FINANCIAL PLANNING AND FINANCIAL LITERACY OF MALAYSIANS IN KLANG VALLEY

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A research project submitted in partial fulfillment of the requirement for the degree of

BACHELOR OF ECONOMICS (HONS) GLOBAL ECONOMICS

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF ACCOUNTANCY AND MANAGEMENT

DEPARTMENT OF ECONOMICS

NOVEMBER 2014

DECLARATION

We hereby declare that:

(1) This undergraduate research project is the end result of our8 own work and that due acknowledgement has been given in the references to ALL sources of informationbe they printed, electronic, or personal.

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

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

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ACKNOWLEDGEMENT

With the assistance and cooperation of various authorities, this research project has been successfully carried out. Thus, we would like to express our sincere thankfulness to those people who guided, assisted and supported us in completing this research.

First and foremost, we would like to thank Universiti Tunku Abdul Rahman (UTAR) for giving us the opportunity to take part in the research project. During the research, we gain a lot of knowledge, experience and expose to circumstances which could not be learnt elsewhere and it would be absolutely helpful in the future.

Secondly, we would like to express our greatest appreciation to our respectful supervisor, Ms. Pok Wei Fong for her continuous guidance, supervision and time throughout the completion of this research study. Without her supervise, we may not complete our research report in the time given. Furthermore, we also wish to thank her for providing us useful sources and website that could enhance our research quality. Her persistent and guidance ensured the research to be on the right way and carried on smoothly. We sincerely appreciate what she had done to guide us.

In addition, we would like to express our gratitude to Ms Low Mei Peng who was the second supervisor for giving us necessary information regarding the research project. Hence, we would like to express our greatest appreciation to her.

Moreover, we are very grateful to our respondents who willing to spend their precious time to complete the questionnaire and provide us valuable data for the research. Their collaboration made our work easier in form of collecting and analyzing the data. Last but not least, our deepest appreciation to our group members for their tolerance and commitment and family members and friends who had supported us to the end of this project.

DEDICATION

This dissertation is dedicated to:

University Tunku Abdul Rahman,

For giving us the chance to conduct the research project.

Ms. Pok Wei Fong,

Supervisor who has motivated and monitored us throughout the research project.

Ms. Low Mei Peng,

Second supervisor who provided us the adequate of essential information regarding the research project.

Respondents,

People who willing to spend their valuable time to complete the questionnaire of the research study.

Team Members,

Four group members who cooperate well with each other during the research project.

Families and friends,

For your caring.

Thank you.

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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
EPF	Employees Provident Fund
Et al.	And others
ETP	Economic Transformation Programme
HDI	Human Development Index
KWSP	Kumpulan Wang Simpanan Pekerja
Scash	Sum of Cash and credit
Sestate	Sum of Estate Planning
Sinsurance	Sum of Insurance
Sinvest	Sum of Investment
Sretire	Sum of Retirement
Stax	Sum of Tax
Stotal	Sum of Total
Tgap	Total Gap
VIF	Variance Inflation Factor

PERFACE

This research topic has been chosen as financial planning is an important aspect in everyone's life. Financial planning is not just applicable to individuals that work in business-related field. It is an essential knowledge for everyone to make good financial planning with their given incomes, assets, liabilities and wealth. Whether age, gender, education, income level or financial literacy will show significance on financial planning in Klang Valley, this part needs to be explored. The interesting part of this study is that readers can also find out how self-perceived financial knowledge and actual financial knowledge can affect financial planning. Therefore, five variables will be tested to find the relationship with financial planning.

ABSTRACT

The financial planning of Malaysians in Klang Valley raised great concerns as people should grow in par as the country expands economically. Financial planning has been a famous aspect of various academicians. Financial planning is affected by various factors. Therefore, the research objective is to investigate the relationship of age, gender, education, income level and financial literacy on financial planning in Klang Valley. Both primary and secondary data were used in this research. The sample size of the research is 158 respondents. The targeted individuals were at least 21 years old with minimal financial knowledge in Klang Valley.

The independent variables of this study are age, gender, education, income level and financial literacy whereas the dependent variable is financial planning which is separated into credit and cash management, investment, risk management and insurance, tax planning, retirement planning and estate planning . Based on the findings of this research, age, type of education, income level and financial literacy significantly affect financial planning. However, gender does not show significant impact on financial planning which show inconsistence with numerous studies. Futhermore, self-perceived and actual financial knowledge gap are found to show significant result on financial planning.

Some conclusions can be drawn from this study. The results are generally consistent with various studies. However, some of the findings may vary due to the geographical border, sample size and questionnaire design. Researchers that are interested in this topic should focus on the suggested limitations for a better outcome. This study serves as background study and references for future studies.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

In this first chapter, readers can get an overview of this research through various sections such as discussion of background study, problem statement, research objectives and research questions, hypothesis and significance of study.

1.1 Research Background

In current economy that full of uncertainty, personal financial planning becomes important among individuals. With increasing alternatives of financial and investment products, managing a good financial plan become more difficult and challenging. As nation grows wealthier, financial structures would become more complex and individual's personal financial goal would change accordingly.

Good financial planning is linked to good personal retirement planning. In Malaysia, employees and employers are required to contribute 13% and 11% of salary, respectively to KWSP to secure employee's post retirement consumption. The saving amount of each individual is calculated based on the amount of their wages. The goal of EPF is to offer best retirement plans for Malaysians (Employees Provident Fund, 2014). Although there is Employees Provident Fund (EPF), many Malaysians still do not have enough savings for their post retirement consumption. They lack of proper retirement planning to sustain their life after retirement (Eugene & Wong, 2013). Individuals should have a good retirement

and financial planning otherwise they will have insufficient funds to spend once they receive lump sum amount from their EPF after retirement (Ibrahim, Isa & Ali, 2012).

On the other hand, financial literacy is required to make a good financial planning as financial literacy has positive impact towards personal financial planning (Lusardi & Mitchell, 2011; Hilgert, Hogarth & Beverly, 2003). Individuals that are financially literate manage and accumulate their wealth through different types of financial products in the market. Hence, individuals will be able to increase their standards of living and achieve their financial goals. Malaysian government has implemented several policies and agencies to empower individual's financial literacy. For example, Economic Transformation Plan (ETP) outlined a series of actions to improve financial sector in Malaysia such as increase access to financial products (Economic Transformation Programme, 2010), Financial Sector Blueprint emphasized on strengthen individuals financial capability and knowledge to protect their personal wealth through financial education institutions (Bank Negara Malaysia, 2011). Policies and actions imposed by government had shown the importance of financial literacy among individuals.

1.2 Problem Statement

As reported, the inflation rate in Malaysia is rising faster than expected (Grant, 2014). This indicates that Malaysians are more likely to encounter financial problems. Financial literacy proved to have positive impact on financial planning and management. This can be explained by financial knowledge helps individual to make better financial decisions through investment and savings (Sabri & MacDonald, 2010). Individual requires a quality financial planning in order to manage their personal wealth. Financial planning involves six major components which are credit and cash management, risk management and insurance, tax

planning, investment planning, retirement planning and estate planning. Individual with good financial planning will more likely to has enough money for his or her post retirement consumption (Ali, Rahman & Bakar, 2013).

In 2009, the Federation of Malaysian Consumers Association had reported that the public who had trapped into personal bankruptcy are mainly between the age of 20 and 30 (Chong & Lam, 2012). Moreover, with more sophisticated financial products and services in the market, the age for people declared bankrupt is getting younger (Cheng, Su & Li, 2006). This reflects that young adults are the largest consumer groups but at the same time they also suffered in credit cards debt due to overspending. Besides, Cameron et al. (2003) also revealed that, young adults have low level of financial literacy.

According to Chen and Volpe (2002), men are more financially knowledgeable as compared to women. Women are less confidence and less likely to seek for personal financial knowledge. On the other hand, men generally more confident in dealing with financial affairs and they may take risks even when it was a clear situation that it was not suitable to invest. Back in the olden days, women were less educated. They do not have to take the burden of raising their families financially.

In the recent years, Malaysian government has launched several programs under the concept of 1 Malaysia, in order to help the low income groups to improve their living standard and to have a financial guarantee. However, some of the low income groups are still experiencing financial difficulties. They do not have sufficient affordable credit and investment funds and financial services restraints which lead them to achieve fewer financial planning goals (Ning & Lachance, 2012).

In the absence of education, publics are less likely to perform financial planning. They tend to spend without limit and planning, in time leads to bankruptcy or unable to survive as they grow older. Lusardi (2008) stated that education level determines financial planning. Low education level causes the failure of retirement planning, poor borrowing behaviour and inactive stock market participantion.

1.3 Research Questions

The research questions are as below:

i. How is the self-perception of financial knowledge among Malaysians in Klang Valley above the age of 21?

ii. How is the financial literacy among Malaysians in Klang Valley above the age of 21?

iii. What is the gap between self-perception of financial knowledge and actual financial knowledge among Malaysians in Klang Valley above the age of 21?

iv. How self-perception of financial knowledge, financial literacy and the gap between self-perception of financial knowledge and actual financial knowledge, age, gender, education level and income level affect financial planning?

