of investor. Future studies should

also find the relevant information before start the process of research and try to use secondary data instead of primary data.

REFERENCES

Abdulaziz, M., A. (2013). It's All Overreaction: Earning Momentum to Value/Growth. *The Journal of Behavioral Finance and Economics- JBF&E* Vol. 3 Issue 2.

Aibinu, A. A., & Al-Lawati, A. M. (2010). Using PLS-SEM Technique to Model Construction Organizations' Willingness to Participate in E-bidding. *Automation in construction,   19*(6), 714-724.

Ajayi, V. O. (2017). Primary Sources of Data and Secondary Sources of Data.

Ajibade,A.A., and Ahmed, M.A.L. (2010). Using PLS-SEM Technique to Model Construction Organizations' Willingness to Participate in E-bidding. *Automation in Construction. 19*. 714–724.

Al-Horani A. and Haddad F., (2011), Exploring Investors' Behavior: Evidence from Amman Stock Exchange. *Jordan Journal of Business Administration, Volume 7*, No. 3, 481-493.

Ali, I., & Tariq, A. (2013). Factors Affecting Individual Equity Investor's Decision Making in Pakistan.

Allen, I. E., & Seaman, C. A. (2007). Likert Scales and Data Analyses. *Quality Progress, 40*(7), 64-65.

Alquraan, T., Alqisie, A., & Al Shorafa, A. (2016). Do Behavioral Finance Factors Influence Stock Investment Decisions of Individual Investors? (Evidences from Saudi Stock Market). *Journal of American Science, 12*(9).

Alvi, M.H. (2016). A Manual for Selecting Sampling Techniques in Research.

Ameriks, J. Measuring Self Control Problems John Ameriks, Andrew Caplin, John Leahy, and Tom Tyler.

Anderson, A, Henker, J, and Owen, S 2005, Limit Order Trading Behavior and Individual Investor Performance, *The Journal of Behavioral Finance, 6* (2), pp. 71–89.

Anum, B. A. (2017). Behavioral Factors and their Impact on Individual Investors Decision Making and Investment Performance: Empirical Investigation from Pakistani Stock Market. *Global Journal of Management and Business Research.*

Atif, K. (2014). Interrelationship of Biases: Effect Investment Decisions Ultimately. *Theoretical and Applied Economics XXI 6*(595), 85-110

Arshad, M. N. & Yahya, M. H. (2016). Relationship between Stock Market Returns and Exchange rates In Emerging Stock Markets. *Journal of Islamic Economics and Business, 1*(2), 131-143

Aysan, A.F., & Varoudakis, M.A.V. (2007). How Do Political and Governance Institutions Affect Private Investment Decisions? *An Application to the Middle East and North Africa.*

Babajide, A. A., & Adetiloye, K. A. (2012). Investors' Behavioural Biases and the Security Market: An Empirical Study of the Nigerian Security Market. *Accounting and Finance Research, 1*(1), 219-229.

Bakar, S., & Yi, A. N. C. (2016). The Impact of Psychological Factors on Investors' Decision   Making in Malaysian Stock Market: A Case of Klang Valley and Pahang. *Procedia Economics and Finance*, 35, 319-328.

Balaji, C., Kusuma, G.D.V, & Kumar, B.R. (2018). Impact of General Elections on Stock Markets in India. *Open Journal of Economics and Commerce, 1*(2). 1-7.

Barber, B. and Odean, T. (1999). The Courage of Misguided Convictions, Financial Analysts Journal, November/December 1999, 41-55

Barber, B. and Odean, T. (2001). "Boys will be Boys: Gender, Overconfidence, and Common Stock Investment". *Quarterly Journal of Economics, vol. 116*, pp. 261-292

Bashir, T., Javed, A., Ali, U., Meer, U. I., & Naseem, M. M. (2013). Empirical Testing of Heuristics Interrupting The Investor's Rational Decision Making. *European Scientific Journal, ESJ, 9*(28).

Bertaut, C. C., & Haliassos, M. (2001). Debt Revolvers for Self Control. *SSRN Electronic Journal*. doi:10.2139/ssrn.276052

Bird, D.K. (2009). The Use of Questionnaires for Acquiring Information on Public Perception of Natural Hazards and Risk Mitigation – A Review of Current Knowledge and Practice. *Natural Hazards and Earth System Sciences*. 9, 1307-1325.

