THE INFLUENCE OF BEHAVIORAL FACTORS IN INVESTMENT DECISIONS: STUDY OF MILLENNIAL INVESTORS IN KUALA LUMPUR

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ABSTRAK

Secara tradisinya, pelaburan dilihat sebagai satu aktiviti yang rasional yang dijalankan berdasarkan objektif kewangan seseorang. Walau bagaimanapun, teori-teori baru dalam tingkah laku pelaburan melihat pelaburan sebagai sains tingkah laku di mana para pelabur dipengaruhi oleh faktor-faktor pelaburan tingkah laku. Kajian ini meninjau 200 pelabur milenium dari Kuala Lumpur, Malaysia, untuk menyiasat faktor tingkah laku yang mempengaruhi keputusan pelaburan mereka. Pelabur millennial merujuk kepada para pelabur yang berumur di antara 21 hingga 36 tahun. Secara khusus, kajian ini mengkaji faktor-faktor yang mempengaruhi keputusan pelaburan para pelabur milenium berdasarkan teori heuristik, teori prospek, faktor-faktor pasaran, dan kesan penggembala. Pengumpulan data dilakukan menerusi pengedaran borang soal selidik malalui dalam talian. Hasil kajian menunjukkan bahawa kedua-dua teori kewangan tradisional dan faktor-faktor teori tingkah laku kewangan mempengaruhi keputusan pelaburan responden. Walau bagaimanapun, faktor-faktor teori kewangan tingkah laku berkaitan teori heuristik dan kesan penggembala mempunyai impak yang lebih besar berbanding dengan faktor teori kewangan tradisional. Di samping itu, kajian juga mendapat bahawa pelabur Malaysia di Kuala Lumpur merasakan diri mereka lebih rasional daripada mereka sebenarnya.

Kata Kunci: milenium, teori kewangan tradisional, teori tingkah laku kewangan, heuristik, teori prospek, faktor-faktor pemasaran, teori penggembala, teori jangkaan utiliti, gelagat pelaburan individu dan keputusan pelaburan

ABSTRACT

Traditionally, investing is viewed as a rational activity which is carried out based on one's financial objectives. However, newer theories in investment behaviour view investing as a behavioural science, acknowledging that investors are human beings influenced by behavioural investment factors. This study surveyed 200 millennial investors from Kuala Lumpur, Malaysia, in order to investigate the behavioural factors that affect their investment decision. Millennial investors refer to investors between the ages of 21 to 36 years old. Specifically, this study examines the factors which influence millennial investors' investment decision based on heuristic theory, prospect theory, market factors, and herding effect. Data collection is done through a questionnaire which is shared online. The findings reveal that both traditional finance theory and behavioural finance theory's factors influence the respondents' investment decision. Nevertheless, the behavioural finance theory's factors of heuristics theory and herding effect have greater impact compared to traditional finance theory's factors. In addition, it is revealed that Malaysian investors in Kuala Lumpur perceive themselves to be more rational than they actually are.

Keywords: millennial, traditional finance theory, behavioural finance theory, heuristic theory, prospect theory, market factors, herding theory, expected utility theory, perceived personal investment behaviour, and investment decision

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CHAPTER ONE

INTRODUCTION

1.0 Introduction

Malaysia, a country with a median age of 26.3 years old (Mobius, 2012), is full of investing potential. A report by (Department of Statistics Malaysia, 2010) revealed that the median age of the Malaysian population had increased to 26.2 years old in 2010 compared to 23.6 years in 2000. A recent study by Wikipedia estimates that the median age for Malaysian population in 2015 was 27.7. (Wikipedia, 2016) Investments are ways in which people maximize their income while subsequently minimizing their expenditure (Islamoglu, Apan & Ayvali, 2015). The purpose of this study is to identify the behavioral factors which influence the investment decision of millennial investors in Kuala Lumpur, Malaysia. Millennial investors refer to investors between the ages of 21 to 36 years old.

This chapter presents the background of this study, problem statement, research questions and objectives. In addition, this chapter also discusses significance of the study and identifies the scope of the study. Finally, the organization of this paper is presented in the last section.

1.1 Background of the Study

Historical development of theories on investment decision-making process was heavily influenced by traditional finance theories. In traditional investment theory, the concept is that investors think they can minimize their risk by increasing the quantity of their investment instruments rather than focusing on yields of these investment instruments (Islamoglu, Apan & Ayvali, 2015). However, recent developments in the theory point out to psychological and social factors which influence the investment decision. It has been found that psychological factors such as beliefs, preferences and psychological biases play significant roles in the investment decision-making process (Lodhi, 2014). Ansari and Moid (2013) identify a number of other factors that influence investment decision making. Among them are overconfidence, home bias, sensation-seeking attitude, competence effect, herding, anchoring and heuristics. In general, overconfidence is when investors overestimate their investing skills, home bias is when investors are investing with prejudices and influence from home and their culture, sensation-seeking attitude is when investors invest for the excitement and the adrenaline rush, herding is when investors invest in whatever ventures other people in general are investing in, and heuristics is understood as a set of rules and theories which explain investor behavior.

The traditional theory of investment behavior assumes that individuals are rational human beings who make their decisions based on an understanding of the risk and return trade-offs (Ansari & Moid, 2013). However, recent literature highlights the key role of behavioral science in the investment process (Kabra, Mishra & Dash, 2010).

In order to understand behavior science, specifically the factors of investment behavior, and one must identify the key drivers such as demographic factors like socio-economic background, educational background, age, race and sex (Ansari & Moid, 2013). These factors are important especially to the young adults aged between 21 to 36, or Generation Y. This is because they are keen investors and the driving force of a country's economic growth. They are a generation which grow up with technology and are surrounded with thought of financial independence. Ansari and Moid (2013) hypothesize that there are many reasons why people invest, such as gaining financial independence and security, and owning assets such as cars and homes. Due to these benefits, people place their hard-earned money in different investment opportunities such as shares, bonds and derivatives (Ansari & Moid, 2013).

When traditional finance is not able to fully explain certain investor decision-making behaviors, researchers turn to new models to identify the factors which influence investment decision. Behavioral finance was thus developed in order to shed light on some of the psychological biases which come to play in the decision-making process. Studies by Kahneman and Tversky, published in 1974, shed light on the behavior of the irrational investor (Islamoglu, Apan & Ayvali, 2015). They highlighted that investors concentrate on losses and gains on different levels and that perceived risk is sometimes more important than expected risk.

Malaysia is one of the emerging countries that offers good investment opportunities. It has a strong setting for economic growth and great investing potentials. Nevertheless, little study has been done on the implications of behavioral investment theory on investors in Malaysia. This study aims to shed some light on some of the psychological and social

factors which influence investment decision of Malaysian Millennials in Kuala Lumpur, Malaysia.

1.1.1 Overview on Investment

Investment allows individuals to meet long term necessities and larger financial goals with the element of risk being attached to it. There are a number of different kinds of investment prospects and choices available to individuals, each with its own set of risks and returns. Seven broad types of investments which an investor can choose from, are:

- Equities: securities that are traded in the stock market, both in the primary market and secondary market. In general, they have greater risk with higher returns. Hence, they are better for long-term rather than short-term investment.
- Mutual funds: this is a cost-efficient, risk-diversified and professionally managed investment. This kind of investment tool permits for retail investors to pool their money together and have professionals to manage the fund.
- Bonds: they are fixed income instruments which provide steady income and usually less risky than the equities.
- Deposits: this kind of investment tool has low risk. Examples include deposits in banks and other financial institutions.
- Cash equivalents: these and money market funds are relatively safe and have higher liquidity compared to other investments.

- Real estate: real estate is usually a profitable investment because land never depreciates. Examples include land bank, shop house, residential house, commercial properties and REITs.
- Gold: these investments may include gold futures and gold exchange traded funds.

Jagongo and Mutswenje (2014) define an investor in general as "one who purchases generally small amounts of securities for his or her own account".

Investments are exciting because it gives individuals a sense of self-sufficiency and responsibility for their own financial wellbeing (Veeramani & Karthikeyan, 2014). Each of the investments has risk and possibility for returns, and thus investors feel like the future in undefined but determined by calculated risk taken during their investment decision-making process.

1.1.2 Overview on Generation Y

Generation Y is also known as "Millennial", "Internet Generation", "Dot.com Generation", "Nexters" and "Echo Boomers" (Ganesan, 2012).

Union Bank of Switzerland (UBS, 2014) sums up the characteristics of Millennials through a comical list based off of a Google search of the word "Millennial". Among them are lazy, entitled, narcissistic, spendthrifts, and digitally obsessed. Generation Y refers to group of people between the ages 21 to 36. The findings of their research found that Millennial investors to be "extremely conservative, savors not investors, and not nearly as self-directed as one would expect".

Millennials were born with information at their fingertips available in their very own living rooms. They have revolutionized communication, business and management styles, marketing channels and platforms and have impacted the way financial markets operate.

In addition, UBS (2014) has conducted a research on generation Y investors in the USA and their study concludes, "Millennials" attitudes about money, risk and success have been shaped by two unprecedented conditions: (1) access to technology innovation and (2) dramatic economic and market explosiveness.

In their 2014 study which involves 2,532 millennial investors in the USA, UBS identify seven main traits of the millennial investors:

1. Millennials are conservative because of the financial crisis, so they do not feel safe investing. Millennials care more than any generation about their family, parents and retirement.
2. Millennials care more about achieving success than investing and gaining monetary rewards.
3. Millennials feel they are successful if their relationships are well maintained, they are financially stable, and if they are living life to the fullest and when investing they feel successful.
4. Millennials do not believe investing is a way to make more money, with 70% believing hard work is the way to get there; in addition, Millennials are less likely to invest "found" or "additional" money they receive.

5. Millennials believe money matters with the number one identifier of success being financial freedom and they are just as confident as other generations in their abilities to achieve their financial goals.
6. Millennials and their parents worry about each other and parents feel their children need more to succeed now than the parents did in their time thus they become frequently involved emotionally and financially to help their children to succeed. Despite the economic crisis, research shows that Millennial investors believe they are or will be more successful and financially stable than their parents.
7. Millennials take financial advice from their spouse/partner and parents on financial decisions.

1.2 Problem Statement

Understanding the difference between traditional and behavioral investment theories can help investors overcome some of the invisible challenges that they face when making an investment decision. In addition, an understanding of what these behavioral factors are also empowers investors, giving them the knowledge they need to put biases aside in order to make the best decision possible.

Jagongo and Mutswenje (2014) claim that traditional economic theory is rooted in believing that people are rational rather than emotional and that they make investing decisions in an objective manner. However investing is actually more psychological and emotional, with biases that influence their investing decisions.

Behavioral finance plays a big role in the shaping of emerging economical markets. An understanding of behavioral factors influencing investment decision helps investment advisors devise better investment portfolios suited to the current investment behaviors and trends. In addition, companies must be aware of investor behavior in order to better plan future company policies and strategies. Finally, governments also stand to benefit from behavioral investment research as they may better tailor required legislations and implement policies which are better suited to local and current investment trends and biases (Chitra & Jayashri, 2015; Kengatharan & Kengatharan, 2014).

As behavioral finance is still a relatively new field, there is still much more research which can be made into investment behavior with regards to demographical factors such as age, race, sex as well as culture. It is understood that Asian cultures, unlike individualistic Western counterparts, are collectivistic in nature. Thus, investment behavior and cognitive biases of Asians are hypothesized to be different than those of Westerners.

It is important to conduct in-depth studies into investment behavior in Malaysia, one of the many leading emerging markets in Southeast Asia. This study aims to analyze the different behavioral factors which foreshadow the investment decisions of Millennial Malaysians situated in Kuala Lumpur. The economy of a country is reliant on investments of individuals who drive economic growth and shape market trends. It is important that investors understand what drives their investments in order to better prepare and strategize for financial planning. In addition, the Malaysian market is must be aware of the behavioral factors influencing investors if they are to develop better investment plans and opportunities in order to attract investors in the future.

Generation Y is also a key group to study because they are the wave of the future and the group that is most connected with the recent technological advancements. The millennial generation is a powerful driver for innovation and they are the present and future investors. The following info-graph highlights that by 2025, millennials will comprise the majority of the workforce.