1.4 Research Objectives

The research objectives are as below:

i. To determine the self-perception of financial knowledge among Malaysians in Klang Valley above the age of 21.

ii. To examine the financial literacy among Malaysians in Klang Valley above the age of 21.

iii. To investigate the gap between self-perception of financial knowledge and actual financial knowledge among Malaysians in Klang Valley above the age of 21.

iv. To determine how self-perception of financial knowledge, financial literacy and the gap between self-perception of financial knowledge and actual financial knowledge, age, gender, education level and income level affect financial planning.

1.5 Hypothesis of the Study

1) **H1**: There is a significant positive relationship between age and financial planning of Malaysians.

2) **H1**: There is a significant relationship between gender and financial planning of Malaysians.

3) **H1**: There is a significant positive relationship between education level and financial planning of Malaysians.

4) **H1**: There is a significant positive relationship between income level and financial planning of Malaysians.

5) **H1**: There is a significant positive relationship between financial literacy and financial planning of Malaysians.

1.6 Significance of the Study

These findings can help to foster financial security at older ages (Lusardi, 2010). With the results, respondents can further improve their financial positions to build better future as early financial planning can make better financial planning.

Moreover, this study aims to assist in understanding their own financial literacy. The respondents were required to be at least 21 years old to complete the questionnaire. People of the age group between 21 and 30 years old often face big decisions of buying houses, cars, insurances and other financial instruments. They need to meet many financial commitments especially for young couples that are planning to marry.

Furthermore, the results can provide further support to parties that seek to investigate the factors on affecting financial planning. Researches on issues related to financial planning and financial literacy often varies over time as people tend to improve as compared to before.

1.7 Chapter Layout

The chapter one provides a general idea, research problems, research questions and objectives of the study. There are numerous published and unpublished literature writings from various authors in chapter two. Methodology in chapter three describes how this research is being conducted. Meanwhile, the data analysis describes and analyse the findings of this research. The last chapter is going to end with conclusion, limitations, and recommendations for this research.

1.8 Conclusion

Chapter one gives an overview on definitions of financial literacy and financial planning. Readers can further understand through problem statement, research objectives, hypothesis and significance of our study.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

Chapter 2 consists of literatures, papers and related theoretical models, followed by proposed theoretical or conceptual framework, development of hypotheses.

2.1 Review of the Literature

2.1.1 Dependent Variable – Financial Planning

'Planning' is defined as a basic management function comprising formulation of one or more than one detailed plans to attain optimum balance of needs or demands together with the available resources (BusinessDictionary.com, 2014). The process of shaping financial needs or future financial goals is known as financial planning. It involves appropriate investments and activities decision. According to Certified Financial Planner (2014), individuals can understand the consequences of each financial decision and ways to manage own finance through their own financial planning. Credit and cash management, investment, risk management and insurance, tax planning, retirement and estate planning are several components of financial planning.

2.1.2 1st Independent Variable – Age

Stawski, Hershey and Jacob-Lawson (2007) have investigated the relationships between age and financial planning among 100 working adults by conducting a study in United States. The researchers found out that the correlation between age and financial planning was significant.

A research was conducted by Weierich, Kensinger, Munnell, Sass, Dickerson, Wright and Barrett (2010) in America stated that age has a positive and significant impact on financial planning. According to Weierich et al. (2010), older adults often make financial decision errors. In contrast, younger people would have made lesser errors in financial decision making as compared with older adults.

A research conducted by Yao, Sharpe and Wang (2011) shows that financial risk tolerance is affected significantly by aging and period effects. Yao et al. (2005) found that there are different levels of risk tolerance among different age groups.

Morin and Suarez's study (as cited in Wang & Hanna, 1997) examined the relationship between age and holding high risk assets. On average, they found that the inverse relationship of risk tolerance and age. However, this is contradicting with the findings of Wang and Hanna (1997), they stated that when people age, their risk tolerance increases.

2.1.2 2nd Independent Variable – Gender

Glass and Kilpatrick (1998)'s study (as cited in Stawski, Hershey and Jacob-Lawson, 2007) suggests that savings accumulations have been linked to gender whereby women save less than men. Thus, it shows that gender has an impact on financial planning.

In Malaysia context, Mahdzan and Tabiani (2013) found out that gender and individual saving are positively related. Gender is significantly associated with individual saving. According to Sunden and Surrette (1998)'s study (as cited in Mahdzan & Tabiani, 2013), men have better retirement planning than women.

In addition, gender has significant impact on financial planning. Male tend to have high risk tolerance than female (Yao & Hanna, 2005). Apart from that, sample size of 550 MBA students from University of Chicago were involved in the research to study the gender differences in financial tolerance, which was conducted by Sapienza, Zingales and Maestripieri (2008). Based on their findings, women are generally less risk tolerance in making financial decision than men. However, Qiao (2012)'s study found out that gender does not bring a significant impact on saving behavior.

Moreover, a study was carried out in the state of Rajasthan, India to explore the demographic impacts on the investment decisions in the financial markets. According to Jain and Mandot (2012), there is no relationship between the investors' gender and the level of risk taking ability. In other words, it indicates that gender does not bring significant impact on the investors' investment decisions in the financial market.

Dyreng, Hanlon, and Maydew's study (as cited in Francis, Hasan, Park & Wu, 2014) found out that executive gender do not affect corporate tax avoidance. In other words, there is no relationship between gender and corporate financial reporting decision-making. Gender does not affect investors risk propensity and financial risk-taking (Barasinska, 2011).

2.1.3 3rd Independent Variable – Education Level

The lack of financial literacy may be affected by the education level of an individual. When individuals are not that financially literate, they involve less in financial planning. Financial education plays an important role by helping individuals manage their financial assets and investments and also prevent themselves from being the victims of fraudulent activities (Tan, Hoe & Hung, 2011).

In addition, Martin (2007) researched that individual who makes mistakes with finance decisions are more likely less educated. Positive impact has showed between the increase of education level and financial planning in the study. The high education level appears to benefit wide areas including retirement planning, homeownership, credit use and savings.

According to the journal of The Determination of Individual Financial Planning Horizons by Dow and Jin (2013) stated that education is one of the most essential variables in financial decision. They found out that high education level will leads to a future-oriented attitude and longer financial planning.

2.1.4 4th Independent Variable – Income Level

The researchers found that income is positively related to financial planning and goal clarity. Higher income would be more possible to have capital that would facilitate long-range goal setting financial activities (Stawski, Hershey & Jacob-Lawson, 2007).

Lusardi explained the lack of planning may be caused by the low income and low educational attainment. Low income level group is unable to be benefited benefit from financial planning due to uncertain income shocks. Besides, high income level is more likely to be a planner was explained in another study by Lusardi and Mitchell (2007). They found out that most of the high income individuals could answer almost all of the financial questions.

A survey for more than 1,000 household financial decision-makers was designed by Princeton Survey Research Associates International to examine the types of financial planning that Americans do and test them on the basis of how well or poorly they follow established planning principles. There are 19% of household fall into comprehensive planners. Almost all households in this group have high income level. Annual income of the comprehensive planners reached to $100,000 or more. They tend to go beyond a simple household budget and usually seek for financial professional for helping them in preparing plan such as retirement plan, insurance and emergency saving. On the other hand, 10% of the non-planners in the survey do not have any financial planning but to manage a heavy credit card debt and almost half of them could not pay down the debt (Princeton Survey Research Associates International, 2013).

2.1.5 5th Independent Variable – Financial Literacy

Arrondel, Debbich and Savignac (2013) combined several past surveys which have done by the researches to conclude that financially literate individuals engage themselves more in a well-defined long term future financial plan. The researchers found out that financial literacy appears to be positively and highly significantly correlated with the propensity to plan and formulate a specific financial plan in the long run.

Another paper which investigated the relationship between financial literacy levels and personal financial planning engagement. Tan, Hoe and Hung (2011) observed that individuals with high financial literacy show the highest tendency to engage themselves in financial planning when compared to medium and low level of financial literacy. This proves that financial literacy is a useful indicator of an individual's financial planning decision. Individuals who are more financially literate increase their awareness of the areas of financial planning and be ready with the required financial knowledge.

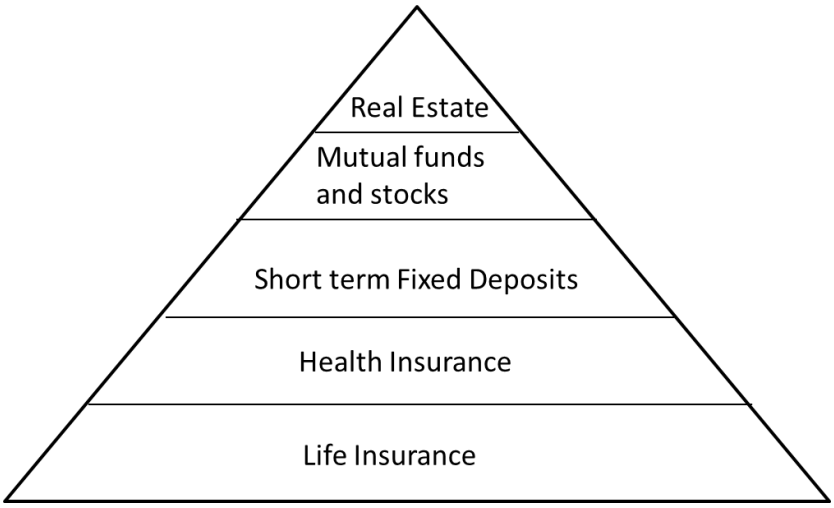
Financial literacy and planning are clearly interrelated in the study of Lusardi and Mitchell (2005). The result shows two-thirds of the planners answered the entire financial literacy question correctly. Individuals who have financial literacy are more likely to plan and to succeed in their planning. The respondents fail to understand the role of compound interest, risk and inflation.