Bit, K. Y., Chee, W. H., & Zainudin, A. (2010). Time-Varying World Integration of the Malaysia Stock: A Kalman Filter Approach. *Asian Academy of Management Journal of Accounting and Finance, 6*(2), 1-17.

BLOOMBERG. (2018, May 13). Mahathir's Return May Spur Moves in these Malaysia Stocks. *The Star Online*.

Boaduo, N. A. P. (2011). Systematic Analysis and Interpretation of Collected Data for a Research Study: A Practical Methodological Framework for Writing Research Report. *Educational Research and Reviews, 6*(2), 140-146.

Brown, J.R. (2010). Managing the Retail Format Portfolio: An Application of Modern Portfolio Theory. *Journal of Retailing and Consumer Services, 17*(2010), 19–28.

Byrne, A., & Utkus, W. S. P. (2013). Understanding How the Mind Can Help or Hinder Investment Success. VAM, 05-08.

Celis, E. E., & Shen, L. J. (2015). Political Cycle and Stock Market–The Case of Malaysia. In Proceedings of the Second Asia-Pacific Conference on Global Business, Economics, Finance and Social Sciences.

Charles, A., & Kasilinggam, R. (2016). Impact of Selected Behavioural Bias Factors on Investment Decisions of Equity Investors. *ICTACT Journal on Management Studies. 2*(2).

Chin, W. W. (1998). The Partial Least Squares Approach to Structural Equation Modeling. *Modern methods for business research, 295*(2), 295-336.

Clarke, J., Jandik, T. and Mandelker, G. The Efficient Markets Hypothesis.

Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences. 2nd.

Crossman, A. (n.d.). What Level and Scale of Measurement Should You Use in Research? Retrieved from https://www.thoughtco.com/levels-of-measurement-3026703

Daniel, K. D., Hirshleifer, D., & Subrahmanyam, A. (2001). Overconfidence, Arbitrage, and Equilibrium Asset Pricing. *The Journal of Finance, 56*(3), 921-965. doi:10.1111/0022-1082.00350

Docherty, P., & Hurst, G. (2016). Myopic Loss Aversion and The Momentum Premium.

Duarte, P. A. O., & Raposo, M. L. B. (2010). A PLS Model to Study Brand Preference: An Application to the Mobile Phone Market. In Handbook of Partial Least Squares (pp.449-485). Springer, Berlin, Heidelberg.

Durdyev, S., Ihtiyar, A., Banaitis, A., and Thurnell, D. (2018). The Construction Client Satisfaction Model: A PLS-SEM Approach. *Journal of Civil Engineering and Management. 24*(1). 31-42.

Economicshelp.org. (2018). [online] Available at: https://www.economicshelp.org/blog/15736/economics/factors-that-affect-foreign-direct- investment-fdi/ [Accessed 1 Jul. 2018].

Economicshelp.org. (2018). [online] Available at: https://www.economicshelp.org/blog/15736/economics/factors-that-affect-foreign-direct-investment-fdi/ [Accessed 1 Jul. 2018].

Elbannan, M. A. (2014). The Capital Asset Pricing Model: An Overview of the Theory. *International Journal of Economics and Finance, 7*(1), 216.

Elton, E. J., & Gruber, M. J. (1743). Modern Portfolio Theory, 1950 to date. *Journal of Banking & Finance, 21*(1997), 1759.

Evans, A. M., Dillon, K. D., Goldin, G., & Krueger, J. I. (2011). Trust and Self-Control: The Moderating Role of the Default. Judgment and Decision Making, *6*(7), 697.

Evelita, E.C., & Leow, J.S. (2015). Political Cycle and Stock Market. *Journal of Emerging Issue in Economics, Finance and Banking (JEIEFB). 4*(1).

Fontanills, G. A., & Gentile, T. (2001). The Stock Market Course (1sted.). New York: John Wiley & Sons, Inc

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research, 18*(1), 39–50.

Fornell, C., & Larcker, D. F. (1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research, 382-388.*

García-Machado, J. (2017). Assessing a moderating effect and the global fit of a PLS model on online trading. Marketing of Scientific and Research Organizations, *26*(4), 1-34.

Ghalandari, K., & Ghahremanpour, J. (2013). The Effect of Market Variables and Herding Effect on Investment Decision as Factor Influencing Investment Performance in Iran. *Journal of Basic and Applied Scientific Research, 3*(3), 313-318.

Grover, P. (2015). Study on Behavioural Factors Influencing Investment Decision in Real State: A Case Study of Udham Singh Nagar (Uttarkhand). *International Journal of Engineering Technology, Management and Applied Sciences, 3*(7), 150-158.

Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). Sage Publications.

Hanif, A., & Jalaluddin, S. (2013). FDI and Domestic Investment in Malaysia. *International Proceedings of Economics Development & Research*, (76), 15-20.

Hassan, A.Z., Schattner, P., and Mazza, D. (2006). Doing a Pilot Study: Why is it Essential? *Malaysian Family Physician. 1*(2&3). 70-73.

Hazen, B. T., Boone, C. A., Ezell, J. D., & Jones-Farmer, L. A. (2014). Data Quality for Data Science, Predictive Analytics, and Big Data in Supply Chain Management: An Introduction to the Problem and Suggestions for Research and Applications. *International Journal of Production Economics, 154*, 72-80.

Hooi. L. H. Polical General Election and Stock Performance: The Malaysia Evidence.

Huberman, G. (n.d.). Arbitrage Pricing Theory. The New Palgrave Dictionary of Economics, 1.

Huckle, P. (2004). The Investor is the Risk: The Risk is not in the Market but in the Investors. Highbeam Business, [Online] Available: http://highbeam.com/435599/article

Ibrahim, M. H. (2006). Integration or Segmentation of the Malaysian Equity Market: An Analysis of Pre- and Post-Capital Controls. *Journal of the Asia Pacific Economy, 11*(4), 424-443.

Interval Scale & Interval Variable: Simple Definition & Examples. (n.d.). Retrieved from http://www.statisticshowto.com/interval-scale/

Jahanzeb, A., & Muneer, S. (2012). Implication of Behavioral Finance in Investment Decision-Making Process. *Information Management and Business Review. 4*(10), 532-536.

Juliet, A.L. (2017). Behavioural Factors that Influence Individual Investment Decisions at the Naibori Securities Exchange.

Kafayat, A. (2014). Interrelationship of Biases: Effect Investment Decisions Ultimately. *Theoretical & Applied Economics, 21*(6).

Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision Under Risk. *Econometrica, 47*(2), 263–292.

Kengatharan, L., & Kengatharan, N., 2014. The Influence of Behavioral Factors in Making Investment Decisions and Performance: Study on Investors of Colombo Stock Exchange, Sri Lanka. *Asian Journal of Finance & Accounting 6*(1), 1-23.

Kimue, C. N. (2016). Behavioural Factors Influencing Investment Decisions among Individual Investors in Nairobi Securities Exchange. *Strategic Journal of Business & Change Management, 3*(4).

Kisaka, E. K. (2015). The Effect of Behavioral Finance Factors on Stock Investment Decisions in Kenya (Doctoral dissertation).

KLSE Interactive Stock Chart | FTSE Bursa Malaysia KLCI Stock. (n.d.). Retrieved from https://finance.yahoo.com/chart/^KLSE/#eyJTWSI6W1siXktMU0UiLG51bGwsMCwwXV0sIlRTIjpbMSwid2VlayIsbnVsbCxbInllYXIiLDUsbnVsbF1dLCJVUyI6WzAsMSwxXSwiQ1MiOlsibGluZSIsImxpbmVhciIsMy4wNzUyNjgxNjA5MTIyOTg1LG51bGwsbnVsbCwiIzAwODFmMiJdLCJ2IjoiMC4xLjAiLCJtaW4iOjF9

Konstantin, L. (2016). The Impact of Self-Control on Investment Decisions. University of Munich.

Kyle, A. S., & Wang, F. A. (1997). Speculation Duopoly with Agreement to Disagree: Can Overconfidence Survive the Market Test. *The Journal of Finance, 52*, 2073–2090.

Lancaster, G.A., Dodd, S., and Williamsoon, P.R. (2002). Design and Analysis of Pilot Studies: Recommendations for Good Practice. *Journal of Evaluation in Clinical Practice, 10*(2), 307-312.

Likert, R. (1932). A Technique for the Measurement of Attitudes. *Archives of Psychology, 22*(140), 1–55.

Lim,J.T.,2018. Lead Story: A Post-Election Rally on the cards? Retrieved from https://www.theedgemarkets.com/article/lead-story-postelection-rally-cards

Lim, L.C., 2012. The Relationship between Psychological Biases and the Decision Making of Investor in Malaysian Share Market. Unpublished Paper International Conference on Management, Economics & Finance (ICMEF 2012) Proceeding.

Liu, F. (2014). Professional Financial Advice, Self-Control and Saving Behavior. The Ohio State University.