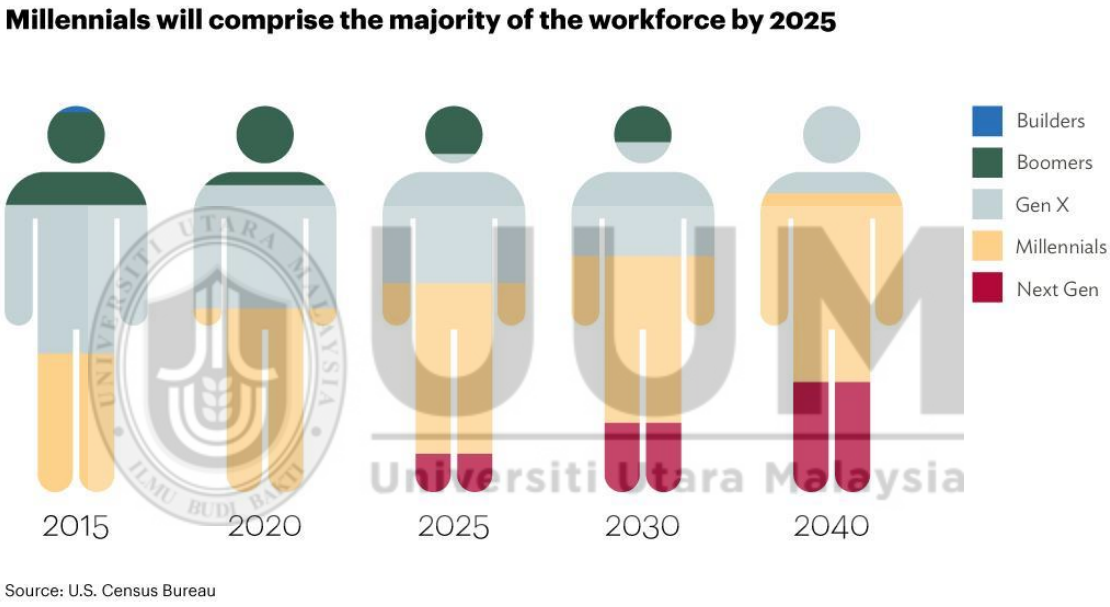

Figure 1.1
Ratio of Millennials to Other Generations in the Workforce

Figure 1.1 shows that by 2025, millennials will comprise the majority of the workforce and thus this may make them the group with the highest spending power and the most capabilities to invest.

The Census Bureau (2014) estimates that the millennial population is going to reach 75.3 million by 2015 and become the biggest group and by 2036 it is projected to be 81.1 million. By 2050, there will be an estimated 79.2 million millennials. Figure 1.2 compares the population by generation.

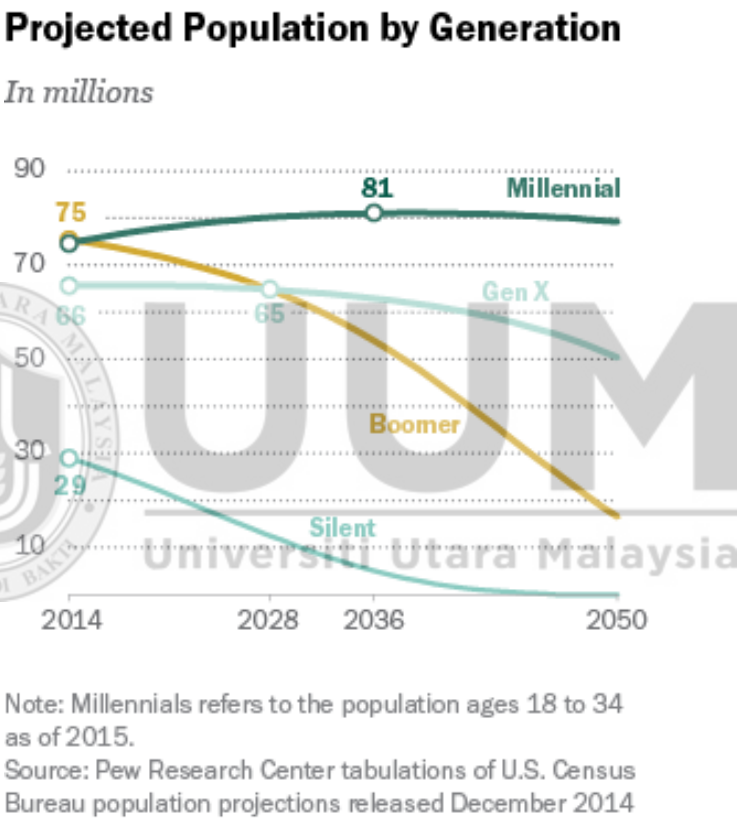

Figure 1.2
Projected Population by Generation

Due to the number of millennials and the way they are shaped by advancements in technology and culture, it is important to conduct a study on this group as they are where the most market is and will continue to be.

1.2.1 Investing in Malaysia and Gen Y

Kuepper (2015) identifies some of the strengths of Malaysia as an investment hub. Among them are the country's good economy, supportive government, educated workforce, and established infrastructure.

Between 1957 and 2005, Malaysia's GDP has experiences a 6.5% average growth and the government has implemented a number of business-friendly reforms in order to encourage investment and development (Kuepper, 2015.). This growth reflects an improving economy that has encouraged foreign and local investments.

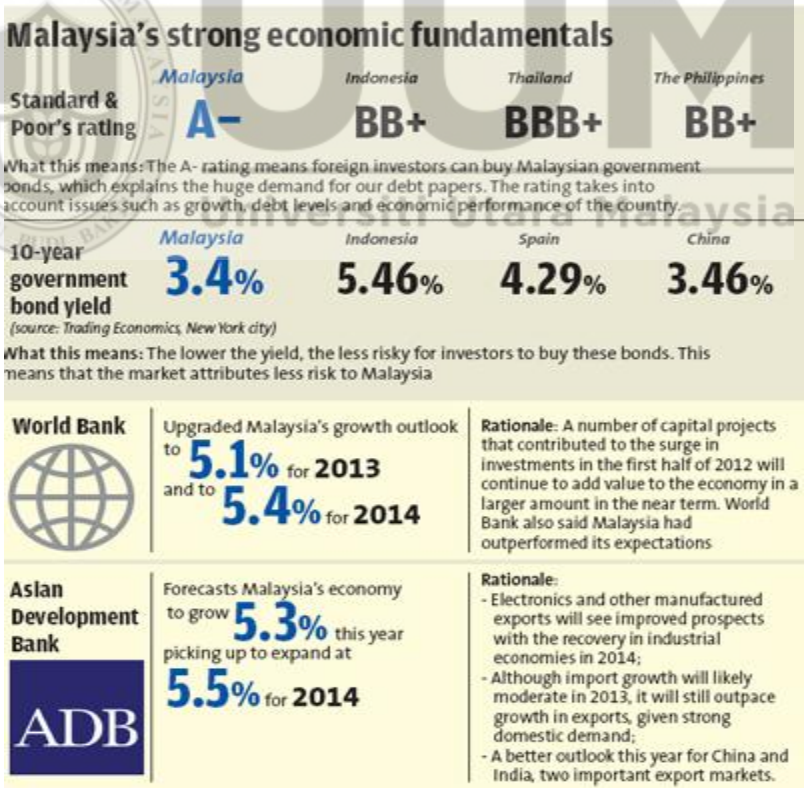

Figure 1.3
Malaysia's Strong Economic Fundamentals
Source: CIMB Investment Bank, 2013

Figure 1.3 discusses some of the recent economic developments in Malaysia through research conducted by the CIMB Investment Bank (2013). It reveals that the level of investment risk in Malaysia has decreased greatly. In addition, the economy has experienced a 5.3% growth in 2013, 5.5% is for 2014 and 4.2% is forecasted for 2016.

Delfeld (2010) lists five reasons why Malaysia is full of investment opportunity:

- Great diversification: Malaysia's economy is has a lot of diversity, like palm oil, tin, petroleum, copper, iron ore and other commodities. 50% of Malaysia's GDP comes from the service industry, with 40% coming from industry and 10% from agriculture.
- Malaysia has good demographics: 32% of Malaysia's population is younger than 15 years of age and 58% of citizens are under 30 and just 8% is older than 60.
- Forward-looking economic plan: The Malaysian government has executed a New Economic Model (NEM) in 2010 in order to increase per capita income to $15,000. Malaysia is also working to grow an average of 6% per year over the next five years.
- Malaysia has good currency: Due to the USA interest rates falling, more money is channeled into developing and emerging Asian markets and thus currencies in Asia are becoming more valuable.
- Valuations in the middle: Markets are already reflecting an improved understanding of Malaysian risk and potential return. The overall price-to-earnings ratio for the Malaysian market is 15 while Singapore is 16.5, Indonesia is 21 and India is 24. An increased economic integration between Malaysia and Singapore nurtures high

economic growth and political stability such as the cooperation on the High Speed Rail (HSR) project.

Thus, prospects of investing in Malaysia are full of opportunity, with the fast-paced advancement of its economy and technology sector and its governmental reforms which encourage investment.

In Malaysia, Generation Y has increased from 5.6 million in 1999 to 6.9 million in 2009, which is equal to 26.9% of Malaysia's population and 62% of the Malaysia workforce in 2009 (Ganesan, 2012).

Ganesan (2012) conducted a study on 600 investors in Malaysia to determine the investing behavior of Malaysians and found that only 34.24% of respondents have a diversity portfolio. The research also reveals that 68.7% of the respondents consider the security of the investment before investing, 61.2% consider the high interest rates, and 53.5% consider the risk.

1.3 Research Questions

In order to tackle the problem statement, these two research questions were devised:

1. What are the factors which influence individual's investment decision?
2. What are the behavioral factors affecting investment decision of Malaysian Millennials in Kuala Lumpur?
3. How disparate are the results between how investors perceive themselves as rational investors and what the data reveals around their investment behavior?

1.4 Research Objectives

The research objectives are as follow:

1. To determine what the different factors influencing investment decision are and to differentiate between traditional finance and behavioral finance from the investment perspective.
2. To identify the different behavioral factors affecting investment decisions of Malaysian Millennials based out of Kuala Lumpur through a survey and exploratory, quantitative study.
3. To investigate the possible discrepancies in the way investors perceive their behavior and their actual investment behavior.

1.5 Significance of the Study

There are many factors which investors take into account when making the investment decision. The factors range from marketability and profitability to the value system of investors. Millennials, or Generation Y, have been shaped by technology and value 'community, creativity and family' (The Council of Economic Advisors, 2014), hence their investment decisions are influenced more on personal success rather than higher returns (UBS, 2014). A study on millennial investing behavior reflected that 'millennials define success based on relationship, financial, and experiential factors' rather than previous generations' investing behavior measured only through 'financial and career terms' (UBS, 2014). With this in mind, recent research into investment decision-making has been focused on understanding and establishing what the intrinsic, behavioral factors to

investment are. This study looks into the behavioral factors that Malaysian Millennials are concerned with when making an investment decision. In this way, this study fills gaps in research as there has not been enough research done on investment behavior of Malaysians.

This study's significance is mainly twofold:

1. For individual investors, this study highlights the factors which influence investment decision and helps identify behavioral factors which have a great impact on financial planning of Millennials.
2. For businesses and stock markets, this study helps identify what are the factors which concern current millennial investors in Malaysia, giving them insights which they could use to develop better investment plans and strategies to attract investors.

1.6 Scope of the Study

This study focuses on examining investor behavior of Millennials in Kuala Lumpur, Malaysia.

Due to time constraints, only investors from the Malaysian capital of Kuala Lumpur were included in this study, and the behavior of investors from other parts of Malaysia were not included in this study.

In addition, the data for this study was obtained from millennial investors aged 21 to 36 in Kuala Lumpur and the analysis is done based on their answers provided by them. Thus, the data analysis and interpretations of the results depend heavily on their responses through the questionnaire distributed.

1.7 Organization of the Thesis

This study is organized in five chapters:

Chapter One – Introduction: This chapter provides an overview of the topic and focus of this study. It presents the background of the study, the problem statement, the research questions and objectives and the significance of this study. Finally the scope of the study are also presented.

Chapter Two – Literature Review: The second chapter is the literature review which highlights the theories of investment behavior and presents findings from previous studies related to psychological and social factors which influence investment decision making process.

Chapter Three – Methodology: The third chapter explains the methodology of this study which is quantitative in nature and makes use of the SPSS software in order to analyze gathered data. The target group, sampling method, survey instrument and the data collection and analysis methods are all explained in depth.

Chapter Four – Research Findings and Analysis: This chapter presents the findings of the data and goes into an in-depth analysis of the findings. The findings are discussed in order to draw the conclusions of this study.

Chapter Five – Conclusion: This is the final chapter of this study and it summarizes the findings of the study. The implications of this study and recommendations for future research are highlighted.