2.2 Review of Relevant Theoretical Models

2.2.1 Maslow's Hierarchy

According to Agaskar (2013), financial planning can be explained by Maslow's Theory. Maslow's Hierarchy of Needs by Abraham Maslow (1943) explains five motivation needs such as physiological needs, safety needs, love needs, esteem needs and self-actualization needs through a pyramid. Maslow stated that people will satisfy their most basic needs before progressing on to higher level needs (Reid-Cunningham, 2008). To satisfy people most basic physiological needs is to invest in life insurance which can secure any uncertainties that will happen in the future. Second is follow by safety needs, people will invest in health insurance that can protect them from high medical costs. Once safety needs are satisfied, people will move on to satisfy their belonging needs by investing in short-term fixed deposits. Short term fixed deposit provides more safety and liquidity than other investment. The fourth needs are self-esteem needs where people will invest in mutual funds or stocks in the market. Lastly, people will go for long term investment such as real estate, private equity and arts to satisfy their self-actualization needs. Maslow's hierarchy of needs provide a better and secure way for financial planning. It suggests that people should cover their primary needs in order to invest in riskier products.

Figure 2.1: Maslow's Hierarchy of Needs for financial planning



Source: Agaskar, R. (2013). Financial Planning: *Explained through Maslows Theory*. *HubPages*. Retrieved 10 October, 2014 from: http://rudreshagaskar.hubpages.com/hub/Investing-Right-Explained-through-Maslows-Theory.

2.2.2 Financial Capability Model

Atkinson, McKay, Collard and Kempson (2006) have developed a financial capability model in their research regarding individual financial behaviour, attitude and knowledge. The model includes five components of personal finance. Each component represents financial knowledge and attitude toward behaviour. First component is making ends meet, individual with sufficient financial knowledge and attitude able to meet their goals like spend less than income earned. Second component is keeping track on their daily budget to avoid spending and manage their finances. Third component is choosing financial products can help individual to accumulate wealth and diversify risk. However, individual with poor financial knowledge and attitude will end up choosing the wrong products to finance their personal planning. Forth component is planning ahead financially, it can helps individual to be prepare for any uncertainty that might happened in the future and secure personal finance in the long

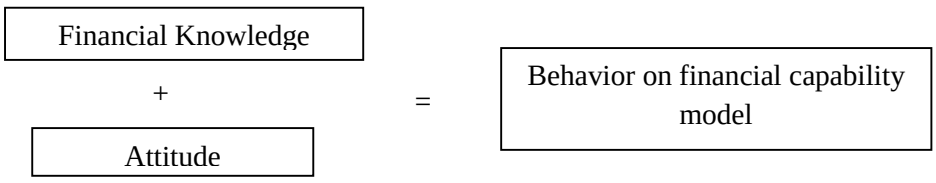
term. The last component is staying informed, individual has to keep track on latest financial knowledge such as housing price, stock market and interest rate through newspaper, television, radio and other sources of information.

Table 2.1 Summary of Financial Capability Model

5 Components of financial capability model	
Making ends meet	Understand how to finance properly and meet financial goals
Keeping track	Know how to keep track on daily finances
Choosing products	Understand the risk diversification concept and has awareness of different kind of assets
Planning ahead	Know the importance of planning ahead
Staying informed	Understand and update latest financial knowledge frequently

Source: Robson, J. (2012). *Assessing the effects of financial literacy interventions for low income and vulnerable groups in Canada*. The Case for Financial Literacy, 3-31.

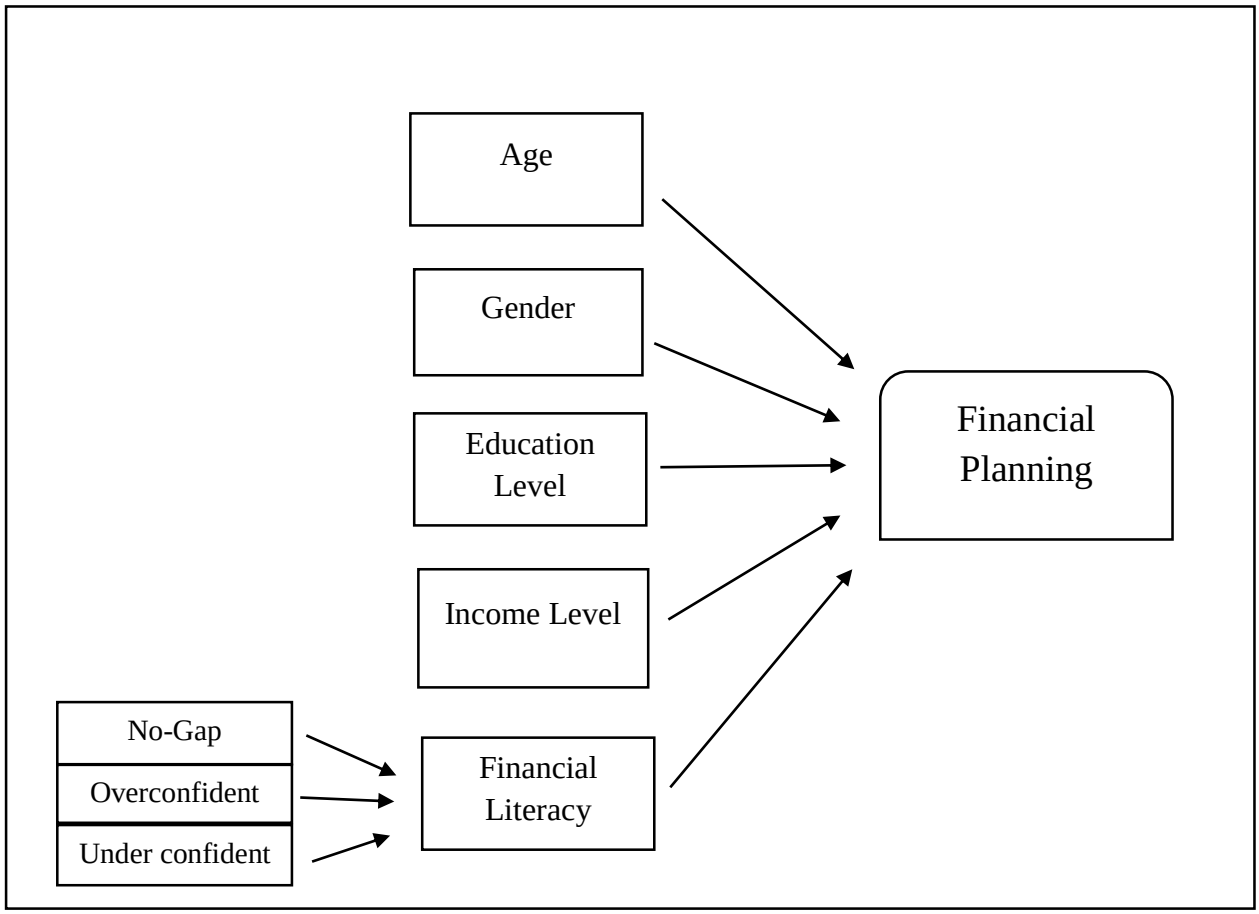
Figure 2.2: Concept on financial capability model



Source: Atkinson, McKay, Collard and Kempson (2006). *Levels of Financial Capability in the UK. Public Money & Management*, 1-24. doi:10.1111/j.1467-9302.2007.00552.x

2.3 Proposed Theoretical / Conceptual Framework

Figure 2.3: Factors Affecting Financial Planning



Source: Developed for the research

Based on the research objectives and research questions, we further improvised the model used by Tan, Hoe & Hung (2011). This models were originated from numerous literature reviews. (Lusardi & Mitchell, 2005; 2007; Lusardi, 2008a; 2008b). Dr. Annamaria Lusardi has advised U.S. Treasury and also has won numerous financial research awards; Dr. Olivia S. Mitchell is also highly qualified as Professor of International Foundation of Employee Benefit Plans and Insurance or Risk Management and Business Economics Policy. Thus, we chose age, gender, education level, income level and financial literacy as independent variables.

The equation of this study as below:

Financial Planning = β1 Tgap + (β2 Age+ β3 Gender + β4 Education + β4 Income)

Table 2.2: Estimated Relationship of Given Independent Variables and Financial Planning as Dependent Variable.

Independent Variables	Estimated Relationship
Age	Positively Significant
Gender	Significant
Education Level	Positively Significant
Income Level	Positively Significant
Financial Literacy	Positively Significant

Source: Developed for the research

2.4 Hypothesis Development

Financial planning can be affected by age. Age serves as an important demographic variable to evaluate the effect on financial preparedness, financial planning and retirement planning (Klapper & Panos, 2011; Yoong & See & Baronorich, 2012). People understand more on cost of living and their retirement expense requirements as they get elder (Yoong & See & Baronorich, 2012). However, age is found to be negatively related to financial literacy (Shaari, Hasan, Mohamed & Sabri, 2013). Thus, we proposed the following hypothesis:

H1: There is a significant positive relationship between age and financial planning of Malaysian.