Leppinen, E. (2013). Behavioural Finance Theories Effecting on Individual Investor's Decision-Making.

Loh, W. S. H., Chow, S. W., Kwan, W. S., Ng, S. J., & Ng, Z. Y. (2017). Malaysian Youth's Perspectives on Investing in Stock Market (Doctoral dissertation, UTAR).

Malaysia Foreign Direct Investment | 2008-2018 | Data | Chart | Calendar. (n.d.). Retrieved from https://tradingeconomics.com/malaysia/foreign-direct-investment

Marinoni, O., Adkins, P., and Hajkowicz, S. (2011). Water Planning in a Changing Climate: Joint Application of Cost Utility Analysis and Modern Portfolio Theory. *Environmental Modelling & Software, 26*(2011),18-29.

Masomi, S. R., & Ghayekhloo, S. (2011). Consequences of Human Behaviors' in Economic: The Effects of Behavioral Factors in Investment Decision Making at Tehran Stock Exchange. In 2010 International Conference on Business and Economics Research, Malaysia (Vol. 1).

Mason, J. (2017). Qualitative researching. Sage.

Masoud, N. M. (2013). The Impact of Stock Market Performance Upon Economic Growth. *International Journal of Economics and Financial Issues, 3*(4), 788-798.

Mathers, N., Fox, N., and Hunn, A. (2009). Surveys and Questionnaires. National Institute for Health Research.

Menike, L. M. C. S., Dunusinghe, P., & Ranasinghe, A. (2015). Behavioural Factors Influence on Investment Performance: A Survey of Individual Investors at Colombo Stock Exchange. In Proceedings of 10th Annual London Business Research Conference.

Muijs, D. (2010). Doing Quantitative Research in Education with SPSS. Sage.

Murthy, U., Anthony, P., & Vighnesvaran, R. (2016). Factors Affecting Kuala Lumpur Composite Index (KLCI) Stock Market Return in Malaysia. *International Journal of Business and Management, 12*(1), 122.

Nada, S.M.A. (2013). Behavioural Factors Influencing Investment Decision Making: An Empirical Study of Palestine Stock Exchange. The Islamic University-Gaza.

Nada, S. M. A., & Moa'mer, F. A. (2013). Deanery of Higher Studies Faculty of Commerce Dep. Of Business Administration.

Ngoc, L. T. B. (2013). Behaviour Pattern of Individual Investors in Stock Market. *International Journal of Business and Management, 9*(1), 1.

Nils, U., and Frederik, A. (2010). Structural Equation Modeling in Information Systems.

Nofsinger, J. R. (2001). Investment Madness: How Psychology Affects Your Investing—and What to Do About it (pp. 107-108). Financial Times Prentice Hall.

Noraini, A., and Nurul, F.R. (2014). How well do Partial Least Squares and Financial Ratio Analysis Predict Corporate Failure in Malaysia. *International Journal of Economics, Finance and Management. 3*(7).

Nouri, B. A., Motamedi, S., & Soltani, M. (2017). Empirical Analysis of the Financial Behavior of Investors with Brand Approach (Case Study: Tehran Stock Exchange). *Annals of the Alexandru Ioan Cuza University-Economics, 64*(1), 97-121.

NST. Business. (2018, May 21). Heaviest Foreign Sell Down since August 2013 bt MIDF Research believes funds inflow will pick up. *The Star Online*.

Odean, T. (1998). Volume, Volatility, Price and Profit When All Traders are Above Average. *The Journal of Finance, 53*, 1887–1934.

Omisore, L., Yusuf, M., and Christopher, N. (2012). The Modern Portfolio Theory as an Investment Decision Tool. *Journal of Accounting and Taxation. 4*(2), 19-28.

Peng, D. X., & Lai, F. (2012). Using Partial Least Squares in Operations Management Research: A Practical Guideline and Summary of Past Research. *Journal of Operations Management, 30*(6), 467-480.

Petersen, G.A., Singh, A., (2003). Performance of Hotel Investment in a Multi-Property Commercial Real Estate Portfolio: Analysis of Results from 1982 to 2001. *Journal of Retail & Leisure Property, 3*(2), 158–175.

Pettengill, G. N., S. Sundaram and I. Mathur (1995), "The Conditional Relation between Beta and Returns", *Journal of Financial and Quantitative Analysis, 30*(1), pp. 101-116.

Pompian, M. M. (2006). Behavioral Finance and Wealth Management. How to Build Optimal Portfolios for Private Clients, 28.