1.8 Conclusion

This chapter introduced the background of the study and presented the research questions and objectives as well as the significance of the study. The structure of this study was also identified. The next chapter will discuss literature review and theories related to this study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter discusses two major theories applied in this study which are traditional and behavioral finance theories. Specific behavioral finance theories such as Prospect Theory, Heuristic Theory and The Herding Effects are discussed in detail. In addition, this chapter also critically reviews past empirical evidence on market factors which influence the investing behavior of investors. This chapter also discusses whether Asian investors are more rational or more based on cognitive bias or social psychological factors in making their investment decision.

2.1 Comparing Traditional and Behavioral Finance Concepts

Rani (2014) defined investment as giving up money in the present in order to gain future returns. In other words, the use of capital to generate productive outputs.

Fama (1970, 1991) received a Nobel Prize for the Efficient Market Hypothesis which is derived from the traditional finance theory and asserts that investors are rational and objective and invest with one objective in mind: to maximize their expected utility (Ton & Dao, 2014). Unlike traditional finance theory, which focuses on the reliability of

investment information, behavioral finance gauges people as individual humans who are privy to being partial by a number of social and psychological factors despite rational financial information being accessible (Ton & Dao, 2014).

Litner (1998) defined behavioral finance as, "the study of how humans interpret and act on information to make informed investment decisions." Olsen (1998) highlights the psychological aspect of behavioral finance, affirming that behavioral finance does not study the rational behavior of investors but rather attempts to define the psychological decision making process and the implications of behavioral factors on investors and the market.

Islamoglu, Apan and Ayvali (2015) draw a conclusion based on Statman (2014) to differentiate between traditional and behavioral finance. Specifically, they assert that in traditional finance, people are rational and markets are efficient. They further claim that actually people are human and prone to mistakes and markets are not always efficient. According to behavioral finance irrationality or the limited rationality approach is frequently adopted instead of the rational decision-making approach in choosing an investment alternative.

Ton and Dao (2014) state that behavioral finance is a part of finance. They highlight that behavioral finance looks into the human psychological and emotional factors influencing a finance, investment decision and that it draws from the fields of psychology, sociology and finance in order to understand the investment behavior. This helps researchers understand and explain the investment behaviors of investors which cannot be understood by Traditional Finance.

Rani (2014) defines behavioral finance as a field of finance which is gaining attraction and which looks into the psychological and social motivators behind financial decisions and behaviors. She highlights that behavioral finance focuses on the explanation and action of investors based on micro and macro information available for them to make their investment decisions. Behavioral Finance Micro (BMFI) depends on the behavior of individual investors; Behavioral Finance Macro (BMFA) depends on the behavior of markets. Rani (2014) also highlights that in traditional finance theory, it is assumed that investors make rational decisions based on reliable evidence and without any bias or sentiment.

Phan and Zhou (2014) summarize the relationship between traditional and behavioral finance with traditional financial theories assuming that investors are objective and their investing reasons are dependent on financial value whereas behavioral finance is there to supplement traditional finance theories and offer frameworks for the decision process of investment. Behavioral finance understands that people are emotional beings and are influenced by a number of emotional, psychological, and social factors (Phan & Zhou, 2014).

When looking at financial theory from the traditional perspective, investors are thought to be rational wealth maximizers who follow basic rules and base investment strategy on risk-return consideration (Jagongo & Mutswenje, 2014). In practice, that is found to be untrue and people have revealed a more emotional influence on investment behavior. These evidence are found in the previous studies conducted in Ho Chi Minh (Ton & Dao, 2012) and Karachi (Lodhi, 2014).

Ton and Dao (2014) assert that traditional finance relates to quantitative measures of risk such as variance, standard deviation, and beta. They differentiate it from behavioral finance which is more qualitative in nature and involves a deeper insight into the psychological and emotional factors in investment decision.

2.2 Behavioral Finance Theory

Behavioral Finance Theory involves a number of psychological, social and market factors and variables.

According to Luong and Thu Ha (2011) important factors under behavioral finance can be grouped into four categories. They are Heuristic Theory, Prospect Theory, Market Factors and Herding Effect. Each group or theory can be broken down further into smaller subsections which contribute to and explain the theory. A number of behavioral variables and their relevant theory are summarized in Table 2.1:

Group	*Behavioral variables*
Heuristic Theory	- Representativeness - Overconfidence - Anchoring - Gambler's fallacy - Availability bias
Prospect Theory	- Loss aversion - Regret aversion - Mental accounting
Market	- Price changes - Market information - Past trends of stocks - Fundamentals of underlying stocks - Customer preference - Over-reaction to price changes
Herding Effect	- Buying and Selling decisions of other investors - Choice of stock to trade of other investors - Volume of stock to trade of other investors - Speed of herding

Table 2.1
Behavioral Factors Influencing Decision-Making of Investors
Source: Luong and Thu Ha, 2011

2.2.1 Heuristic Theory

Ritter (2003) defines heuristics as a set of rules which improve the efficiency of decision making in the situation where the environment is complex and uncertain. Luong and Thu Ha (2011) use the results of the research conducted by Kahneman and Tversky (1974) to identify the behavioral variables of representativeness, availability bias, and anchoring. In addition, they highlight Waweru et al. (2008) who contributed to Heuristics by listing two more factors: gambler's fallacy and overconfidence.

Representativeness is how similar an event is with the parent population (Luong & Thu Ha, 2011). An example to better illustrate representativeness is illustrated by taking the case of an investor who infers a company's high long-term growth rate after some quarters of increasing. This leads to investor overreaction.

Gambler's fallacy highlights that gamblers on a losing streak tend to double up their bets in hopes of recapturing the money that they have lost in the investment (Jagongo & Mutswenje, 2014). Gambler's fallacy happens when people wrongly predict the reverse points of the market returns (Luong & Thu Ha, 2011).

Anchoring happens when people use initial values to make a valuation which is biased towards the initial values as different beginning points yield different approximations (Luong and Thu Ha, 2011). This may also lead to under-reaction to unexpected changes and highlights that people tend to be more confident when the market rises and more cynical when the market falls (Luong and Thu Ha, 2011).

Chitra and Jayashri (2015) assert that overconfidence affects the company's internal financial structure as well as their relationships with other market participants in the chances of mergers and acquisitions. Overconfidence is when people think too highly of themselves and think themselves too skillful and rational as investors resulting in investments which are not sound and which may lead to losses (Ansari & Moid, 2013). They draw upon the conclusion of Glaser and Weber (2003), arguing, "There are three aspects of overconfidence: miscalibration, the "better-than-average" effect (people tend to think that they have higher than average skills) and illusion-of-control (the tendency to believe that one's personal probability of success is higher than what objective probability would warrant)." Miscalibration is a pattern whereby investors usually overestimate themselves than what others evaluate and they ignore the risks (Ton & Dao, 2014).

Availability bias happens when investors abuse information that is effortlessly accessible to them such as investing in familiar stocks, local companies, or companies whose

information is easily obtainable (Luong & Thu Ha, 2011). Ton and Dao (2014) state, Availability bias is an inborn human bias which leads to investors overestimating their investing skills and abilities in association with memorable events which have taken place in their lives. This results in an investment which is emotionally relevant and biased to the investor. This increased sense of self confidence leads to investors making bad investment decisions that ultimately result in losses for the investor.

2.2.2 Prospect Theory

Prospect Theory and Expected Utility Theory are two approaches to understanding investor decision making from two different perspectives. Kengatharan and Kengatharan (2014) stating that prospect theory identifies with the subjective nature of decision making of investors, whereas EUT outlines the rational expectations of investors. Hence, EUT is a model of rational choice and descriptive model of economic performance.

Luong and Thu Ha (2011) state, "Expected utility is the total sum of utility values of results multiplied by their expected probabilities." They surmise that the theory assumes that investors who are rational can choose between two options clearly, investors are able to depend on themselves when making an investing decision, and that investors will make similar decisions regardless of whether good or bad outcomes arise from them.

Under Prospect Theory, regret aversion deals with the emotional response people experience once they recognize that an error of judgment has been made and Pareto (1997) highlights that some investors, determined to sidestep that regret, follow the wisdom of buying stock that everyone else is buying.

Loss aversion suggests that people express a different degree of emotion towards gain than towards losses and people are more stressed by the prospect of losing than they are happy from equal gains (Jagongo & Mutswenje, 2014). In summary, people take more risks to escape losses than to get gains.

Mental accounting is the procedure in which people think about and evaluate their financial transactions (Luong & Thu Ha, 2011). Humans are able to compartmentalize different events in their head and the difference between the compartments can lead to changes in investing behavior (Jagongo & Mutswenje, 2014). An example of this theory is demonstrated when an investor refuses to sell off investments which used to bring in high returns but no longer does so. The researchers highlight that the investors create mental boxes for the gains that were a thing of the past in hopes that the past will soon echo itself.

2.2.3 Market Factors

Drawing on research by DeBondt and Thaler (1995), Kengatharan and Kengatharan (2014) assert that financial markets are affected by investors' behavioral finance and in turn, the market factors impact decision making of investors. Some of the market factors which influence investors include price changes, market information, past trends of stocks, customer preference, over-reaction to price changes, and fundamentals of underlying stock. Some of the behaviors of investors which affect the market are over or under-reaction to price changes or news, extrapolation of past trends into the future, lack of attention to fundamentals of underlying stock, focus on popular stocks and seasonal price cycles.

Luong and Thu Ha (2011) assert that market factors are not specifically considered a behavioral factor in studying investment decision; however, they acknowledge its influence on investment behavior. Market factors play a big role in investment behavior as they are variables which are taken into consideration by investors in the process of making an investment decision.

2.2.4 Herding Effect

Kengatharan and Kengatharan (2014) define herding effect as the inclination of an investor to follow the investing behavior of others. In this case, investors rely on collective information more than private information and be influenced by emotional biases (Luong & Thu Ha, 2011).

Herd behavior takes place when an investor copies the actions of other investors in their friend circles or in the immediate public while paying little or no attention to information about the investment or marketplace (Ton & Dao, 2014). Thus it is necessary that investors try to control their emotions rather than doing what the public is doing.

Herding behavior is likened by researchers (Kengatharan & Kengatharan, 2014) as primitive men who are unaware of their environment and have very minute information, thus choosing to stick together in order to act as support for each other for survival.

Luong and Thu Ha (2011) also highlight the negative effect of herding on the financial markets which is that investors depend on collective information which can misrepresent the value of securities and thus impact the investment value. In addition, herding behavior

is studied closely by academic researchers who study the way in which herding influences risk and return models and the way in which investing behavior impacts asset pricing theories.

Ultimately, it is hypothesized that herding is common amongst investors due to the need of investors to elude feelings of regret in case of bad judgment (Luong & Thu Ha, 2011).

2.3 Literature Review of Investors' Investment Decision

Asia is an emerging market with extraordinary investment potential. According to Kim and Nofsinger (2008), Asians are more likely than Western people to lean towards cognitive biases as individual investors and are usually considered gamblers. Due to significant cultural differences between the East collective cultures and the West individualistic cultures, Kim and Nofsinger (2008) believe that Asians undergo higher behavioral and cognitive biases in their financial decision-making process.

Mathews Asia (2012), an investing firm which has established itself since 1991, highlights, that Asia's growth is faster than that of the rest of the world. They identify a number of statistics which point out the ripe investing potential in Asia:

- In 2009, China's car sales were greater than USA, and by 2011 has 100 million passenger cars.
- More than 8% of households in South Korea has broadband access more than any other country in the world.
- Asia has the largest community of people online by total number of internet users

- In 1990, there were just two nationally broadcast television channels in India, Today, there are hundreds.
- Asia's market is being transformed by the increase in personal wealth and subsequent consumption, and improved economic liberalization and globalization.

Kuepper (n.a.), an international investing expert, asserts that Southeast Asia has always been important to global trade and now countries like China, India, Singapore, Malaysia and Thailand are becoming emerging markets that are forming financial and trade hubs to continue to improve the economy.

Ganesan (2012) pioneered studying the consumption, saving, spending and investing habits of Generation Y in Malaysia. The objectives of the study were fourfold: (1) to determine the consumption and spending habits of Malaysian Gen Y; (2) to determine the level of saving and forms of saving preferred by Malaysian Gen Y; (3) to determine the method of investment practices and the awareness of risk management; and (4) to determine the effective communication channels with Malaysian Generation Y.

The research adopted the quantitative approach with 592 respondents to questionnaires. It was concluded from the study that 60% of Gen Y's monthly income is spent. In addition, it was revealed that Malaysian Generation Y considers investing in stock market as risky and they do not prefer to invest in high-risk investments. Finally, the findings reveal that the preferred channel of communication between Malaysian Generation Y and Financial Institutions and Banks is online through email and social media platforms.