Lusardi and Mitchell (2008) did a study on the effect of gender on financial planning and financial literacy. They specifically used female as the main independent variable to investigate the given relationship. Based on their findings,

women are relatively less financial literate as compared to the older population who struggle to be good financial planners. Other researchers also agree that gender gives an impact in making financial decisions (Chen & Volpe, 1998; Danes & Haberman, 2007; Manton et al., 2006; Peng et al., 2007; Volpe et al., 1996). The following is the proposed hypothesis:

H1: There is a significant relationship between gender and financial planning of Malaysian.

Individual's education level is greatly associated with their financial management. This is supported by numerous studies (Lusardi & Mitchell, 2006; 2007; 2008). In the study of education level in the context of Malaysia, the result shows that the higher the education level, Malaysians are more financially prepared for retirement (Yoong, See & Baronorich, 2012). Thus, this following hypothesis is proposed:

H1: There is a significant positive relationship between education level and financial planning of Malaysian.

Based on the study by Yoong, See and Baronorich (2012), personal income positively affects personal financial well-being. An individual often face difficulty in making good financial planning when he or she has lower pay check as compared to people who have higher pay check. Income is the first account when it comes to constructing a budget (Stephanie, 2011). Thus, the proposed hypothesis is as below:

H1: There is a significant positive relationship between income level and financial planning of Malaysian.

Financial literacy is specified in many financial studies. People often perceive themselves to be better than what they actually (Yoong, See & Baronorich, 2012; Lusardi & Tufano, 2009; Lusardi & Mitchell, 2009). Financial literacy is also positively related to retirement planning which is one of the main components of

financial planning (Klapper & Panos, 2011). Poor retirement planning, (Lusardi & Mitchell, 2006, 2008, 2009), difficulty in accumulating wealth (Stango & Zinman, 2009), and low participation in stock market (Rooij, Lusardi & Alessie, 2007; Yoong, 2008; Christelis, Jappelli & Padula, 2010) are the characteristics of individuals that are less financial literate. The following hypothesis is as below:

H1: There is a significant positive relationship between financial literacy and financial planning of Malaysian.

2.5 Conclusion

Through the study of relevant literature review and theoretical models, age, gender, education, income level and financial literacy are used as the independent variables of this study to test on the effect on financial planning. Then, a conceptual framework is formed based on numerous models by other authors. Next chapter, the main focus is on methodologies of the study.

CHAPTER 3: RESEARCH METHODOLOGY

3.0 Introduction

The aim of this chapter is to present an overview of research design and empirical techniques applied to collect data. The fieldwork was conducted during the period from August 2014 to November 2014. The main data collection technique used was online distribution of questionnaires. This chapter is divided into six sections which are research design, data collection methods, sampling design, operational definitions of constructs, measurement scales, and methods of data analysis.

3.1 Research Design

The study uses both qualitative and quantitative methods are being used in measuring the five main independent variables. Age and income level of the respondents are being measured using quantitative method; gender, financial literacy and education are being measured using qualitative method. Descriptive and casual research designs in determining the relationship between financial planning and the five independent variables. Descriptive research is first used to give a brief outlook on the demographic information of the respondents. Then, casual research is used mainly on determining the financial literacy of respondents.

3.2 Data Collection Methods

Both primary and secondary data are used for this study. Questionnaires survey was used as method of collecting primary data and the questionnaires were distributed to target population in Klang Valley, Malaysia. Besides, secondary data like journals and articles are used to support this study. Heaton (2003) suggests that although the purpose of creating the data might be difference but secondary data can be used to support any relevant hypothesis and theoretical framework.

3.3 Sampling Design

In this section, it will have in depth of target population, sampling frame, sampling location, sampling elements, sampling technique and sampling size.

3.3.1 Target Population

The targeted population for this study is Malaysians that are at least 21 years old in Klang Valley, Malaysia. The targeted respondents come from various education backgrounds such as pure business related, sub-business related and non-business related. They are required to have minimal financial knowledge.

3.3.2 Sampling Frame and Sampling Location

In this study, sampling frame is not appropriate for this study. Klang Valley composes 10 different authorities namely Kuala Lumpur, Klang, Kajang, Subang Jaya, Petaling Jaya, Selayang, Shah Alam, Ampang Jaya, Putrajaya and Sepang. In 2013, the population in Klang Valley is approximately one fifth of Malaysia total population. The number of respondents from Klang Valley is significant to represent this study. People who live in Klang Valley are perceived to be more knowledgeable as compared to rural areas.

3.3.3 Sampling Elements

The targeted respondents are Klang Valley residents that have minimal financial knowledge. Also, the potential respondents must be at least 21 years old. Respondents that have completely no financial knowledge will face difficulties in answering the questionnaire. Since this study is to investigate financial literacy and financial planning, individuals of at least 21 years old are the people who started their financial planning. In this study, there are no restraints towards any specific occupations as long as respondents meet the requirements that are being mentioned above.

3.3.4 Sampling Technique

In this study, non-probability sampling methods such as quota sampling and convenience sampling method are being used to investigate on the targeted population. This is to avoid the imbalance in our number of

respondent in terms of gender, age and type of education. Due to convenience, respondents in Klang Valley are better choices. The questionnaires were distributed personally to the respondents and being distributed online.

3.3.5 Sampling Size

The minimum sample size of 150 questionnaires is set to be representative for this study. Initially, this study targeted to reach 240 respondents within the given time and resource constraints. There is a return rate of 65.83 % of the questionnaires that were being distributed.

3.4 Research Instrument

The study has used self-administered questionnaire method to attain data. The questionnaire consists of multiple choice question, yes or no question and Likert scale. The questionnaire has been separated into five sections whereby section A consists of demographic profiles of the respondents such as gender, age, level of qualification, type of education and so forth while section B tests the understanding of financial concepts using yes or no question. Section C consists of the basic financial questions whereas section D asks respondents advance financial questions. Both of the sections consist a total of thirteen multiple choice questions. Section B, C and D are used to determine the gap between the perception and actual financial knowledge of Malaysians in Klang Valley. Section E finds out the ongoing financial planning scorecard of each individual by requesting them to rank the questions (1 represents for strongly disagree while 5 stands for strongly agree).

Pilot test is conducted before the questionnaire is distributed to the target respondents. There were a total 16 sets of questionnaire have been disseminated to both young and old people that have minimal financial knowledge. After the pilot test has been conducted, the researchers amended ambiguous questions. The researchers distributed the questionnaires to the respondents personally and through online survey. Researchers had created a Google Docs which consist of set of questionnaire to aim a larger group of respondents. The process of pilot testing and data collection has last for two months from September 2014 to October 2014.

3.5 Constructs Measurement

According to Malhotra and Birks (2007), measurement refers to assigning numbers or other symbols to characteristics of objects according to certain pre-specified rules. There are four levels of measurement scales which include nominal, ordinal, ratio and interval.

3.5.1 Demographic variables

Both nominal and ordinal scales are used to measure the demographic profile of respondents in Section A. Gender, level of qualification and type of education are measured in nominal scale. Age and income level are measured in ordinal scale.

3.5.2 Independent variables

Nominal scale measurement is employed to measure the independent variables, which include gender and education level. On the other hand, ordinal scale is used to measure independent variables, which consists of age and income level. Financial literacy is measured using nominal scale.

3.5.2.1 Age

There is one question on age in the questionnaire to test the relationship between financial planning and age of respondents (Lusardi & Mitchell ,2007). There are four age category, which include 21-30, 31-40, 41-50 and above 50. The researchers would like to determine whether different age group of respondents would have differing financial planning.

3.5.2.2 Gender

In Section A, there is one question on determining the gender of respondents. Gender is included to determine whether there is a significant relationship between gender and financial planning

3.5.2.3 Education level

There are two questions on education such as type of education and the highest education received by the respondents. These two were important to determine the correlations on financial planning (Lusardi & Mitchell, 2007).

3.5.2.4 Income level

In the questionnaire, there is one question on income level of the respondents. The income level is separated into below RM 1,000, RM 1,001- RM 3,000, RM 3,001- RM 5,000, RM 5,001- RM 10,000 and above RM 10,000. The researchers would like to examine whether income level of respondents will bring a significant impact on their personal financial planning.

3.5.2.5 Financial literacy

Several sections were used to test on the relationship of financial literacy on financial planning. Section C and Section D was adopted from Lusardi and Mitchell (2007). There are five questions in Section B that asks respondents basic financial questions whereas there are eight questions in Section D that asks respondents advance financial questions. Then, these two sections were compared with the results obtained in Section B. Section B is being asked in yes or no question pattern whereas Section C and Section D are being asked in the form of multiple choice questions. The researchers would like to determine how self-perception of financial

knowledge, financial literacy and the gap between self-perception of financial knowledge and actual financial knowledge affect the financial planning among Malaysians.

3.5.3 Dependent variables

The researchers employed a five-point Likert scale in order to measure the financial planning of the respondents. Twenty one questions are adopted from Lusardi and Mitchell (2007). Personal ongoing financial planning scorecard in Section E are measured via five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). A higher scale indicates that the respondents practices effective financial planning and vice versa.