Qadri, S. U., Shabbir, M., 2014. An Empirical Study of Overconfidence and Illusion of Control Biases, Impact on Investor's Decision Making: An Evidence from ISE. *European Journal of Business and Management 6*(14), 38-44.

Qureshi, S. A., Rehman, K., Hunjra, A. I., (2012). Factors Affecting Investment Decision Making of Equity Fund Managers. *Wulfenia Journal, Vol.19*, No. 10, 280-291

Powell, R. (2017, April 13). What Investors Need to Understand About 'Investment Return'. Retrieved from https://www.wsj.com/articles/what-investors-need-to-understand-about-investment-return-1491790501.

Ranjbar, M. H., Abedini, B., & Jamali, M. Analysing the Effective Behavioural Factors on the Investors' Performance in TEHRAN Stock Exchange(TSE). Research Using Partial Least Squares. *Journal of Information Technology Theory and Application. 11*(2). 5-40

Roberts, B. W., Lejuez, C., Krueger, R. F., Richards, J. M., & Hill, P. L. (2014). What is Conscientiousness and How Can It Be Assessed? *Developmental psychology, 50*(5), 1315.

Roth, B. (2017). Behavioral Biases Series: Self-Control Bias - Kattan Ferretti Financial L.P. Retrieved from http://kattanferrettifinancial.com/self-control-bias/

Sadi, R., Asl, H. B., Rostami, M. R., Gholipour, A., & Gholipour, F. (2011). Behavioral Finance: The Explanation of Investors' Personality and Perceptual Biases Effects on Financial Decisions. *International Journal of Economics and Finance, 3*(5), 234-241.

Say, L. S., & Zainul, I, F. (2018, March 15). Market Down on Elections? *The Star Online.*

Schenk, C. R. (2013). The Dissolution of a Monetary Union: The Case of Malaysia and Singapore 1963-1974. *Journal of Imperial and Commonwealth History, 41*(3), 496-522.

Sekaran, U. (2006). Research Methods for Business: A Skill Building Approach, 4Th Ed: Wiley India Pvt. Limited.

Sewell, M. (2007). Behavioural finance. University of Cambridge.

Shleifer, A., & Vishny, R. (1995). The Limits of Arbitrage. doi:10.3386/w5167

Shikuku, R. M. (2012). The effects of behavioural factors on investment decision making by unit trust companies in Kenya. MBA University of Nairobi.

Sharpe, & William F. (1985). Investments, Prentice-Hall, Inc., Englewood Cliffs, New Jersey

Sih, F. C. (2012). Portfolio Selection Strategies in Malaysia Stock Market (Bachelor's thesis). University Malaysia Sarawak, Sarawak, Malaysia.

Staff, I. (2011, August 28). Investor. Retrieved from https://www.investopedia.com/terms/i/investor.asp

Stevens, S. S. (1946). On the theory of scales of measurement.

Stout, L. A. (2003). The Mechanisms of Market Inefficiency: An Introduction to the New Finance. *SSRN Electronic Journal*. doi:10.2139/ssrn.470161

Strong, R. A. (2006). Practical Investment Management, 4th edition. Mason, OH: Thomson Higher Education, Thomson: South-Western.

Subash, R. (2012). Role of behavioral finance in portfolio investment decisions: Evidence from India.

Sukamolson, S. (2007). Fundamentals of quantitative research Suphat Sukamolson (Doctoral dissertation, Ph. D. Language Institute Chulalongkorn University. Lang Inst. p: 20).

Suryawanshi, P. B., & Jumle, A. G. Comparison of Behavioral Finance and Traditional Finance: For Investment Decisions.

Taherdoost, H., (2016). Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research. *International Journal of Academic Research inManagement (IJARM).5*(2), 18-27.

Talha, M., Ramanakumar, K. P. V., & Neelakantan, P. R. (2015). Investor Psychology and its influence on Investment decision (Vol. 292). *MAGNT Research Report, 3* (9), 281.

Tan, A. M. K., Chong, E. T. Y., Lee, P. T., Lee, W. Y., & Yeoh, W. M. (2014). Empirical investigation of general election on stock market: A Malaysian case (Doctoral dissertation, UTAR).

Tapia, W., & Yermo, J. (2007). Implications of behavioral economics for Mandatory individual account pension systems. (OECD working papers on Insurance and Private Pensions No. 11). OECD Publishing.

Taylor, S. E., & Brown, J. D. (1988). Illusion and wellbeing: A social psychological perspective on mental health. *Psychological Bulletin, 103*, 193–210.