In Vietnam, Ton and Dao (2014) conducted a study on 422 Vietnamese investors in order to examine psychological factors influencing investors decision-making as well as their effects on the Vietnam Stock Exchange. The study was quantitative in nature and the results were based on the analysis of surveys given to investors who have extensive investing experience and knowledge and have worked many years in the VSE.

Their study reveals that there are five psychological factors influencing investment decision: overconfidence, optimism, herd behavior, psychology of risk, and pessimism. They concluded that excessive optimism, psychology of risk and excessive pessimism have positive long-term effect on the investment whereas overconfidence and herd behavior have negative effects on long-term investment. Finally, their study also exposed that the market is under pressure to change, which in turn causes a problem on long-term investments. Results illustrated that 80% of investors tend to invest in long-term projects which could be seen as a sign of an improving economy.

Ton and Dao (2014) eloquently state that connecting psychological theory and practice in finance allows financial practitioners to better understand problems which cannot be clearly defined and reasoned using traditional economic theory and traditional finance theory.

Lodhi (2014) looked into investment behavior of investors in Karachi. The study examines the impact of financial literacy, accounting information, openness to experience and information asymmetry on individual investor's decision making through the empirical research of people living in Karachi city.

It is a quantitative research which aimed to determine the relationship between independent and dependent variables. The independent variables included: financial literacy, high experience, use of accounting information, importance of analyzing financial statements and age. The dependent variables included: risk taking, preference investment in shares (risky investment), risk aversion, information asymmetry and shares investment.

Lodhi (2014) found that financial literacy and accounting information helps investors by decreasing information asymmetry and allowing investors to invest in risky investments. However, Lodhi (2014) also discovered that age and experience play key roles in investing behavior, whereby the older and more experienced an investor is, the more investors prefer less risky investments and aim to receive dividend returns rather than capital gains. The results of the study also show that the more financial literacy an investor gains, the more their risk-taking capacity increases. Finally, the study statistically shows that accounting information and risk aversion are in direct relationships whereby the more accounting information increases, the more investors prefer to invest in less risky investments as they are not ready to suffer huge losses.

Thus in Malaysia, it was found that investors do not feel comfortable taking risky decisions and are quite risk averse, unlike investors in Karachi who turn to educate themselves on investments in order to decrease their risk aversion. In Vietnam, it was found that the psychology of risk is actually a positive factor, ensuring that investors are careful before making investments which carry potential losses.

The studies also reveal trends in investment channel preference of investors, revealing that Malaysian investors prefer to turn to online and social media platforms for investing,

whereas Vietnamese investors prefer to invest in long-term stocks. In Karachi, more investors are older and experienced members of society because their age has made them less risk-averse and more prone to taking high-risk high-return investments.

2.4 Conclusion

This chapter has introduced the theories of investment behavior and highlighted the variables which are the backbone of the theoretical framework of this study. In this day and age, we are all investors, putting money away into our pension funds or choosing the right health insurance for our families. The difference between traditional finance theory and behavioral finance theory was established with a focus on four categories of Behavioral Finance Theory delved into: Heuristics, Prospect Theory, Market Factors and Herding Theory. These four categories will serve to be the independent variables of this study. In addition, this chapter also introduces Generation Y and identifies the investing behavior of Generation Y, exploring investments potential in Southeast Asia and Malaysia. Finally, a review of literature on investment behavior in Southeast Asia and Malaysia was critically reviewed.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter discusses the methodology of this study. It highlights the hypotheses that are proposed and identifies the variables of the study. In addition, it introduces the research instrument and the sampling group. Finally, flows for data analysis are discussed.

3.1 Quantitative Research Definition

This research is exploratory in nature and makes use of the deductive, quantitative approach. A hypothesis will be developed, followed by the development of the research instrument – a survey – and the dependent and independent variables of this study.

Quantitative research is numeric in nature. It refers to a research method whereby the data collected is counted or quantified. Creswell (2007) highlights that the quantitative approach focuses on cause and effect thinking, reduction to specific variables and hypotheses and questions, use of measurement and observation, and the test of theories. The quantitative approach makes use of experiments and surveys as data collection instruments. Finally, quantitative data aims to provide statistical evidence for the research questions in mind.

Creswell (2010) identifies two key tools of inquiry which are used as the basis of data collection. The tools are experiments and surveys. Experiments could be both 'true experiments' and 'quasi-experiments'. True experiments refer to a random assignment of subjects to treatment conditions take place. Quasi-experiments are when non-randomized designs are prevalent. He states that surveys include 'cross-sectional studies' and 'longitudinal studies' as well as 'structured interviews' for data collection with the intent of generalizing from a sample to a population.

3.2 Hypothesis Development

A hypothesis is a statement which identifies the predictions made by the researcher regarding the relationship between the variables of the study.

Behavioral finance perceives the investor as an emotional being who makes biased investment decisions based on perceived economic environment, friends and family and their own personal risk and loss aversions (Litner, 1998). A number of factors are seen to play a role in behavioral finance such as the Prospect Theory, Heuristics, Market Factors and Herding Effect. Traditional finance, specifically the Expected Utility theory, is also taken into account in order to compare between the roles of behavioral and traditional finance in the shaping of investment decision. This gives rise to the first hypothesis which aims to highlight the different variables which play key roles in investment decision and the extent to which behavioral factors and Expected Utility theory influence the investment decision. The hypothesis supports the behavioral finance theory which states that people

are emotional investors that come under the influence of a number of non-financial factors when making the investment decision.

One of the objectives of this study is to understand the way in which Malaysian investors in Kuala Lumpur are influenced by behavioral factors, giving rise to the second hypothesis which asserts that Malaysian investors are indeed influenced by behavioral factors such as overconfidence, herding, loss aversion, risk aversion, anchoring and market factors such as price changes, past trends of stocks and customer preference of certain companies and brands (Luong & Thu Ha, 2011). This hypothesis is developed from looking at the results of previous studies conducted on behavioral finance in Southeast Asia. The conclusions of those studies conducted in Ho Chi Minh (Ton & Dao, 2012) and Karachi (Lodhi, 2014) highlight that behavioral finance plays a critical role in the investment decision. The only variation between the studies was the extents to which each factor impacted the investor decision-making process. This study aims to identify whether Malaysian investors in Kuala Lumpur are indeed similar to those in other parts of Southeast Asia and the hypothesis stands that indeed they are influenced by behavioral factors and are similar to investors in other parts of the region.

A study by Kim and Nofsinger (2008) reveals that Asians are more likely than Westerners to be influenced by cognitive, social, and psychological factors when making an investment decision. This study aims to highlight the impact and extent to which the different factors of behavioral finance influence investor decision and thus it is hypothesized that behavioral finance factors positively impact investment decisions of Malaysian investors from Kuala Lumpur.

Traditional finance has always propagated the idea that investors are rational beings that follow basic economic and financial rules and makes decisions based on calculated risk and advice from key players in the financial world (Jagongo & Mutswenje, 2014). However, from observing everyday behavior of people it becomes clear that investors are human and deeply influenced by their emotional state, thus even during the investment decision-making process, it is believed that in the real world, investors are more emotional than rational. That does not change the fact that the ego of successful investors might have convinced them that they are rational and calculated investors who make investment decisions purely in accordance to traditional finance theory. Hence, the final hypothesis is that investors in Kuala Lumpur perceive themselves to be highly rational investors whereas in-depth analysis of their responses may highlight variations which point out that they are in-fact more prone to making investment decisions based on behavioral finance factors rather than traditional finance factors.

In summary, the hypotheses of this study include:

HYPOTHESIS H1: Behavioral variables which influence investment decision include the Expected Utility theory, Prospect Theory, Heuristics, Market Factors and Herding Effect.

HYPOTHESIS H2: Behavioral factors affect the investment decisions of Malaysian investors in Kuala Lumpur at a high level.

HYPOTHESIS H3: In support of Behavioral Finance, behavioral factors are hypothesized to have positive impact on investment behavior of Malaysian investors in Kuala Lumpur.

HYPOTHESIS H4: Malaysian Investors in Kuala Lumpur perceive themselves to be more rational investors than they actually are.

3.3 Statistical Method used for each of the Hypothesis

HYPOTHESIS H1: Behavioral variables which influence investment decision include the Expected Utility theory, Prospect Theory, Heuristics, Market Factors and Herding Effect. The analysis is done using descriptive statistics which include the mode, median, mean, variance and standard deviation are used to analyze the demographics of the respondents as well as the influence of behavioral factors on investment decisions.

HYPOTHESIS H2: Behavioral factors affect the investment decisions of Malaysian investors in Kuala Lumpur at a high level. Descriptive statistics is used alone with Factor Analysis which helps to analyze the data. The Kaiser-Meyer Olkin Measure of Sampling Adequacy (KMO) is between 0.5 and 1 to ensure that the data is suitable for analysis (Luong & Thu Ha, 2011). The total variance used along with the Eigen-value which ensures the validity of the data. These values are all done and determined by the SPSS software. Reliability is ensured through Cronback's Alpha Test which is used by social and behavioral researchers to ensure reliability (Luong & Thu Ha, 2011).

HYPOTHESIS H3: In support of Behavioral Finance, behavioral factors are hypothesized to have positive impact on investment behavior of Malaysian investors in Kuala Lumpur. Impact is calculated through standard deviation and the mean using the SPSS software.

HYPOTHESIS H4: Malaysian Investors in Kuala Lumpur perceive themselves to be more rational investors than they actually are. An analysis of the entire research using all the quantitative analysis methods discussed in chapter three will be used in order to determine whether investor perceptions on their investment behavior is the same as the results of the previous hypotheses highlights.

3.4 Research Design and Approach

Research design deals with the decisions regarding what, where, when, how much, and by what means concerning the research study (Kothari, 2004). Research design serves the purpose of helping researchers find answers to their research questions (Kumar, 2005) Kothari (2004) states that research design allows researchers to better understand the way in which data will be collected and analyzed and forms a conceptual framework the defines the way the research will be conducted, guiding the researcher throughout the research process.

The important function of research design is allowing researchers achieve the research objectives without any bias being involved (Vaus, 2001).

This study uses the experimental, also known as hypothesis-testing research design. Hypothesis-testing designs usually begin with a theory/hypothesis as a guide and works towards testing the worth of the theory/hypothesis (Vaus, 2001). Thus, it is working down from general to specific. This research proposes a number of hypotheses and attempts to discover the way millennials in Kuala Lumpur invest using the Behavioral Investment theoretical framework.

This study also makes use of the deductive approach to research. In general, deductive research tends to move down from theory to method to data to findings. Hence, it is a model which tests theory. Pathirage, Amaratunga & Haigh (2008) assert that the focus of deductive approach is the deduction of new ideas from existing theory in order to better understand existing theories and provide new ways of understanding it. Deduction owes more to positivism and is adopted by positivists who wish to test hypotheses and theories

through statistics and logic-driven methods. Saunders et. al. (2005) state that there are several important characteristics of this approach which include the search for explanations for causal relationships between variables, the use of quantitative tools in order to test theories, the establishment of the independence of the researcher from the study being conducted thus leading to higher objectivity, and finally the concept of generalization is possible due to sampling procedures adopted under this approach.

Robson (2002) lists five sequential stages involved in the deductive approach:

I. First, a hypothesis is established from a theory.

II. The hypothesis is expressed in variables, both dependent and independent, and which shows the relationship between the variables.

III. The operational hypothesis will then be tested through different strategies of hypothesis-testing.

IV. The outcome will then be studied and decisions are made on whether outcomes support or argue the existing theory.

V. If necessary, the evidence will provide reasons to modify the theory and improve existing knowledge.

Hence, the deductive, top-down approach either provides more evidence to support a theory or aids in the formation of a new or modified theory which future researchers can provide further evidence for in more studies.

3.5 Operational Definition

There are a number of important operational definitions that must be clearly identified to understand the variables which were chosen for the survey.

- Investment: it is the act of spending money today in order to gain future income (Rani, 2014).
- Behavioral Finance: it is the study of how people interpret financial information in order to make an investment decision (Litner, 1998).
- Expected Utility Theory: EUT is a model of rational choice and a descriptive model of economic performance (Kengatharan & Kengatharan, 2014).
- Market Factors: they are factors such as price change, market information, past trends of stocks, customer preference etc… which are not particularly behavioral factors but heavily influence behavioral decisions.
- Prospect Theory: it is a theory that focuses on the way investor behavior is influenced by the investor's value system and includes factors like loss and regret aversion and mental accounting (Luong & Thu Ha, 2011).
- Heuristics: Ritter (2003) defines heuristics as "rules of thumb which make decision-making easier, especially in complex and uncertain environments by reducing the complexity of assessing probabilities and predicting values to simpler judgments".
- Herding Theory: Herd behavior takes place when an investor copies the actions of other investors in their friend circles or in the immediate public while paying little or no attention to information about the investment or marketplace (Ton & Dao, 2014).