3.6 Data Processing

158 sets of questionnaire disseminated are returned from the respondents and data is processed via Google Docs. The purpose is to make sure the data are in the standard quality. The process includes checking, editing, coding and transcribing. At first, the researchers check and review each questionnaire to confirm its completeness. Next, the researches started to recode the raw data. For instance, for the gender of respondents in Section A, male has been coded as "0" while female as "1". Lastly, the data are keyed in and transformed into a more appropriate format for data analysis.

3.7 Data Analysis

The statistical program SPSS version 21.0 has been used in this study due to its user-friendly nature. Moreover, it does not consume much time for beginners to operate as compared to E-views. SPSS version 21.0 allows the study of this researchers to produce output on descriptive statistics, normality tests and inferential statistics.

3.7.1 Descriptive Analysis

In this research, descriptive analysis method is used to show simple comparisons of demographic information. Pie charts are used to show clear pictures of demographic information such as gender, age, and level of qualification, type of education, income level, family status, children's financial independency, employment, status and retirement status. The self-perceived financial knowledge, the accuracy of correctly answered financial questions and actual financial knowledge gap are being described in table form with their relative percentage. The percentage of actual financial knowledge gap is obtained through the comparison of corrected answered basic and advance financial questions against respondents' self-perceived financial knowledge to show whether respondents are under confident, no knowledge gap or over confident. The Likert-scale personal financial planning scorecard of the respondents are being described using mean, standard deviation, skewness and Kurtosis.

3.7.2 Scale Measurement

3.7.2.1 Reliability Analysis

In Section E of the questionnaire, respondents are required to rate their own ongoing personal financial planning ranging from 1 to 5. Reliability test is used to measure the stability and consistency of respondents' rating on their own financial planning. Cronbach's alpha is used to measure internal consistency in this research as it is the most common form of reliability analysis. The value of Cronbach's alpha with the range of greater than 0.60 is considered acceptable and good. The following is the rule of thumb for Cronbach's alpha coefficient value:

Table 3.1: The rule of thumb for Cronbach's alpha coefficient value

Alpha Coefficient Range	Strength of Association
Less than 0.60	Poor
0.60 to less than 0.70	Moderate
0.70 to less than 0.80	Good
0.80 to less than 0.90	Very good
0.90 and above	Excellent

Source: Hair, J. F., Babin, B. Jr., Money, A. H., & Samouel, P. (2003). *Essential of business research methods*. United Stated of America: John Wiley & Sons.

3.7.3 Inferential Analysis

Inferential statistics are used to make inferences of the compiled data. The main few inferential analysis that are used in this research are Pearson

coefficient, Multicollinearity, multiple regression analysis, cross tabulation, Durbin-Watson. Human Development Index (HDI) is also used to assist in calculations before multiple regression tests are being carried out.

3.7.3.1 Pearson Correlation

Pearson correlation coefficient is used in this research to measure the linear relationship of the five main independent variables on six components of financial planning. This is used as it is one of the basic inferential analysis measures. Researchers use Pearson correlation to investigate the strength of relationship between the mentioned variables in the earlier chapter.

3.7.3.2 Multicollinearity

The presence of multicollinearity increases the standard errors of the coefficients. Since this research have five main variables that may be potentially related to one another, the proposed model must be tested with multicollinearity test. Among many multicollinearity methods, variance inflation factors (VIF) is used as this method is easy to understand. Based on the VIF rule, the sample size of this study is not huge, thus the VIF values should not be greater than 5.

3.7.3.3 Multiple Regression Analysis

This research uses multiple regression analysis to indicate the significant influences of the independent variable on dependent variable while controlling for other independent variables. Dummy variables are created to see exactly which segment of a given independent variable affecting financial planning. There are seven different dependent variables while performing multiple regression analysis. Researchers use multiple regression to investigate whether credit and cash management, investment planning, risk management and insurance, tax management, retirement planning, real estate or the sum of the whole financial planning scorecard in influenced by the control variables. Through performing multiple regression analysis using SPSS version 21.0, researchers also view the F statistic, t-statistic and p-values of the proposed model.

3.7.3.4 Cross-Tabulation

Researchers perform cross-tabulation three times. The details of the three cross-tabulation tests are as below:

1. Section B (Self-perceived financial knowledge) on Section E (Financial planning scorecard)

2. Section C (Basic Financial Questions) on Section E (Financial planning scorecard)

3. Section D (Advance Financial Questions) on Section E (Financial planning scorecard)

Through this method, researchers can get a zoom in of different financial literacy related variables on financial planning.

3.7.3.5 Durbin-Watson

In this research, researchers use Durbin-Watson to test whether there is a presence of autocorrelation in the residuals from multiple regression analysis. This is needed as positive or negative autocorrelation in this research will show that the proposed variables or model is not good enough. Researchers compare the displayed statistic with lower and upper bounds in a table to draw conclusions. Autocorrelation is also another common element that each researcher should take note of to ensure there is no other disturbances in the produced output.

3.7.3.6 Human Development Index (HDI)

The Likert-scale based questions in Section E of the questionnaire is calculated using Human Development Index (HDI) as researchers need to obtain an average value before running multiple linear regression. The Human Development Report (2013) introduced a dimension index to calculate average achievements for education, income and health in a country (United Nations Development Programme, 2013). The formula of Human Development Index is as shown:

Figure 3.1: Formula of Human Development Index

$$\text{Dimension Index} = \frac{\text{Actual value} - \text{Minimum value}}{\text{Maximum value} - \text{minimum value}}$$

Source: United Nations Development Programme, 2013

Dimension index ranges from 0 to 1. A score closer to "0" indicates respondents have lower value on their personal financial planning, meanwhile, a score closer to "1" indicates the higher value of personal financial planning (Neumayer, 2001).

3.8 Conclusion

In this chapter, methodologies used for the research are described and justified in this chapter. The following chapter will examine the data obtained from the questionnaire and provides a detail analysis on those data.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

The chapter is divided into four sections. The first section will discuss demographic information of respondents. The second and third sections will report the reliability analysis and inferential analysis according to research objectives and questions. Last section will be the summary to conclude this chapter.

4.1 Descriptive Analysis

4.1.1 Respondent Demographic Profile

The following figures provide demographic information of respondents in terms of gender, age, and level of qualification, type of education, income level, family status, children's financial independency, employment, status and retirement status.

4.1.1.1 Gender

INSERT APPENDIX 4.1

Appendix 4.1 shows that majority of the respondents are female (61%) while 39% of the respondents are male.

4.1.1.2 Age

INSERT APPENDIX 4.2

Appendix 4.2 shows the majority of respondents fall under the age group of 21-30 years old (59%). Followed by, the age group of 31-40 years old (24%) and 41-50 years old (16%). Meanwhile, there is only 1% of the respondent fall into the age group of above 50.

4.1.1.3 Level of Qualification

INSERT APPENDIX 4.3

Appendix 4.3 shows there is 52% of the respondents' highest education received is undergraduate degree. Next, postgraduate degree obtained 25% and foundation or certificates attained 16%. Followed by, secondary school (6%) and the minority of level of qualification fall under primary school that is 1%. Majority of the respondents are educated as the education level in Klang Valley is relatively higher as compared to other regions.

4.1.1.4 Type of Education

INSERT APPENDIX 4.4

Appendix 4.4 shows that 39% of respondents receive pure-business related education. Subsequently, there is 32% of respondents are non-business related. Sub-business related (29%) is the minority of education received.

4.1.1.5 Income Level

INSERT APPENDIX 4.5

Appendix 4.5 shows 36% of respondents have the income level of below RM1,000. Followed by, RM5,001-RM10,000 which obtained 24%, RM3,001-RM5, 000 (21%) and RM1,000-RM3,000 attained 13%. There is only 6% of the respondents under the income level group of above RM10,000.

4.1.1.6 Family Status

INSERT APPENDIX 4.6

Appendix 4.6 shows the majority of respondents do not have children (68%). Meanwhile, 32% of the respondents have children.

4.1.1.7 Children's Financial Independency

INSERT APPENDIX 4.7

Appendix 4.7 shows there is 53% of respondents have to support their children financially while 47% of respondents do not have to support their children financially. Through this, researchers can draw implications that majority of the respondents are more financially burdened with the presence of their children.

4.1.1.8 Employment Status

INSERT APPENDIX 4.8

Appendix 4.8 shows 56% of the respondents are full time employees, 32% of the respondents do not have a job and 12% of the respondents are employed as part timers.

4.1.1.9 Retirement Status

INSERT APPENDIX 4.9

Appendix 4.9 shows majority of the respondents are not retired. Next, 5% of the respondents are semi-retired. There is only 1% of the respondents are fully retired.

4.1.2 Self-Perceived and Actual Financial Knowledge

4.1.2.1 Self perceived Financial Knowledge

INSERT APPENDIX 4.10

The first research objective is answered in this section. Respondents were asked to answer yes or no based on their own understanding of the listed basic and advance financial concepts. A ‘yes’ shows that respondents think that they understand the particular financial concept whereas a ‘no’ signifies that they think that they may not understand the particular financial concept. For each basic financial concepts, more than 50% of the

respondents answered a ‘yes’ towards those concepts. 94.30% of the respondents stated that they know about inflation and only 5.70% of the respondents answered a ‘no’ towards inflation. However, up to 47.47% of the respondents answered a ‘no’ towards division.