The Likert Scale: Advantages and Disadvantages. (2011, December 05). Retrieved from https://psyc450.wordpress.com/2011/12/05/the-likert-scale-advantages-and-disadvantages/

Theriou, N., Maditinos, D., Aggelidis, V., & Theriou, G. (2007). Testing the relation between beta and returns in the Athens stock exchange: A second attempt. *Journal of Economy and Business–International Scientific Publications, 1.*

Ton.T. (2011). Reverse disposition effect of foreign investors. *Journal of behavioral finance,* 2011.

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.

Traditional Finance vs. Behavioral Finance?. Retrieved from
https://www.financialanalystwarrior.com/difference-traditional-finance-
behavioral-finance/

Tripathy, C. K. (2014). Role of Psychological Biases in the Cognitive Decision
Making Process of Individual Investors. *Orissa Journal of Commerce, 34*(1),
69-80.

ul Abdin, S. Z., Farooq, O., Sultana, N., & Farooq, M. (2017). The impact of
heuristics on investment decision and performance: Exploring multiple
mediation mechanisms. *Research in International Business and Finance, 42*,
674-688.

W. (n.d.). Research. Retrieved from
https://www.worldexchanges.org/home/index.php/research/wfe-research

Wang, X., Wallace, M. P., & Wang, Q. (2017). Rewarded and unrewarded
competition in CSCL environment: A coopetition design with a social
cognitive perspective using PLS-SEM analyses. *Computers in Human
Behavior, 72*, 140-151.

What You Need to Know about Willpower: The Psychological Science of Self-
Control. Retrieved from http://www.apa.org/helpcenter/willpower.aspx

Wong, K. K. K. (2013). Partial least squares structural equation modeling (PLS-
SEM) techniques using SmartPLS. *Marketing Bulletin, 24*(1), 1-32.

Yee, L. H. (2018, May 7). Foreign funds sell RM438.4mil of Malaysian shares
ahead of GE14. *The Star Online*.

Yeoh, B. K., Hooy, C. W. & Arsad, Z. (2010). Time- Varying World Integration
of the Malaysian Stock Market: A Kalman Filter Approach. *Asian Academy
of Management Journal of Accounting and Finance, 6*(2), 1-17

Zoghlami, F., and Matoussi H., (2009), A Survey of the Tunisian Investors'
Behaviour. *International Research Journal of Finance and Economics*,
Issue 31, 66-81.

Appendix A: Permission Letter for Questionnaire Survey

UNIVERSITI TUNKU ABDUL RAHMAN
Wholly Owned by UTAR Education Foundation (Company No. 578227-M)

8th August 2018

To Whom It May Concern

Dear Sir/Madam,

Permission to Conduct Survey

This is to confirm that the following students are currently pursuing their *Bachelor Of Finance (Hons)* program at the Faculty of Business and Finance, Universiti Tunku Abdul Rahman (UTAR) Perak Campus.

I would be most grateful if you could assist them by allowing them to conduct their research at your institution. All information collected will be kept confidential and used only for academic purposes.

The students are as follows:

Name of Student	Student ID
Ang Hui Theng	15ABB03217
Kong Kah Weng	16ABB04476
Ong Vnn Nee	15ABB02707
Poo Ling Feng	15ABB01998
Tan Khai Shen	15ABB05978

If you need further verification, please do not hesitate to contact me.

Thank you.

Yours sincerely,

....

Ms Kuah Yoke Chin
Supervisor and Head of Department
Faculty of Business and Finance
Email: kuahyc@utar.edu.my

Kampar Campus : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia
Tel: (605) 468 8888   Fax: (605) 466 1313
Sungai Long Campus : Jalan Sungai Long, Bandar Sungai Long, Cheras, 43000 Kajang, Selangor Darul Ehsan, Malaysia
Tel: (603) 9086 0288   Fax: (603) 9019 8868
Postal Address: PO Box 11348, 50744 Kuala Lumpur, Malaysia
Website: www.utar.edu.my

Appendix B: Questionnaire

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE

ACADEMIC YEAR 2017/2018

Title: How Investor's Behaviour towards Investment Decision? PLSSEM Approach

Dear respondents,

We are final year undergraduate students of Bachelor of Finance (Hons) from University Tunku Abdul Rahman (UTAR). The purpose of this research is to examine the significance of investor's behavior on finance (Overconfidence, Herding, Price anchoring, Loss aversion, Self-control and Malaysia's election) toward Malaysia's stock market. Your honest feedback is the highest importance in the course of our academic research.