3.6 Measurement of Variables

The questionnaire is divided into three sections: personal information, behavioral factors, and perceived personal investment behavior. In the first section, the nominal and ordinal measurements are used to classify and rank the order of observations (Luong & Thu Ha, 2011). Table 3.1 shows the different types of measurement used to gather personal information of the respondents.

Table 3.1
Types of Measurements for Personal Information

Personal Information	**Questions**	**Type of Measurement**
Gender	1	Nominal Scale
Age, Education Level, Years of Experience	2, 3, 4	Ordinal Scale

The questionnaire used in this research has been developed through an electronic survey creator. Its reliability and validity have been confirmed satisfactory. This questionnaire is adopted from past studies with similar objectives (Luong & Thu Ha, 2011; Chitra, 2015; Kengatharan & Kengatharan, 2014; Lodhi, 2014), with only minor changes to suit geographic and demographic reasons. 5- Points likert scale is used to consider the degree to which respondents feel a certain way about variables presented. Table 3.2 provides the 5-point Likert Scale used in the questionnaire:

Table 3.2
5-Point Likert Scale

1	Least Influence
2	Influence
3	Neutral
4	Significantly Influence
5	Completely Influence

The 5-point likert scale limits subjectivity and increases the reliability of the data collected. This research is based on behavioral finance theories and the Expected Utility Theory and Market Factors which influence investors' decision-making. The 5-point Likert scale asks the investors to evaluate the degree to which they agree with the impact of behavioral factors on their investment decisions.

For the Perceived Personal Investment Behavior the 3-point Likert Scale is used which measures the degree to which the respondents identify with one of three points as shown in Table 3.3 3-Point Likert Scale:

Table 3.3
3-point Likert Scale

1	Disagree
2	Neutral
3	Agree

3.7 Data Collection

A sample is obtained from the population (Veal, 2005). The sample is selected for the study because of various reasons: lower cost, greater accuracy of results, greater speed of collection and availability of population element (Cooper & Schnidler, 2008). Sample size is a size of sample in number of observations or cases specified by the estimated variance of the population, the magnitude of acceptable error and the confidence interval (Zikmund, 2003). Field (2009) mentioned that sample size is based on that number of variables and the size expected effect. Thus, in general, the sample size of 200 would be enough for a medium sized effect. Data collection will be done through a questionnaire which is shared online through a survey portal with a sample size of 200 investors from Kuala Lumpur, Malaysia.

3.7.1 Sampling

This research makes use of the Purposive Sampling Method as our sample group all must be Millennials who have invested before or are currently investing.

According to Ritchie, Lewis and El Am (2003) state that purposive sampling method is selecting respondents based on specific choice on setting, qualifications, demographics and other research units. This ensures that the features needed to be present in the study exist in the respondents and allows the researcher to better study the research themes and puzzles.

There are two key aims to purposive sampling highlighted by Ritchie, Lewis & El am (2003), it makes sure that important and key units to study are available within the sample to study, and it also ensures that there is enough diversity to explore the phenomenon better.

In this study, the aim of purposive sampling was to ensure that all respondents are millennials and are investors. In addition, the second aim was also adhered to since the sample includes individuals from different age-range within the Millennial age group, different ethnic circles within Malaysians (Malay, Chinese, Indian), occupations and genders. This is to ensure that the perspectives of the different groups can be sufficiently explored and represented. Respondents will not be asked to identify with any particular Malaysian race such as Malay, Chinese or Indian due to the sensitivity of the racial issues. As Malaysia is looking to celebrate Satu Malaysia, the racial subgroups under the Malaysian nationality will not be taken into consideration as this research studies the way Malaysian Investors from Kuala Lumpur are influenced by behavioral finance rather than the effect of race on investment behavior in Kuala Lumpur.

The type of purposive sampling that this study makes use of is the Homogeneous sampling approach. This is because the respondents have two criteria in common in order to be selected as part of the sample: (1) they are all Millennials; and (2) they all have investing experience. In this way, the particular phenomenon of 'millennial investment behavior' can be studied in detail within similar contexts. The questionnaire was distributed online via an online survey platform and the responses were collected from 200 respondents.

This sample was obtained with the purpose of finding millennial investors who have experience investing in order to understand the factors which affect their investment

decision. The sample was obtained online because it is cheaper, has wider reach and accessibility, and it is faster especially since one of the limitations is time constraint. According to Field (2009) the sample size depends on the variables being studied and in this case the sample size is 200 respondents in order to have generalizable results.

3.7.2 Instrument

This research made use of a questionnaire or survey. The survey was divided into two main sections:

A. Personal Details: included questions which determined certain key, relevant demographics of the sample group. It included questions about age, educational background, investing experience and background, and gender. Questions that were not included were those about race and religion and the reason is because Malaysian is one nationality and although cultures may be slightly different within the three races of Malaysia, this study does not aim to study investing behavior from a religious or racial perspective but more of a geographic, Malaysian perspective.
B. Investing Behavior questionnaire: in this section, the variables are presented in six subcategories and respondents must highlight the extent to which the presented variables influence their investing behavior:
    a. Expected Utility Theory: this section determines the influence of variables such as stock affordability, expected dividends and risk, personal intuition, and investment trends.
    b. Market Factors: this section determines the influence of market factor variables such as corporate earnings, dividends paid, availability of

financial information, stock marketability, and the economic health of the country (Malaysia).

c. Prospect Theory: this section determines the influence of variables such as religious or personal reasons, compliance of a firm to Shariah Law, affinity towards the products and services of the firm, the number of people investing in the firm, the level of corporate social responsibility of the firm, and the perceived risk of loss.

d. Heuristics: this section determines the influence of variables such as the current economic indicators, available information on the investment, press coverage on the firm, investment in existing portfolio, confidence in one's investing skills, price fluctuations of stock.

e. Herding Effect: this section determines the influence of variables related to herding such as the opinions of family, friends and co-workers, or that of the majority stock holder of a firm or that of a broker.

f. Perceived Personal Investment Behavior: this section attempts to develop an insight into the personal perceptions of investors about their investment behavior. Respondents are required to identify with the statements by identifying whether they agree, disagree or are neutral. Statements contain variables such as loss and risk aversion, overconfidence, and herding.

3.8 Data Analysis

Quantitative analysis makes use of numerical data to discover and describe patterns related to the research study (Chambliss & Schutt, 2015).

Data analysis will involve representing the findings using tables and graphs in order to highlight the patterns that emerge from the survey. This is followed by 'data cleaning' which is the process of checking the data collected and prepared for analysis for errors. The data will then be coded in order to highlight the variables that will be analyzed.

The data will then be summarized using the 'Measures of Central Tendency', which is highlighting the mode, the median or the mean (Chambliss & Schutt, 2015) and is used for variables measured at the nominal level. The mode represents the most frequent value in the distribution and highlights where the most collection of cases is. For example, in this study, we can use the mode to ascertain whether most of the investors are male or female. The median is the position average at the 50^{th} percentile. It divides the distribution of your data in half by arranging the data in numerical order and choosing he point that divides the distribution in half. If more than one data is in the center, then the average of the two cases is taken. The mean is the average calculated by computing the sum of the value cases divided by the number of cases.

In addition, the range will be analyzed, which is the easiest way to measure variance by calculating the highest value minus the lowest value plus one. Variance is a statistical measurement of the variability which highlights how the amount each case is different from the mean. The variance is used to calculate the standard deviation which is the distance

from the mean which covers the majority of cases. It is a very useful measurement of variation of the set of cases (Chambliss & Schutt, 2015).

Finally, the percentage will be calculated which is the given number of cases divided by the total number of cases and multiplied by 100 in order to compare the different groups of quantitative codes.

ANOVA: It tests the null hypothesis that the means of several independent populations are equal (Cooper & Schnidler, 2008). Deviation of the data can be separated into between group variance and within-group variance. The between groups variance represents the effect of the treatment, or factor. The differences of between-groups that each group gives rise to deviations in the sample mean from the grand mean. The within- groups variance describes the deviations of the data points within each group from the sample mean. Error is the variability from the subjects and the random variation. The test statistics for ANOVA is the F ratio (Cooper & Schnidler, 2008).

3.8.1 Values Preparation

Before starting with the data analysis, a method to replace missing values should be conducted for more accurate results. A quick frequency research of the responses collected resulted in 24 missing values out of 7800 responses. Being such a small number compared to the total amount of responses, the best option was used to replace the missing values. A linear interpolation was used using ordinary least squares (OLS) regression to predict the missing values and impute them; sometimes called regression imputation.

3.8.2 Pre-Testing

Pilot study was conducted to check if there were any problems in understanding the questionnaire. Pilot questionnaires are small scale "trial runs" of a larger questionnaire. It is suggested to run pilot questionnaire before embarking on the main data collection exercise (Veal, 2005). The size of pilot study may range from 25 to 100 subjects, yet the respondents need not to be selected statistically (Cooper & Schnidler, 2008). Reliability test was conducted to check 'the stability and consistency with which the instrument measures the concepts and helps to assess the goodness of a measure' (Sekaran, 2003). It is the property of a measurement device that causes it to yield similar outcome or results for similar inputs. Cronbach's alpha, developed in 1951 measures reliability with alpha that is a lower bound for the true reliability of the questionnaire.

Table 3.4
Cronbach's Alpha Results

	Cronbach's alpha
Expected Utility Theory	0.764
Market Factors	0.759
Prospect Theory	0.813
Heuristics	0.814
Herding Theory	0.789
Perceived Personal Investment Behavior	0.768

The reliability tests above indicates that all the items for each dimension is above 0.7 which is considered to be high and is the widely accepted limit for high reliability tests.

3.9 Conclusion

This chapter identified the research framework, design and approach. Four hypotheses were developed. The relevant operational variables were defined along with their measurement using the nominal scale, ordinal scale, 5-point Likert scale, and the 3-point Likert scale. The method of data collection which includes the sampling instrument and size were validated. Finally, this chapter presented the plan for presentation and analysis of the data collected.

CHAPTER FOUR

RESEARCH FINDINGS AND ANALYSIS

4.0 Introduction

This chapter present the findings of the study based on the data collected from the questionnaires distributed. The data is analyzed using Statistics Package of Social Science (SPSS) program to run descriptive analysis and Analysis of Variance (ANOVA).

4.1 Establishing Validity

Validity refers to whether the statistical instrument measure what is intended to measure, i.e. accuracy of measurement 9 Sullivan T.J. 2001; Saunders et al. 2000 - 2007). Validity can internal or external.

Face Validity is investigating whether there is a logical relationship between the variables and the proposed measure. It is a subjective validity that cannot be used to ascertain the validity of the results. For face validity in this study, it was logical to us to measure millennials behaviors using questionnaire-based survey.

Content validity is the measure of how representative the instrument and the sample is of the values that are being measured and validity can be ascertained through the feedback

and opinions of experts. The questionnaire for this study was reviewed with supervisor to review its content validity.

Criterion validity is done by providing evidence for the correlation between the instrument and another criterion in the study. If the instrument is measured with some other similar instrument that has been developed and tested to be valid, then such comparison is termed con-current validity. In this study, the questionnaire developed was compared with other similar validated questionnaires that have been developed and used in several studies. This was to ensure that the items in the questionnaire match up with the validated ones.

Construct validity looks at the instrument and how it fits in with the theoretical framework of the study in order to ensure that the hypotheses that are proposed actually relate to the theory. Thus, the instrument must be rooted in conceptual or theoretical bases discovered through revision of existing literature. In this work, this construct validity was ensured by deriving the determinants of millennials behaviors towards investments from Luong and Thu Ha (2011) as summarized in Table 4.2 Behavioral Factors Influencing Decision-Making of Investors:

Table 4.1
Behavioral Factors Influencing Decision-Making of Investors (Luong & Thu Ha, 2011)

Group	*Behavioral variables*
Heuristic Theory	- Representativeness - Overconfidence - Anchoring - Gambler's fallacy - Availability bias
Prospect Theory	- Loss aversion - Regret aversion - Mental accounting
Market	- Price changes - Market information - Past trends of stocks - Fundamentals of underlying stocks - Customer preference - Over-reaction to price changes
Herding Effect	- Buying and Selling decisions of other investors - Choice of stock to trade of other investors - Volume of stock to trade of other investors - Speed of herding

External Validity provides evidence to the extent to which the results of a study could be generalized. In this work, to ensure external validity, the findings and results will be generalized to the Malaysian settings and specifically to the millennials investors across Malaysia.

4.2 Demographics of Respondents

Since the characteristics of the respondents influences the results, we present descriptive data of respondents.