There are also more than 50% of the respondents answered ‘yes’ for each self-perceived advance financial concepts. The highest percentage of a ‘yes’ on self-perceived advance financial concept is long period of return. However, as compared to the percentage of ‘yes’ in understanding basic financial concepts, the overall percentage of ‘yes; in understanding advance financial concepts is lower.

Therefore, majority of the respondents perceived themselves to understand basic and advance financial concepts.

4.1.2.2 Basic level Financial Questions

INSERT APPENDIX 4.11

This section serves as a start to answer part of the second research objective. Respondents are given basic financial questions in MCQ. More than 90% of the respondents managed to answer correctly for percentage and division question. There are 85.44% of the respondents were right for inflation question. Among the basic financial questions, time value of money questions scored the lowest among basic financial questions at 74.68%. Despite time value of money scoring the lowest out of other basic financial questions, more than 70% of the respondents are able to answer each basic financial questions correctly.

4.1.2.3 Advance Level Financial Questions

INSERT APPENDIX 4.12

The section answers another small portion of second research objective. Similar to how it works for basic financial questions, respondents were asked to answer advance financial questions. Risk diversification has the highest percentage of correctly answered questions. 86.08% of the respondents managed to choose the correct risk diversification answer. The relative risk between stocks and bonds questions, more respondents were able to answer correctly as compared to the relative risk between company stock and mutual funds questions. However, less than 50% of the respondents answered correctly for knowledge of mutual funds and long period return.

4.1.2.4 Actual Financial Knowledge Gap

INSERT APPENDIX 4.13

This table shows the percentage of self-perceived and actual financial knowledge. To tabulate the above table, Section C1 (Basic Level Financial Questions) – Section B1 (Self-perceived financial knowledge). The 'no gap' component has two meanings. One of them is respondents really know the concepts and answered the questions correctly; respondents do not know the concepts and answered wrongly. For basic financial knowledge, the respondents are found to be overconfident with financial concepts such as percentage, time value of money and inflation achieving 57.60%, 67.10% and 83.50% respectively. 80.40% of the respondents show no gap between the difference of self-perceived and actual financial knowledge in understanding of compound interest.

For advance financial knowledge gap, respondents are overconfident for Gap6, Gap8, Gap12 and Gap13 with 57.60%, 43.00%, 51.30% and 74.10%

respectively. Gap9 and Gap10 which discuss on relative risk of company stock, mutual funds and bonds scored 0% under the overconfident section. Risk diversification is the most overly confident advance financial concept, there are 74.10% of the respondents are overconfident.

4.1.3 Central Tendencies Measurement of Personal Ongoing Financial Planning Scorecard

INSERT APPENDIX 4.14

Appendix 4.14 describes the current personal financial planning of the total of 158 respondents by converting the data into mean, standard deviation, skewness and kurtosis.

Under the category of credit and cash, the second statement has the highest mean score, 3.72 and the forth statement has the lowest mean score which is 3.36. For standard deviation, the second statement has the highest score of 1.089 whereas the lowest score fall into forth statement, 0.946. All of the statements in credit and cash have negative skewness except the fourth statement that has positive skewness.

As reported, the second statement in the category of investment has the highest mean score which is 3.62 while the first statement has the lowest mean score, 3.07. Meanwhile, the third statement has the highest standard deviation score of 1.144 among the five statements. On the other hand, the first statement is the only one with positive value for skewness and the rest are negatively skewed. While for kurtosis, there are two statement has positive values which are the second statement (0.08) and the forth statement (0.09). The rest of the statements have negative values

of kurtosis which indicates that the distributions of these statements are flatter than a normal distribution.

Under the group of risk management and insurance, first statement has the mean score of 3.58 and the second statement has the score of 3. Followed by standard deviation, the first statement and second statement have 1.084 and 1.106 respectively. There is a negative value (-0.517) and a positive value (0.057) in the skewness. Both of the statement in this group has negative kurtosis values which are -0.5 and -0.7 correspondingly.

Statement three has a low mean score of 3.2 and statement two has a highest mean score of 3.8 under the category of tax. Meanwhile, the second statement has the lowest standard deviation score of 0.936 whereas the rest of the statements have the values of 1 and above. The values of skewness in tax are all in negative form. Nonetheless, only second statement has positive kurtosis value of 0.96 and the rest are negative.

Next, the first statement has the highest mean score of 3.12 and the fourth statement has the lowest mean score of 2.5 under the group of retirement. While for the standard deviation, the second statement has the highest score of 1.302 among the four statements. Other than statement two and statement four, the statement one and statement three have negative skewness values which are -0.189 and -0.03 respectively. Lastly, all the statement has negative kurtosis values.

Last but not least, the highest mean of 3.82 fall into statement three while statement one scores the lowest mean score of 2.58 under the category of estate. In contrast, the first statement (1.379) has the highest score on standard deviation whereas statement three has the lowest value of 1.058.

All the statements are negatively skewed except for statement one (0.255). Other than statement three (0.39), the rest of the statement have negative values for kurtosis.

The average mean for retirement is the lowest among the six listed financial planning with relatively higher standard deviation. Respondents rate their retirement planning lower.

4.2 Scale Measurement

Cronbach's alpha coefficient is used to measure the degree of scale's internal consistency and determine the reliability of the scale in questionnaire. Alpha coefficient is range in value from 0 to 1 (Santos, 1999). A low value of alpha coefficient could be due to small number of questions (Gliem and Gliem, 2003). Some researchers suggested 0.500 as minimum acceptable value for Cronbach alpha coefficient in basic research (Arnolds & Boshoff, 2001; Njuguna, Arnolds & Elizabeth, 2010; Tharenou, 1993; Pierce & Dunham, 1987). There are twenty-one Likert scale questions and each with five point scale that are related to respondents' personal ongoing financial planning.

4.2.1 Credit and cash

INSERT APPENDIX 4.15

From Appendix 4.15, there are total of four questions for credit and cash management, the reliability test shows a Cronbach's Alpha coefficient of 0.367 which is relatively low as compared to other five components.

In details, if the question "Agree that interest charges by financial institutions on credit card outstanding balances is reasonable" is removed out from this categories will result a higher alpha coefficient of 0.599. This might due to the nature of question is not belong under credit and cash management thus from the column "Corrected Item- Total correlation" shows the first question is having a negative correlation with other questions. As for future study purpose, it is suggested to remove that particular question.

4.2.2 Investment

INSERT APPENDIX 4.16

Appendix 4.16 shows the total of five items for managing investment. The reliability test shows a Cronbach Alpha coefficient of 0.702, indicating a high internal consistency between the scales in this category.

The range of total correlation for each question is 0.218 to 0.593.The question "Invest based on opinions of friends and family" has the lowest correlation with other questions, which is also having least score of 0.218 as compared to other questions.

4.2.3 Insurance

INSERT APPENDIX 4.17

Based on the Appendix 4.17, the reliability statistics for Insurance management was constructed by two questions. The Cronbach alpha

coefficient of this category is 0.570, which is acceptable for this research. The reason of low Cronbach's alpha coefficient may due to the scale with small number of items as mentioned in literature review.

In details by referring each item of scale, the total correlation for both items is the same with score of 0.398. However, there is no value showed under the column "Cronbach's alpha if Item Deleted" because there will be only one item left for the scale. The reliability test cannot be carried out with only one item.

4.2.4 Tax

INSERT APPENDIX 4.18

From combination of three questions in Appendix 4.18, the reliability test shows Cronbach's alpha value of 0.736 which indicates the internal consistency between scales for each question is high in this research sample.

Among the three questions in Appendix 4.18, "Utilize tax relieves and rebate in filling tax return" shows the highest total correlation. Meanwhile, the question "Tax management is important for financial planning" scored the lowest under column total correlation, thus the alpha value will increase to 0.773 if the question is deleted as shows in column "Cronbach's Alpha if Item Deleted".

4.2.5 Retirement

INSERT APPENDIX 4.19

Four items were constructed for managing retirement in this research. There is a good reliability between the scales in this category. The

reliability test shows the highest Cronbach's alpha value among other categories, which is 0.841, suggesting arelatively high internal consistency in the scales for response of this research sample.

The question "money in EPF is sufficient to use during retirement" has the lowest total correlation which is only 0.428 as compared to others.This also indicates that the Cronbach's alpha coefficient will be higher if the question was removed from the scale. However in overall the correlations for all items are high thus no question is suggested to be taken out.

4.2.6 Estate planning

INSERT APPENDIX 4.20

Three questions were used for Estate Planning management. The reliability test for this category shows Cronbach alpha value of 0.630 which consider moderate as compared to others in terms internal consistency for this research. The question "Have a will" has the least total correlation which is 0.368. Nevertheless, no question has to be deleted because the Cronbach alpha value for this category is within acceptable region.

4.3 Inferential Analysis

Chi-square, linear regression, Durbin-Watson test, Pearson coefficient correlation and F-statistics were being used to do inferential analysis. Chi square test was performed three times to draw the association of three main sections of the questionnaire namely Section B (Self Perception of Financial Concepts), Section C (Basic Financial Questions) and Section D (Advanced Financial Questions) with Section E (Financial Planning Scorecard).