This questionnaire included of three parts, Section A, B, and C. Section A is the demographic information of respondents, Section B is the financial behavioral of respondents, and Section C is the performance of Malaysia stock market. This research may take about 15 minutes to complete. All the information provided in this research is assured to be kept strictly confidential and used solely for academic purpose.

We truly appreciate for your cooperation and willingness to take part in our survey. If you have any problems, please feel free to contact us:

	Student ID	Name	Contact No.	Email
1.	1503217	ANG HUI THENG	014-6019706	theng75309@gmail.com
2.	1604476	KONG KAH WENG	016-5421557	kahweng97@live.com.my
3.	1502707	ONG VNN NEE	010-3924392	ongvnnnee96@hotmail.com
4.	1501998	POO LING FENG	016-4458731	ericpoolingfeng97@hotmail.com
5.	1505978	TAN KHAI SHEN	018-2777925	khai0504@hotmail.com

Section A: Demographic Information

1. Gender

    ☐ Male   ☐ Female

2. Age

    ☐ Below 21   ☐ 21-30   ☐ 31-40   ☐ Above 40

3. Marital Status

    ☐ Single   ☐ Married

4. Education Level

    ☐ High school and lower ☐ Diploma Level ☐ Bachelor of Degree

    ☐ Others

5. Income Level (RM)

    ☐ Below 1,000   ☐ 1,000 – 3,000   ☐ 3,001 – 5,000

    ☐ Above 5,001

6. Investing Experience (Year)

    ☐ Below 1   ☐ 1-5   ☐ 6-10   ☐ Above 10

Section B : Dependent Variable

Investor's Investment Decision Making

No	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	My investment decision influence by own behaviour.	1	2	3	4	5
2.	The amounts I invest depend on stock performance.	1	2	3	4	5
3.	I believe that high risk high return.	1	2	3	4	5
4.	I satisfied with my current investment performance.	1	2	3	4	5

Section C : Independent Variables

Overconfident

No	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I am confident with my trading skill and investment knowledge.	1	2	3	4	5
2.	I am only trusted on my own investment decision.	1	2	3	4	5
3.	I used my predictive skills to outperform the market.	1	2	3	4	5
4.	I trade the stocks frequently.	1	2	3	4	5

Herding

No	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I follow those investors who with high education.	1	2	3	4	5
2.	I follow decision of financial experts.	1	2	3	4	5
3.	I believe on the stock that hold by investors in long period.	1	2	3	4	5
4.	I choose the stock that been chosen by huge numbers of investors.	1	2	3	4	5

Price Anchoring

No	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I sell stock when reach to the highest point.	1	2	3	4	5
2.	I not to buy the stock if it was expensive than last year.	1	2	3	4	5
3.	I rely on past stock price.	1	2	3	4	5
4.	I rely on company historical financial performance.	1	2	3	4	5

Price Anchoring

Loss-Aversion

No	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I choose the stock with fewer losses performance.	1	2	3	4	5
2.	I sell the stock when the price dropped dramatically.	1	2	3	4	5
3.	I become risk-adverse after suffer losses.	1	2	3	4	5
4.	I do not buy the stock that keep decreasing in value.	1	2	3	4	5
5.	I sell the stock immediately once the price increased.	1	2	3	4	5

Self-control

No	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I would not overspend on investment.	1	2	3	4	5
2.	I would not buy the stock that with higher risk.	1	2	3	4	5
3.	I would invest the stock based on my economic capability.	1	2	3	4	5
4.	I would not greedy on gaining profit.	1	2	3	4	5

Malaysia's 14th Election

No	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I sell stocks before Malaysia's 14th general election.	1	2	3	4	5
2.	I buy stocks before Malaysia's 14th general election.	1	2	3	4	5
3.	I buy stocks after Malaysia's 14th general election.	1	2	3	4	5

Signature :