The respondents' genders as displayed in table 4.2 indicated that the male were more than the females. Figure 4.1 highlights 64% out of 200 responses were filled by males and 36% by females.

Table 4.2
Gender Frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	128	64	64	64.0
	Female	72	36	36	100.0
	Total	200	100.0	100.0	

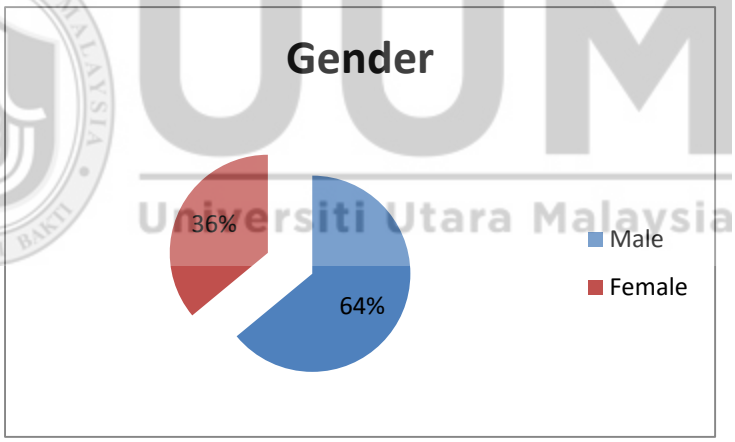

Figure 4.1
Percentage of Male to Female Investors

Table 4.3 below shows the respondents' age. It is obvious that most respondents in the age frame of 20 – 30 years old were slightly more than respondents in the age of 31 – 40 years old. This provides evidence that there was a good representation of genders in the sample.

Table 4.3
Age Frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 - 30 years. old	113	56.5	56.5	56.5
	31 - 40 years. old	87	43.5	43.5	100.0
	Total	200	100.0	100.0	

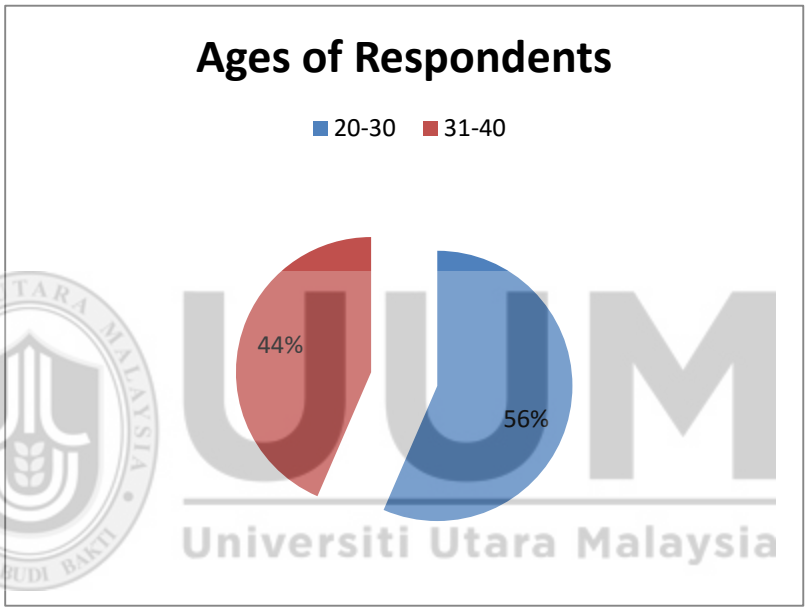

Figure 4.2
Ages of Respondents

Table 4.4 depicts the respondents' occupation. We notice that each sector or occupation took certain percentage of the results which shows that the questionnaire was not focused on one occupation but was tested on several levels such as student, private and public sector employees, business owners and other (retired, in-between jobs, and freelance consultant).

Table 4.4
Occupation Frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student	50	25.0	25.0	25.0
	Private sector employee	97	48.5	48.5	73.5
	Government sector employee	42	21	21.0	94.5
	Business owner	11	5.5	5.5	100.0
	Other	0	0	0	0
	Total	200	100.0	100.0	

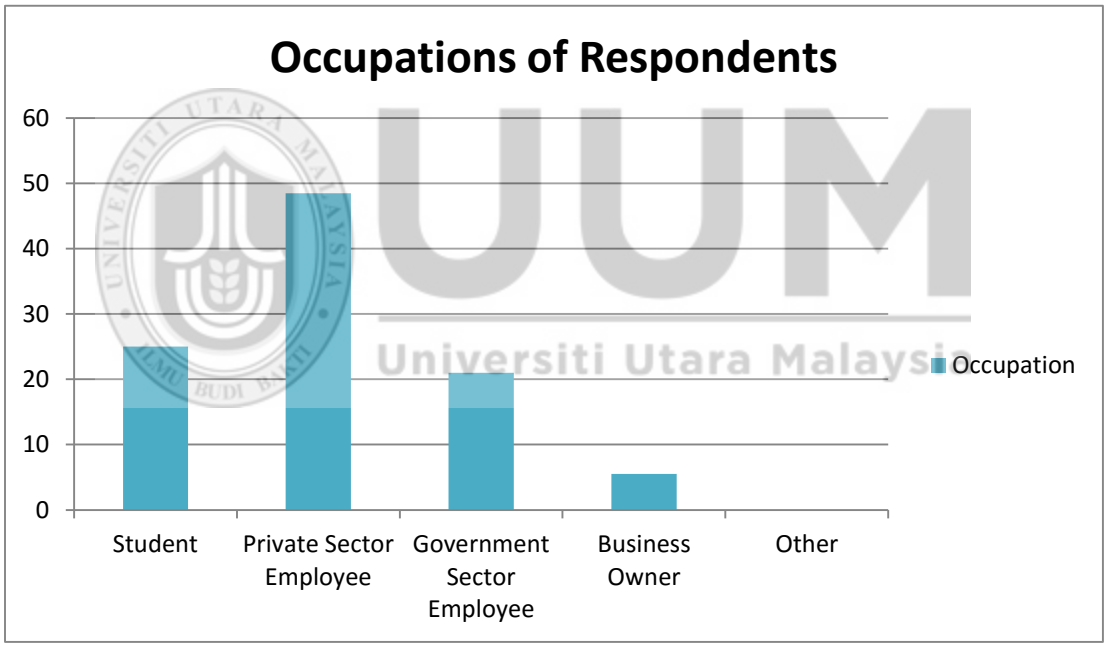

Figure 4.3
Occupations of Respondents

Table 4.5 depicts respondents' level of education. All the respondents were educated and more than half of the respondents or 74% had a bachelor's degree and only a small number (3.5%) had only SPM or STPM. Based on this, it can be concluded that the respondents

comprise of those who are educated. Therefore, they should be able to understand the purpose of participating in this study.

Table 4.5
Education Frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SPM or STPM	7	3.5	3.5	3.5
	Bachelor's degree	148	74.0	74.0	77.5
	Master's degree	42	21.0	21.0	98.5
	PhD or higher	3	1.5	1.5	100.0
	Total	200	100.0	100.0	

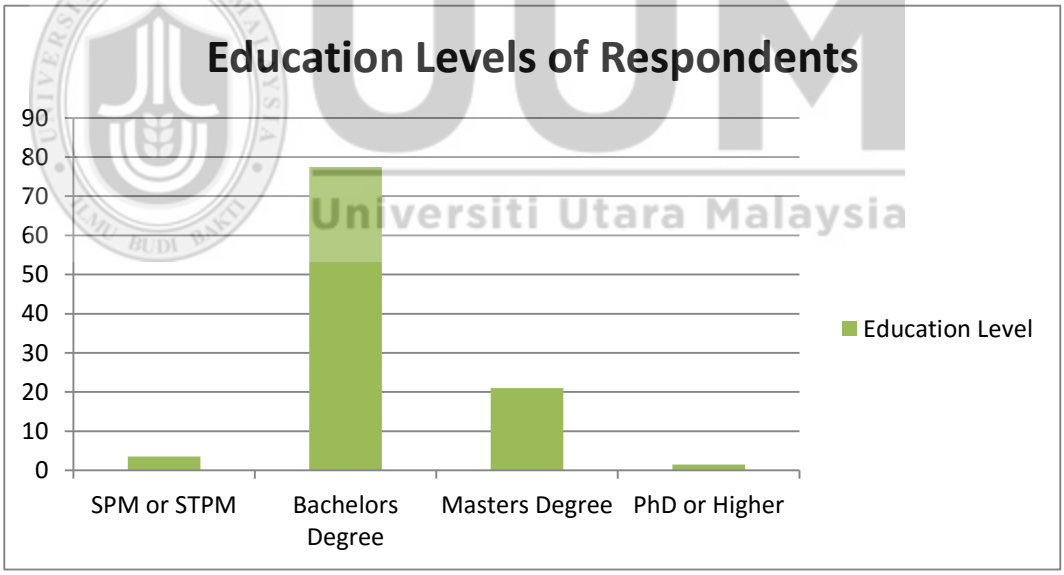

Figure 4.4
Education Levels of Respondents

4.3 Cross Tabulation

From the below table we can see that out of 200 respondents, 113 hold 1 to 2 years of the experience in which 38 of are male and 23 are female, as for respondents holding 3 to 5 years of experience, 32 of them are female and 62 are male. 5 – 10 years of experience holders are 34 and 13 of them are females. As for really experienced investors with over than ten years of investing experience, they are 11 in which 4 are females and 7 are males. This table concludes that the majority of the millennials surveyed held 1 to 5 years of investing experience and lower numbers were involved intensively in investments. Also, that both males and females mostly hold 3 – 5 years of experience, which is the period of the commitment most of them felt comfortable with.

Table 4.6
*Gender * Years of Investing Experience Cross Table*

		How many years of investing experience do you have?				Total
		1 - 2 years	3 - 5 years	5 – 10 years	Over Ten Years	
	Female	23	32	13	4	72
	Male	38	62	21	7	128
Total		61	94	34	11	200

From Table 4.7 we can see that, between 20 and 30 years old, mostly held 1 to 5 years of experience, while 30 to 40 years old group included people who held more than ten years of experience which is logical due to the age and the experience of each age group.

Table 4.7
*Age * Years of Investing Experience Cross Table*

		How many years of investing experience do you have?				Total
		1 - 2 years	3 - 5 years	5 – 10 years	Over Ten Years	
	20 - 30 years old	44	58	11	0	113
	31 - 40 years old	17	36	23	11	87
Total		61	94	34	11	200

From Table 4.8 we can see business owners seem to be least interested in investing which makes sense since they are budget for investments might be oriented towards their own startups and operations. We notice that a high number of respondents hold 3 to 5 years of experience, most of which are business sector employees.

Table 4.8
*Occupation * Years of Investing Experience Cross Table*

		How many years of investing experience do you have?				Total
		1 - 2 years	3 - 5 years	5 – 10 years	Over Ten Years	
	Student	15	24	8	3	50
	Private sector employee	32	41	17	7	97
	Government sector employee	11	21	9	1	42
	Business owner	2	8	0	0	11
Total		61	94	34	11	200

From Table 4.9 we can see that people holding Bachelor's and Master's degree are most interested in investments, however college graduates low numbers might be due to the risk factor and the lower level of education. PhD or higher degree holders are few and this can be due to the age factor considered which people who consider getting PhD's in are a minority.

Table 4.9
*Education * Years of Investing Experience Cross Table*

		How many years of investing experience do you have?				Total
		1 - 2 years	3 - 5 years	5 – 10 years	Over ten years	
	College graduate	2	3	0	2	7
	Bachelor's degree	48	67	26	7	148
	Master's degree	11	23	6	2	42
	PhD or higher	0	1	2	0	3
	Total	61	94	34	11	200

4.4 Descriptive Analysis

Every respondent was asked to rate the influence level of different factors that determine their behavior towards investments. The questionnaire had a five-point likert scale "Least Influential", "Influence", "Neutral", "Strongly Influence" and "Completely Influence" and a three point likert scale "Agree", "Neutral", "Disagree". Table 4.11 shows a descriptive analysis of the measures used in the questionnaire.