4.3.1 Self-perceived financial knowledge and actual financial planning

INSERT APPENDIX 4.21

Appendix 4.21 shows the significance between self-perceived financial knowledge and financial planning. The results show that self-perceived basic financial knowledge does not significantly affect *credit and cash management* and *risk management and insurance.* However, self-perceived advance financial knowledge significantly affect the six listed financial planning. *Investment* and *retirement planning* are among the most significantly affected by self-perceived financial knowledge. Respondents are found to be overconfident or under confident towards advance financial concepts.

Among the listed advance financial concepts, *function of stock market* is found to be significant at 1%, 5% and 10% on each aspect of investment. This financial concept is fundamental for individuals if they intend to invest. Individuals are required to understand the function of stock market before step further into the differences of bonds, stocks and mutual funds.

The results also show that *tax planning* and *estate planning* are significantly affected by self-perceived financial knowledge. These two financial planning requires specific basic and advance financial knowledge. *Estate planning* requires more in depth financial knowledge, thus self-perceived advance financial knowledge is relatively more significantly as compared to self-perceived basic financial knowledge.

4.3.2 Financial Knowledge Gap and actual financial planning

INSERT APPENDIX 4.22 and APPENDIX 4.23

Appendix 4.22 and Appendix 4.23 explain the forth objective. To investigate on the influence of financial literacy on financial planning, basic and advance financial knowledge gaps are created. Gaps of Appendix 4.22 and Appendix 4.23 are obtained with the following illustrated formula:

Gap 1 = C1 (Basic Financial Question) - B1 (Self-perceived basic financial knowledge)

Gap 6 = C6 (Advance Financial Question) - B6 (Self-perceived advance financial knowledge)

Similar to the results in Appendix 4.21 (self-perceived financial knowledge on financial planning), both self-perceived and actual financial knowledge are greatly tied towards *investment* and *retirement planning*. *Investment* and *retirement planning* are most significantly affected by actual financial knowledge gap. To make good *investment* and *retirement planning* decision, an individual's actual financial knowledge plays a great role. People often want to invest their additional funds in places that are worthwhile. Although there are investment agents in the market, investment still rely a lot of own financial knowledge.

Basic financial knowledge gap significantly affect *investment, tax planning, retirement planning* and *estate planning*. However, the actual gap of basic financial knowledge does not significantly affect *credit and cash management*. This finding remains rather unreasonable as *credit and cash management* should be influenced by basic financial knowledge. Gap1 only significantly affecting *retirement planning* and *estate planning*. Other financial planning is not significantly affected by Gap1. The gap of understanding inflation, Gap5 significantly affect *retirement planning* and

i*nvestment*. In near future, these few unreasonable findings may be taken into deeper considerations.

Appendix 4.23 provides the relationship between advance financial knowledge gap and financial planning. Every advance financial knowledge gap significantly affects each listed financial planning except Gap11 which is long period return that only significantly affect *investmen*t. REFER APPENDIX 4.21 (self-perceived financial concepts). More than 50% of the respondents are found to be confident towards basic financial concepts whereas they are under confident towards advance financial concepts. They may know more of advance financial concepts than they think they do. Their under confidence for advance financial concepts creates actual financial knowledge gap.

The advance financial knowledge gap affects significantly on *investment* with majority of confidence level at 5% and 1%. *Investment* does not only greatly influenced by advance financial knowledge gap. The results show that individuals will require both basic and advance financial knowledge. As for *retirement planning*, Gap10 and Gap12 are found to be insignificant. *Credit and cash management* and *risk management and insurance* are not significantly affected by Gap7, Gap8 and Gap10. The fluctuations, relationships and risks of mutual funds, bonds, saving accounts and stocks are found relatively not that important in *retirement planning*, *credit and cash management* and *risk management and insurance*. These few financial concepts are more skewed towards making good investment planning rather than the three mentioned financial planning.

One of the major findings is that self-perceived and actual basic financial knowledge gap are not significant on *credit and cash management*. This is worth to be studied as this finding is unexplainable by logical reasoning.

4.3.3 Overview of Independent Variables on Dependent Variables

Appendix 4.24 provides a summary of coefficients and the results of other tests. Each financial planning is being tested twice. The first time is tested with the particular financial planning as dependent variable and total financial knowledge gap. The second time is tested again with the same particular dependent variable and total financial knowledge along with all other dummy variables. Total financial knowledge gap, Tgap is calculated as below:

$$Tgap = Gap1 + Gap2 + Gap3 + \ldots\ldots\ldots + Gap13$$

And Stotal is obtained through:

$$Stotal = Scash + Sinvest + Sinsurance + Stax + Sretire + Sestate$$

Financial literacy, Tgap shows significant effect on *credit and cash management, investment, tax planning, estate planning* and *Stotal*; Tgap does not have significant effect on *risk management and insurance* and *retirement planning*. Financial literacy is significant on financial planning which is consistent with numerous studies (Arrondel, Debbich & Savignac, 2013; Tan, Hoe & Hung, 2011; Lusardi & Mitchell, 2005). Tgap is positively correlated with each financial planning except the correlation of *retirement planning* and *risk management and insurance.* Existing risk and insurance agents may be adequate to assist people to manage, thus individuals do not really need to have financial knowledge in this field. They can choose to manage themselves or get assistance from existing agents.

Gender is insignificant on financial planning. Researchers by Jain and Mandot (2012), Barasinska (2011) and Dyreng, Hanlon, Maydew (as cited by Francis, Hasan, Park and Wu, 2014), their findings support that gender

does not show significance on financial planning. This result is inconsistent with the studies Chen and Volpe (2002), Sunden and Surrette (1998) and Yao and Hanna (2005) that gender has significant effect on financial planning. Back in the earlier days, women are less educated. They were not able to receive equal education opportunities. Nowadays, women are being treated more fairly.

Age is found to be significant on *investment, retirement planning, estate planning* and Stotal; Age does not show significant effect on *credit and cash management, risk management and insurance* and *tax planning*. This result is consistent with Cameron et al. (2003), Stawski, Hershey and Jacob-Lawson (2007), Weierich et al. (2010) and Yap, Sharpe and Wang (2011). Among the listed financial planning, *retirement planning* is found to be significant at 1% confidence level. The youngest age range, 21-30 is found to be insignificant on financial planning. That is the time when fresh graduates busy searching for a good prospect job and the mid-20s are busy working hard to get promoted. The age of individuals between 31 and 50 is greatly associated to retirement. Individuals are usually more financially stable when they are about 30 years old. According to Radius Global Growth Experts (2013), private-sector workers in Malaysia can work up to 60 years old. Based on TABLE 4, the age range of above 50 years old is insignificant not only for *retirement planning* but at each financial planning. It is too late for individuals to make *retirement planning* at the age when they are nearing retirement age.

Type of education does not significantly affect financial planning except *estate planning.* This result is not consistent with the studies that states business majors are more knowledgeable than non-business majors (Beal and Delpachitra, 2003; Chen & Volpe, 1998; Volpe, Chen, & Pavlicko, 1996; Peng et al., 2007; Robb & Sharpe, 2009). Individuals can be financial literate without having to have business related education. They may gain financial knowledge through peers, experiences, jobs and

families over the years. The 'non-business related education' is found to be significant on making real estate decisions at 10% confidence level. Estate planning is one of the few most sophisticated financial planning. Individuals that have no business related background face difficulties in understanding real estate as a whole.

Income level significantly affect *credit and cash management, risk management and insurance, retirement planning, estate planning* and Stotal; income level does not significantly affect *investment* and *tax planning*. Stawski, Hershey and Jacob-Lawson (2007) and Lusardi and Mitchell (2007) supports that income level is significant on financial planning. The reason that may cause Tgap to be insignificant on *risk management and insurance* is due to the presence of numerous agents that are currently in the financial markets. They offer good financial services and help individuals to manage their risk and insurance properly. Tgap is not significant on retirement planning. Retirement planning is an essential financial planning for everyone as sooner or later, people will start to worry about their retirement plan that will guarantee their future.

4.3.4 Multicollinearity

Appendix 4.25 strives to find the existence of multicollinearity in the model. In Appendix 4.25, the listed independent variables which consist of dummy variables were used to run collinearity diagnostics test. Tgap and each dummy variable take turns to be dependent variable each time. The illustration as below:

Test 1 Dependent Variable = Tgap

Independent Variables = Female, 31-40, 41-50, >50, Sub-Business, Non-Business,

RM1,001-RM3,000, RM3,001-RM5,000,
RM5,001 RM10,000, > RM10,000

Test 2 Dependent Variable = Female

Independent Variables = Tgap, 31-40, 41-50, >50, Sub-Business, Non-Business,

RM1,001-RM3,000, RM3,001-RM5,000,
RM5,001 RM10,000, > RM10,000

The results show that there is no multicollinearity in the model. The highest VIF is 2.354 on the association of female and income level of RM5,0001 and RM10,000. The average VIF values obtained are less than 5.

4.4 Conclusion

The data set used covers 158 respondents aged 21 and above from Klang Valley in Malaysia. Several tests have been conducted to meet research objectives which are descriptive analysis, Cronbach's Alpha coefficient for reliability test, Chi-square, linear regression, Durbin-Watson test, Pearson coefficient correlation and F-statistics are being used for inferential analysis. The results of data collected will be discussed further in next chapter.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS

5.0 Introduction

After analysis and discussion of the data collected in previous chapter, this chapter will provide summary of data analysis and discuss on major finding from it. The last parts of the chapter will provide implications, limitations of the research and recommendations to overcome it for future study.