Thank you for your participation

Appendix C: Changes of stock market performance during election

Date	Price	Open	High	Low	Vol.	Change %
Jun 01, 2018	1,756.38	1,739.93	1,760.46	1,737.72	197.07M	0.91%
May 31, 2018	1,740.62	1,731.65	1,754.44	1,725.16	757.57M	1.24%
May 30, 2018	1,719.28	1,759.56	1,759.56	1,709.51	368.57M	-3.18%
May 28, 2018	1,775.84	1,793.45	1,793.54	1,774.40	163.54M	-1.20%
May 25, 2018	1,797.40	1,792.80	1,797.81	1,785.12	222.82M	1.22%
May 24, 2018	1,775.66	1,808.32	1,809.90	1,768.18	278.79M	-1.58%
May 23, 2018	1,804.25	1,843.40	1,843.40	1,804.25	232.73M	-2.21%
May 22, 2018	1,845.03	1,854.61	1,854.61	1,844.07	159.51M	-0.46%
May 21, 2018	1,853.58	1,858.31	1,864.94	1,851.68	200.00M	-0.05%
May 18, 2018	1,854.50	1,858.62	1,862.19	1,853.57	191.42M	0.00%
May 17, 2018	1,854.44	1,864.78	1,867.09	1,854.44	201.65M	-0.21%
May 16, 2018	1,858.26	1,851.83	1,862.35	1,841.83	174.58M	0.54%
May 15, 2018	1,848.20	1,857.22	1,860.59	1,848.20	250.87M	-0.12%
May 14, 2018	1,850.42	1,814.45	1,876.62	1,797.14	414.93M	0.21%

(Sources from investing.com)

(0.21% - 0.12% + 0.54% - 0.21% + 0.00%) /4 = 0.42

Appendix D: Construct Reliability and Validity

Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Herding	0.794	0.836	0.862	0.612
Investor Investment Decision Making	0.805	0.843	0.870	0.628
Loss Aversion	0.905	1.007	0.920	0.699
Malaysia's 14th Election	0.738	0.854	0.838	0.634
Overconfident	0.864	0.892	0.908	0.715
Price Anchoring	0.773	0.781	0.852	0.590
Self-Control	0.907	0.933	0.935	0.782

Appendix E: Discriminant Validity

Discriminant Validity

Fornell-Larcker Criterion

	Herding	Investor Investment Decision Making	Loss Aversion	Malaysia's 14th Election	Overconfident	Price Anchoring	Self-Control
Herding	0.782						
Investor Investment Decision Making	0.661	0.792					
Loss Aversion	0.712	0.526	0.836				
Malaysia's 14th Election	0.694	0.551	0.797	0.796			
Overconfident	0.881	0.775	0.599	0.635	0.845		
Price Anchoring	0.791	0.585	0.858	0.729	0.681	0.768	
Self-Control	0.783	0.657	0.831	0.807	0.772	0.794	0.884

Appendix F: Collinearity Statistics (VIF)

Collinearity Statistics (VIF)

Outer VIF Values

	VIF
DV1	1.725
DV2	1.747
DV3	1.435
DV4	2.045
E1	1.675
E2	1.866
E3	1.289
H1	1.650
H2	2.296
H3	2.054
H4	1.902
L1	3.851
L2	4.911
L3	4.438
L4	3.122
L5	1.991
O1	2.562

O2	2.614
O3	1.437
O4	2.980
P1	1.309
P2	1.935
P3	1.440
P4	1.908
S1	2.098
S2	3.108
S3	3.697
S4	2.792

Appendix G: Path Coefficients

Path Coefficients

Mean, STDEV, T-Values, P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Herding -> Investor Investment Decision Making	-0.282	-0.246	0.173	1.635	0.102
Loss Aversion -> Investor Investment Decision Making	0.000	-0.059	0.279	0.000	1.000
Malaysia's 14th Election -> Investor Investment Decision Making	0.047	0.063	0.137	0.346	0.729
Overconfident -> Investor Investment Decision Making	0.833	0.805	0.164	5.088	0.000

Price Anchoring -> Investor Investment Decision Making	0.136	0.148	0.147	0.920	0.358
Self-Control -> Investor Investment Decision Making	0.088	0.119	0.220	0.401	0.689

Appendix H: Outer Loadings

Outer Loadings

	Herding	Investor Investment Decision Making	Loss Aversion	Malaysia's 14th Election	Overconfident	Price Anchoring	Self-Control
DV1		0.772					
DV2		0.842					
DV3		0.683					
DV4		0.859					
E1				0.732			
E2				0.784			
E3				0.866			
H1	0.672						
H2	0.869						
H3	0.846						
H4	0.725						
L1			0.887				
L2			0.806				
L3			0.763				
L4			0.890				
L5			0.827				
O1					0.876		
O2					0.896		
O3					0.690		

O4	0.902				
P1		0.763			
P2		0.772			
P3		0.758			
P4			0.781		
S1				0.814	
S2				0.911	
S3				0.926	
S4					0.882