Table 4.10
Descriptive Analysis of Questionnaire

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Standard Deviation
Market Factors					
Stock affordability	200	2	5	3.80	.997
Expected dividends	200	2	5	4.16	.817
Personal intuition	200	1	5	3.35	1.413
Minimizing risk	200	1	5	3.51	1.371
Investment trends	200	1	5	3.93	1.234
Expected corporate earnings	200	1	5	3.61	1.344
Dividend paid	200	1	5	2.88	1.406
Availability of financial information	200	1	5	3.61	1.374
Stock marketability	200	1	5	3.10	1.332
Economy and financial health of the country	200	1	5	2.85	1.374
Prospect Theory					
Religious reasons	200	1	5	2.64	1.353
Firm's compliance to Shariah Law	200	1	5	3.51	1.356
Preference for a firm's product and services	200	1	5	3.63	1.350
Number of people investing in the stock	200	1	5	3.69	1.313
Contribution of a firm toward social causes	200	1	5	3.61	1.227
Perceived risk of loss	200	1	5	3.37	1.365
Heuristics					
Current economic indicators	200	1	5	2.40	1.345
Information obtained from internet and existing shareholders.	200	1	5	3.59	1.269
General and financial press coverage of the firm's stock.	200	1	5	3.64	1.315
Investing More in Existing Investment Portfolio	200	1	5	3.67	1.320
Confidence in your investing ability	200	1	5	3.68	1.369
Recent price movement of a firm's stock	200	1	5	3.64	1.273
Herding Theory					
Family member's opinion.	200	1	5	4.05	1.241
Friend/ coworker's opinion.	200	1	5	3.98	1.196

Opinions of the firm's majority stockholder.	200	1	5	2.64	1.112
Broker's recommendation for stock.	200	1	5	3.63	1.323
Perceived Personal Investment behavior					
I take into account expected losses of Investment before Investing	200	1	3	2.43	.654
I invest in a diversified portfolio.	200	1	3	1.62	.773
Usually I get my expected return on my investment decision.	200	1	3	1.80	.800
I am more concerned with long-term investments.	200	1	3	1.68	.721
In most cases my investment decisions match my investment objectives.	200	1	3	2.28	.798
I take risk seriously before Investing	200	1	3	2.30	.735
My reactions towards losses are normal.	200	1	3	2.32	.807
I am more rational as an investor than emotional.	200	1	3	2.44	.761

The determinant was set between influential and not influential to be the mean of 3. Above 3 means the factors are of high influence on the millennials, below 3 means it is of least influence. The mean scores of the respondents ranged from 1.62 and 4.16. The items with the least influence are more found in the perceived personal investment behavior as well as current economic indicators, opinions of the firm's majority stakeholders, dividend paid, Economy and Financial Health of the Country and religious reasons. This also indicates that responders are greatly affected by Market Factors such as stock affordability and personal intuition, as well as prospect theories such as the number of people investing in

the stock. Also, heuristics and Herding theory such as confidence in your investing ability and opinions of family members.

The standard deviation (SD), measures the deviation from the standard. A low standard deviation means that the data points are very close to the mean; a high standard deviation means that the data points are spread out over a large range of values. In the table above we notice that the standard deviation has an average of 1.1 which is considered high and means that that the data points are spread out over a large range of values.

Table 4.11 shows the average mean for each category which all range around 3.2 and 3.7. This score indicates rather high influence in most factors except the perceived personal investments behavior.

Table 4.11
Dependent Variables Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Expected Utility theory	200	1	5	3.749	1.166455
Market Factors	200	1	5	3.209	1.365887
Prospect Theory	200	1	5	3.406667	1.327328
Heuristics	200	1	5	3.435	1.315295
Herding Theory	200	1	5	3.57625	1.218099
Perceived Personal Investment Behavior	200	1	3	2.110625	0.75621

4.5 Factor Analysis of Behavioral Variables Influencing the Individual Investment Decisions and Investment Performance

The first four sections of the questionnaire were designed to explore the levels of behavioral variables' impacts on the individual investment decisions; whereas questions from the last section are designed to identify the evaluation of investors about their own investment performance.

The exploratory factor analysis (EFA) is used for the behavioral variables and investment performance to ascertain the factors that these variables belong to. After revision in order to remove the variables which are unsuitable, the analysis results in variables which are grouped into six factors (five factors of behavioral variables and one factor of investment performance), at the Eigenvalue = 1.007, KMO = 0.708 (sig. = 0.000), % of total variance explained = 65.5%, and all factors loadings are more than 0.5. These indexes prove that factor analysis for these variables is totally suitable and accepted. The result is offered in the table below:

Table 4.12
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.708
Bartlett's Test of Sphericity	Approx. Chi-Square	1046.953
	Df	153
	Sig.	0.000

Table 4.13
Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	3.68	20.469	20.469
2	2.8	15.537	36.006
3	2.23	12.374	48.38
4	1.53	8.494	56.874
5	1.05	5.857	62.731
6	1.01	5.593	68.324
7	1.86	4.79	73.115
8	1.72	4.002	77.117
9	2.65	3.617	80.734
10	3.59	3.261	83.995
11	2.53	2.928	86.923
12	1.97	2.634	89.557
13	3.43	2.359	91.916
14	1.38	2.118	94.034
15	2.35	1.92	95.954
16	1.89	2.529	97.553
17	2.25	1.394	98.927
18	2.19	1.073	100
19	1.73	2.928	86.923
20	1.47	1.634	89.557
21	2.43	2.369	91.916
22	1.38	2.118	94.034
23	2.55	3.482	95.954
24	2.29	1.599	97.553
25	2.25	4.314	98.927
26	1.53	2.958	86.923
27	1.47	1.634	89.557

Since the Eigen value is greater than one, then all factors have a good variation contained in the data and with a high variance the factors confirm the factorial validity. It is important

to ensure that the variance is high as it confirms the validity of the data which forms the backbone of the analysis.

Table 4.14
Rotated Component Matrix

	Component					
	1	2	3	4	5	6
Stock affordability		0.817				
Expected Dividends		0.786				
Personal Intuition		0.655				
Minimizing Risk		0.805				
Investment Trends		0.607				
Expected Corporate Earnings						
Availability of Financial Information		0.662				
Stock Marketability		0.505				
Economy and Financial Health of the Country		0.679				
Firm's Compliance to Shariah Law			0.758			
Preference for a Firm's Product and Services			0.881			
Number of people investing in the Stock			0.726			
Contribution of a Firm Toward Social Causes			0.873			
Perceived Risk of Loss			0.697			
Information obtained from internet and existing shareholders.	0.794					
General and financial press coverage of the firm's stock.	0.882					
Investing More in Existing Investment Portfolio	0.789					
Confidence in your investing ability						0.763
Recent price movement of a firm's stock						0.81

Family member's opinion.				0.701		
Friend/ coworker's opinion.				0.821		
Opinions of the firm's majority stockholder.				0.632		
Broker's recommendation for stock.				0.745		
Perceived Personal Investment behavior					0.733	
I take into account expected losses of Investment before Investing					0.783	
I take risk seriously before Investing					0.72	
I am more rational as an investor than emotional.					0.83	

As shown in the table above, the variables are grouped into related factors. Some of the variables were removed because after repetitive analysis their factor loadings were less than 0.5 which means they were not of great effect on the respondents.

The internal consistency of the items used to measure each factor was calculated using Cronbach's alpha, which is the procedure of choice for investigating the internal consistency of items using Likert-type scale (Walsh & Betz, 1995). Cronbach's alpha for each factor was: Heuristic, Market, Prospect, Herding, Personal behavior were respectively, 0.814, 0.759, 0.813, 0.789, 0.768 which are greater than 0.60 which according to Glinger & Morgan demonstrates reliability which confirms that consistency is at an acceptable level for each factor.

4.6 Impact Levels of Behavioral Factors on the Individual Investment Decisions

The impact levels of behavioral variables on the investment decisions are identified by calculating the values of sample mean of each variable:

- Mean values are less than 2 shows that the variables have very low impacts
- Mean values are from 2 to 3 shows that the variables have low impacts
- Mean values are from 3 to 4 shows that the variables have moderate impacts
- Mean values are from 4 to 5 shows that the variables have high impacts

Table 4.15
Impact Levels of Behavioral Variables

	Mean	STD	Impact
Expected Utility Theory			
Stock affordability	3.14	0.817	Moderate
Expected Dividends	4.13	0.786	High
Personal intuition	3.97	0.655	Moderate
Minimizing risk	4.76	0.805	High
Investment trends	2.18	0.607	Low
Market Factors			
Expected Corporate Earnings	2.35	0.845	Low
Availability of financial information	2.89	0.662	Low
Stock Marketability	3.56	0.505	Moderate
Economy and Financial Health of the Country	4.66	0.679	High
Prospect Theory			
Firm's compliance to Shariah Law	3.23	0.859	Moderate
Preference for a firm's product and services	3.87	0.734	Moderate
Number of people investing in the stock	4.76	0.708	High
Contribution of a firm toward social causes	2.93	0.683	Low
Perceived Risk of Loss	3.15	0.858	Moderate
Heuristics			
Information obtained from internet and existing shareholders.	2.44	0.832	Low

General and financial press coverage of the firm's stock.	4.88	0.607	High
Investing more in existing investment portfolio	4.29	0.881	High
Confidence in your investing ability	4.28	0.756	High
Recent price movement of a firm's stock	3.57	0.753	Moderate
Herding Theory			
Family member's opinion.	4.29	0.765	High
Friend/ coworker's opinion.	4.29	0.880	High
Opinions of the firm's majority stockholder.	4.98	0.854	High
Broker's recommendation for stock.	4.68	0.829	High
Perceived Personal Investment Behavior			
I take into account expected losses of investment before investing	3.23	0.758	Moderate
I invest in a diverse portfolio	2.41	0.680	Low
Usually I get my expected return on investment decision.	4.08	0.853	High
I am more concerned with long-term investments	3.87	0.727	Moderate
In most cases, my investment decisions match my investment objectives	2.59	0.646	Low
I take risk seriously before investing.	3.75	0.798	Moderate
My reactions towards losses are normal.	4.51	0.874	High
I am more rational as an investor than emotional.	4.42	0.816	High

From the findings, it is concluded that Herding factors have high to very high impacts on individual millennials investors' decision making. In accordance to the literature outlined in chapter two which highlights the importance of behavioral factors and their role in influencing the investment decision, the behavioral variables impact the investment decision in ways that the Utility Theory and Market Factors do not. Hence, these findings provide further evidence to support the growing literature which asserts that behavioral factors have a bigger influence on investment decision than traditional financial factors such as Utility Theory and market factors.

Table 4.15 shows that Malaysian investors in Kuala Lumpur are very keen on financial returns and invest heavily for financial gains, even if they are sometimes unsuccessful and make the wrong investment decision. This can be seen in Perceived Personal Investment Behavior part (I take into account expected losses of investment before investing, 3.23) Stock affordability (3.14) and expected dividends (4.13) have moderate to high impact. In addition, under market factors, the economic and financial health of the country has a high impact (4.66), hinting that investors are very concerned in times of economic crisis or turbulence to invest. Thus it can be said that financial factors which are relevant to returns on investment have moderate to high impact on investment decision and thus play a important role in the investment decision-making process.

Figure 4.5 illustrates the difference between the behavioral factors and their impacts on investor decision-making. Specifically, it shows what factors have greater influence on the investors' decision in Kuala Lumpur.

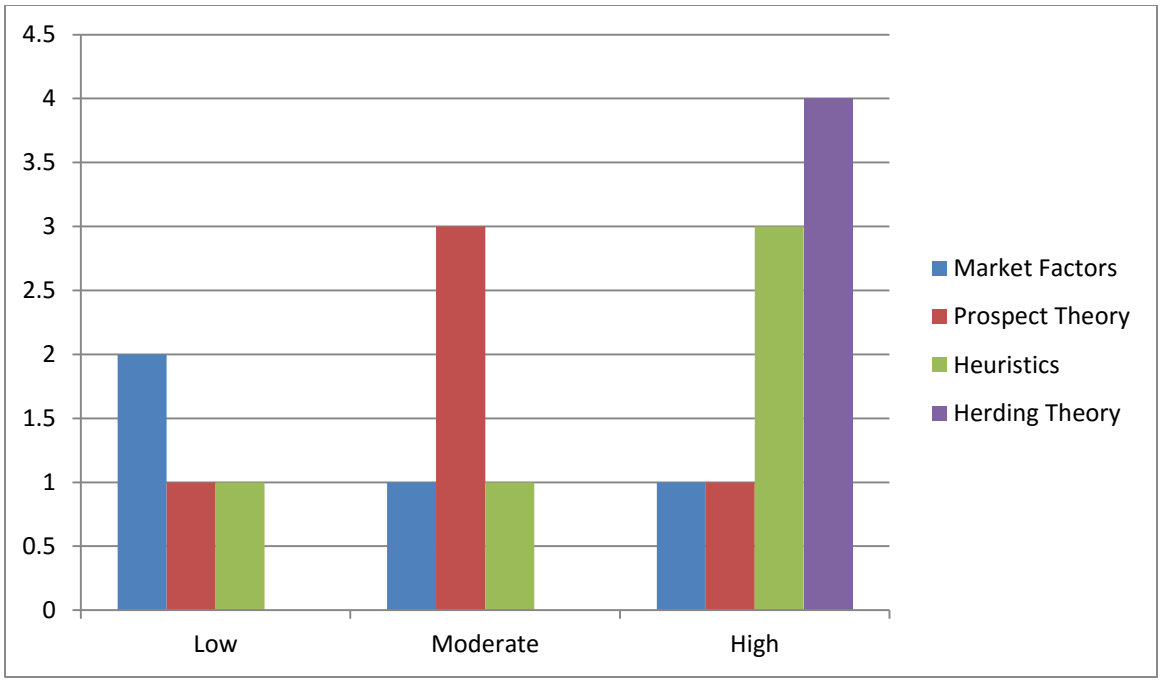

Figure 4.5
Comparisons of Impacts of Behavioral Factors on Investment Decision

Table 4.15 above highlights that market factors impact at mostly low levels and thus it is concluded that market factors have low impact on investment decision. Prospect theory plays a role in behavioral investment decision-making at moderate levels and impacts investor decisions at relatively moderate levels. Heuristics and Herding Theory play the most crucial roles in investment decision, impacting decision at relatively high levels. This means that Heuristics which includes press coverage (availability bias), investing in existing portfolio (gambler's fallacy) and confidence in one's investing ability (overconfidence) highly influence investment decision. In addition, Herding Theory shows the most impact on investment decision, with no low or moderate impacts at all, but all high impact. Herding Theory includes taking the opinions of family, friends, coworkers, brokers and stakeholders. From this analysis we conclude that Malaysian investors in Kuala

Lumpur are heavily influenced by others in their investment decision and provide further evidence to support the findings of Kim and Nofsinger (2008) which claim that Asian investors are biased towards their collectivistic culture which puts the community ahead of their individuality.

The findings of the perceived investment behavior highlight that investors believe themselves to be moderately loss averse, highly overconfident, moderately risk averse, highly normal in reaction to losses, and highly rational.

4.7 Discussion of Hypothesis Testing

The findings of the study are used to prove or disprove the hypotheses mentioned in chapter three and the beginning of this chapter. A summary is presented where the findings major support on H1. The behavioral factors which include prospect theory, market factors, heuristics and herding do influence investor decision highly. However, it is also found that investors take into consideration the return on investment under Expected Utility Theory and thus traditional finance in terms of return on investment plays a big role in investment decision. Next, the findings only partially support H2 where Expected Utility factors affect at moderate levels especially when related to return on investment. Behavioral factors under market factors affect investor decisions at relatively low levels. Prospect theory factors impact investors at relatively moderate levels. The behavioral factors with the highest impact are Heuristics and Herding being the most influential factor in investment decision of investors. Moreover, the findings only partially support H3. Only Heuristics and Herding have positive impacts with the remaining behavioral factors having moderate

to low impact on investment behavior. In addition, the findings support H4. The analysis of perceived investment behavior showed that investors believe highly that they are rational investors influenced more by traditional finance than behavioral finance however the study into the impact of behavioral factors on investment decision highlight that investors' belief that they are rational is not actionable. The investors are heavily influenced by Heuristics and Herding and thus cannot be deemed rational investors.

Behavioral factors are seen to impact investment decision however Expected Utility Theory in terms of expected returns, stock affordability and minimizing risk show moderate to high influence. This suggests that although behavioral factors may play a role in investment behavior, the investors are not completely emotional beings and are concerned about financial and rational matters such as their return on investment.

The variables of market factors show that among the variables of market factors which include expected corporate earnings, availability bias, stock marketability, and the economic and financial health of the county, the last factor (mean= 4.66) has the highest impact. This means that the respondents are very aware of the economic status of Malaysia and take it into consideration when choosing to invest. The high influence of market factors may be linked to the demographics of the participants which showed that they were educated and thus are made aware of the importance of economic factors when choosing to invest.

The Prospect Theory factors which include compliance of the company to the local law, preference for a product or service of a firm, number of people investing in the stock, contribution of a firm towards social causes, and loss and regret aversion shows that most

of the factors have low to moderate impact, with the number of people investing in the stock having the only high impact of the group (mean=4.76). This hints that herding seems to play a crucial role in investment behavior. It is the first indication that Malaysian investors in Kuala Lumpur may not always rely on sources that are expert in the financial field. In addition, it shows through the moderate impact that investors are influenced by their own aversions to loss and regret which are more psychological biases rather than rational, financial ones.

Under Heuristics, it can be seen that availability (mean=2.44) is quite low in impact and thus Malaysian investors in Kuala Lumpur are not readily swayed in their investment decision by information that is readily available to them through accessible sources. However, Anchoring, which is represented through the impact of media and press coverage of a firm's financial health of its stocks, seems to have the highest impact on investment decision (mean= 4.88). This shows that Malaysian investors in KL readily believe the media as a source of credible information and make future estimates on present media portrayal of a firm's stock. Gambler's fallacy also is high (mean=4.29) shows that investors continue to pour more money into existing stock in hopes of regaining what was lost. Overconfidence also shows high impact (mean=4.28) portrays that investors have high confidence in their investing ability and that could cause problems in the future as financial analysts may have more investing skills and experience and the advice of a broker could be more useful than simple confidence in one's skill.

Herding Theory has the highest impact of all behavioral factors. Four different groups were analyzed: family members (mean= 4.29), friend or coworkers (mean= 4.29), firm's majority stockholder (mean= 4.98), and brokers (mean= 4.68). It can be seen that

Malaysian investors in Kuala Lumpur are very much concerned about what other investors are doing and are keen to take advice from family and friends when about to take an investment decision. The group with the highest impact is the majority stockholders (mean= 4.98). This shows that Malaysian investors in Kuala Lumpur trust the advice of stockholders, highlighting that there is a more rational perspective to the influence, being that the stockholder has more experience and information regarding the stock than other influencing voices such as family and friends. It can be concluded that herding is very strong in Malaysian investors who carry the values of family and community close to their heart even when making investment decisions.

On the findings of investment performance, the perceived investment behavior of Malaysian investors in Kuala Lumpur show that investors believe themselves to be more rational (mean= 4.42) than the findings of this study, which hold them to be highly influenced by behavioral factors of Heuristics and Herding. Investors do not invest in a diverse portfolio (mean= 2.41) and the investment decisions are mismatched with their objectives (mean= 2.59). This already highlights the more psychological aspect of investment as they are not investing in diverse portfolios and are not matching their investment decisions with their objectives. In addition, it is shown that loss (mean= 3.23) and risk (mean= 3.75) aversion plays a role in the investment decision. This means that while high risk-high return is the basic understanding of finance, Malaysian investors in Kuala Lumpur are more concerned about losing their money and making bad investments. They also feel that their reactions towards losses are normal (mean= 4.51) which highlights that investors may believe that their risk and loss aversion attitudes are not out of the ordinary and that the impact of behavioral factors go unnoticed by the investors. The

findings of the study reveal that there are high positive impacts of behavioral factors on investors and thus their perception of themselves as rational does not truly stand in light of the study.

4.8 Conclusion

This chapter presents the findings and the analysis of the findings of this study. SPSS was used as the basic quantitative analysis tool and the data was tabulated and put into visual representations in order to better compare the results of the findings. The hypothesis were tested, revealing that behavioral factors, mostly Heuristics and Herding, play a crucial role in influencing investment decision; however Expected Utility Theory also plays a role whereby Malaysian investors in Kuala Lumpur take into account the economic and financial wellbeing Malaysia before making the investment. In addition, it is revealed that Malaysian investors in Kuala Lumpur perceive themselves to be more rational than they actually are, as they are highly impacted by Heuristic and especially Herding factors in their investment behavior. Nevertheless, the behavioral finance theory's factors such as Heuristics and Herding have a greater impact compared to traditional finance theory's factors. In addition, the finding indicates that Malaysia investors in Kuala Lumpur perceive themselves to be more rational than the evidence indicated.

CHAPTER FIVE

CONCLUSION

5.0 Introduction

This chapter summarizes the findings of this study. The chapter also provides some recommendations for Malaysian investors in making their investment decisions. Lastly, recommendations for future studies are presented in the last section.

5.1 Conclusion

This study has provided answers for all of the research questions raised in the first chapter ensuring that the hypotheses have been tested and the research objectives are met. The findings of this study indicate that there are a number of factors which influence the investment decisions. In particular, both traditional finance theory and behavioral finance theory's factors affect the respondents' investment decision. The study has revealed that although behavioral finance factors such as market factors, Prospect Theory, Heuristics, and Herding Theory have greater influence on investment decision, traditional finance factors such as Expected Utility Theory, specifically one related to return on investment, still play a great role in investment decision. This finding suggests that although behavioral finance is important to study in terms of its influence on investment decision, the goal of

making money, which lies in traditional finance factors, still contribute towards the final investment decision taken by the investors.

Secondly, the behavioral factors which are taken into consideration from previous literature on behavioral finance are grouped into four categories: Market factors (expected earnings of the company, availability bias, stock marketability and economic and financial health of the country); Prospect Theory (compliance to law, preference to goods and services offering, number of people investing in the stock, corporate social responsibility and risk and loss aversion); Heuristics (reputation of stock, press coverage of stock, gambler's fallacy, overconfidence and price movement of stock); and Herding (opinions of family, coworkers, friends, majority stockholder and broker's recommendation). The findings of the study highlight that Heuristics and Herding carry the highest influence in affecting investment decision whereas Prospect theory has moderate impact on investment decision. Market factors are found to have low impact on investment decision. This reveals that Malaysian investors in Kuala Lumpur are true to their collectivistic culture which cares deeply about community and thus Herding Theory is the greatest influencer on investment behavior. The findings support H1 to a certain extent, offering evidence that behavioral factors play an important role in influencing investor decision. It also supports partially H2, highlighting that certain behavioral factors such as those of Heuristics and Herding Theory do impact investment decision. Finally, it also partially supports H3, revealing that only the factors under Heuristics and Herding positively impact investment decision whereas the factors under Market Factors and Prospect Theory offer negative to no impacts respectively.

Next, the findings also provide evidence that investors perceive to be more rational than they are in action. This supports H4 which claims that Malaysian investors in Kuala Lumpur perceive themselves to be rational rather than emotional investors. The findings conclude that while Malaysian investors in Kuala Lumpur are rational enough to consider traditional financial theory factors, namely return on investment, they are more prone to being emotional investors who are heavily influenced by Heuristic and Herding Theory factors. The highest influence on the investors are those of Herding Theory, indicating that the psychological and social influence on investment decision is more than the rational, quantitative factors supported by traditional finance theory.

5.2 Recommendations for Malaysian Investors

There is great potential for Malaysian investors to learn from this study and find it a significant insight into the psychological and social factors which affect investing behavior. It proves that investors tend to be influenced by behavioral factors which may not be at first understood or perceived by the investor. As knowledge is power, investors may be able to mitigate the harm done by investing only under the influence of behavioral factors.

While overconfidence may sometimes hinder the investment potential, in the case of Malaysian investors who are prone to Herding, overconfidence may be a useful quality in ensuring that the correct investment is done instead of relying on the advice and suggestions of friends and family who may not know better.

Gambler's fallacy is also seen to be highly impacting investment decision and that should not be the case. Malaysian investors may learn that sometimes investing more in an existing stock is not the solution to an investment which has caused them to lose money. This is because gambler's fallacy leads to the loss of more money as investors attempt to regain money which has been lost in an already non-profitable venture.

Herding has been shown to play the highest role in influencing investment decision. Better education must be given to Malaysian investors on the penalties of following what other people who may not know any better than the investors themselves are suggesting. This is because most people lack financial knowledge which is crucial when taking a financial decision which is meant to be profitable.

Finally, the study has provided evidence that Malaysian investors in Kuala Lumpur perceive themselves to be more rational as investors than they actually are. It is recommended that investors take a closer look at their investing behavior and identify what the key factors influencing their investment decision are in order to ensure that the investors are making more rational, financially profitable investment decisions rather than one based on socio-psychological factors.

5.3 Recommendations for Future Studies

This research was conducted despite the limitation of sample size. It is recommended that future evidence be provided by research with a greater sample size. In addition, the study does not take into account micro-racial factors such as the three races of Malaysia being

Malay, Chinese and Indian. Future studies can look at demographic variations and compare the investor behavior across the three races in Malaysia. Another suggestion is that future research can also look into Malaysia as a whole, rather than just Kuala Lumpur, or compare the investment behavior of investors across the peninsula. Finally, future studies can look into the different kinds of investments available for investors to choose from and study the impact of behavioral factors across the different kind of investment venues.

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