5.1 Summary of Statistical Analyses

People often perceive themselves to know more than what they actually do. They are relatively more confident towards basic financial concepts. Basic financial concepts such as percentage, inflation and time value of money, respondents were too confident whereas for advance financial concept, respondents showed high level of confidence towards risk diversification. However, respondents are not highly confident towards division. There is a huge gap between perceived financial knowledge and actual financial knowledge present in this research as more than half of the respondents are had differences in their perceived and actual financial knowledge, which are either overconfidence or under confidence.

INSERT APPENDIX 5.1

An individual's self-perception on basic financial knowledge and advance financial knowledge affect their financial planning. The actual financial

knowledge gap influences cash and credit management, estate planning, investment planning and tax management but no effect on risk and insurance management and retirement planning. Basic financial knowledge only has impact on person's investment, tax, retirement and estate planning but it do not have impact on cash and credit, risk and insurance management. Conversely, gap from advance financial knowledge has impact in all categories of financial planning.

5.2 Discussions of Major Findings

Age, income level and financial literacy are important factors that can affect financial planning of Malaysians in Klang Valley. One of the major findings of this research from the independent variables perspective is the insignificance of gender on financial planning. However, this does not conclude that gender has no significance in financial planning across other states in Malaysia. The findings of this research should be further continued and discussed. The respondents of this research were among the educated ones and this may explain partially why gender does not impact financial planning of Malaysians in Klang Valley.

The measurement of education in this research is rather specific. This research focus on whether business related education or course shows an impact on financial planning. There are many other aspects of educations can be put into considerations. Real estate is the only listed financial planning that is affected by education in this study. It will be good to narrow down and clearly find out the reason to this result. Education may show significance on financial planning in various studies but it is also important to not generalize education as a whole.

Retirement planning is affected by self-perceived and actual financial knowledge but it is not affected by actual total financial knowledge gap. The suggested implication is written in Chapter 4 yet this part needs to be proven in the future.

5.3 Implications of Study

5.3.1 Managerial Implication

This research has provided the findings on how each factor can influence the financial planning of Malaysians in Klang Valley. The result of the research is aim to provide a big picture and set short and long-term life financial goals. This research serves as a guideline to build-up fine personal financial planning. In addition, people can recognize and understand their self-perception and actual financial knowledge. By understand the gap between self-perception and actual financial knowledge, people will have a better financial planning.

5.3.2 Investors

All the investment plans depend upon the soundness of financial planning. It helps in deciding where to invest as right decision ensures smooth flow of finance and investment. By participating the financial planning, it helps to avoid shock which investors have to face in uncertain condition as in they already well prepared about the risk of the investment and have insurance as their back up. A forward looking financial plan can help investors see what expenditures need to be made to develop their finances in long term. By reviewing financial plan, investors can quickly address any financial downturn rather than being caught out by bigger problems and also assist them have a better considerate of their bottom line.

5.3.3 Individuals

This research will also help people have a better understanding about their own financial knowledge to make a good financial planning. Financial planning creates a balanced plan to meet ultimate goals, a comfortable retirement. With an unstable economy, having sufficient money to securely survive after retirement is important. Financial planning can make sure individuals will be better prepared to deal with the impact of inflation especially in retirement when there is no income anymore but expenses continues.

5.4 Limitations of the Study

5.4.1 Sample Size

Originally, this study set a minimum of 240 targeted respondents in Klang Valley. A larger sample size is encouraged to show better representation of the whole population in Klang Valley. However, due to time constraint, the return rate was only 65.8% as there were 158 respondents. The sample size of this study is still acceptable for this topic.

5.4.2 Design of Questionnaire

Although the questionnaires were directed to respondents that at least have minimal financial knowledge, many respondents complaint about the length of the questionnaire. This may increase the tendency of respondents not answering certain questions properly. Furthermore, the questions of

financial planning scorecard in Section E are not aligned before the questionnaires were being distributed to the respondents. Other questions in that section except E1 and E5 are skewed to the same direction, however E1 and E5 was the another way. This will cause difficulty and slowdown in speed when inferential tests were run. However, this mistake was spotted and the results of this study is still representative.

5.4.3 Geographical Constraints

The main focus of this study is in Klang Valley. Malaysia has thirteen states and three federal territories. Although this study only focus on Klang Valley respondents as they are more educated and well off as a whole, studying on the whole Malaysia would be a better idea. The different development, living style and culture may vary across different states in Malaysia. Nevertheless, Klang Valley is a good start point to be studied in Malaysia.

5.4.4 Changes in Current Response

This type of study has a setback as the respondents may change their behaviour over a period of time. For example, gender used to be a significant factor in affecting financial planning. The education, environment, family background and thinking of the respondents may vary. Over the times, people have changed slowly. The results of this study are representative but this cannot be used over a long period of time.

5.5 Recommendations for Future Research

5.5.1 Larger Sample Size

A larger sample size is needed in future research. The potential errors and bias may reduce as the sample size increases. With larger sample size, the result of the study will be more representative. The sample mean is likely to be closer to population mean when the sample size is larger (Saunders et al., 2009).

5.5.2 Enhance the Design of Questionnaires

For such study, the number of questions cannot be too few as it would be hard to produce significant results. However, the questionnaire can use simpler words so that respondents will not have to spend so much time while answering the questionnaire. It is also recommended that researchers should be extra cautious when it comes to scorecard. The results may distort if the mistake as mentioned above (in Limitations) is not spotted.

5.5.3 Broader Geographical Area

Researchers in the future study should consider to target all respondents in Malaysia. Most importantly, the number of questionnaire being distributed in different states of Malaysia needs to be balance. It will lead to biasness if there are more respondents of urban areas and less in rural areas. Therefore, researchers have to allocate more time in distrusting and obtaining the answered questionnaire.

5.5.4 Timely Research

This study should be continued from time to time. It will be good that researchers can carry out this research again for four subsequent years to spot the changes in respondents' behaviour. A clearer and more significant result can be produced after several years of studies. This method can help to avoid inconsistencies and inaccuracies of the results.

5.6 Conclusion

Financial planning is needed for everyone regardless his or her occupations. Through this research, readers can get a better understanding on the relationship of five main independent variables on financial planning.

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APPENDICES

Appendix 3.1: Questionnaire

We are students from Universiti Tunku Abdul Rahman (UTAR) undergoing Bachelor of Global Economics and Accounting (Hons) program. Hereby, we are doing a research regarding financial literacy and financial planning of Malaysian. The purpose of this study is to investigate whether financial planning of Malaysian can be determined by factors such as age, gender, education level and income level. This survey is private and confidential. Your responses are highly appreciated. Please tick one answer for each question unless otherwise specified. Thank you.

Section A: Demographic question

1. Gender

   ☐ Male ☐ Female

2. Age

   ☐ 21-30 ☐ 31-40 ☐ 41-50 ☐ Above 50

3. Level of qualifications

   ☐ Primary ☐ Master

   ☐ Secondary ☐ None

   ☐ Foundation/Certificates

   ☐ Undergraduate degree

   ☐ Postgraduate degree

4. Type of education

   ☐ Pure business related

   ☐ Sub-business related

   ☐ Non-business related

5. Income level

   ☐ Below RM1,000

   ☐ RM1,001-RM3,000

   ☐ RM3,001-RM5,000

   ☐ RM5,001-RM10,000

   ☐ Above RM10,000

6. Do you have children?

   ☐ Yes ☐ No

7. Are your children financially dependent upon you?

   ☐ Yes ☐ No

8. Are you employed?

   ☐ Yes, full-time

   ☐ Yes, part-time

   ☐ No, not employed

9. Are you currently retired?

   ☐ Yes, retired

   ☐ Yes, semi-retired

   ☐ No, not retired

Section B

Do you understand the following concepts?

	Yes	No
1. Numeracy- percentage		
2. Numeracy- division		
3. Compound interest		
4. Time value of money		
5. Inflation		
6. Function of stock market		
7. Knowledge of mutual funds		
8. Relationship between interest rate and bond prices		
9. Relative risk between company stock and mutual funds		
10. Relative risk between stocks and bonds		
11. Long period return		
12. Fluctuations among saving accounts, bonds and stocks		
13. The benefits of investing in ONLY one asset or MANY assets		

Section C

1. If the chance of getting a disease is 10%, how many people out of 1,000 would be expected to get the disease?

☐ 100

☐ 10

☐ 11

☐ Do not know

2. If 5 people come together and have agreed on the winning number in the lottery and the prize is RM 2 million, how much will each of them get?

☐ RM400,000

☐ RM 40,000

☐ RM2,000,000

☐ Do not know

3. Let's say you have RM200 in a savings account. The account earns 10% interest per year. How much would you have in the account at the end of two years? Assuming you did not take out the money and interest after first year.

☐ RM220

☐ RM 242

☐ RM 240

☐ Do not know

4. Suppose you have a friend inherits RM10,000 today and his siblings inherits RM10,000 after 3 years from now. Who is richer because of the inheritance?

☐ My friend

☐ His sibling

☐ They're equally rich

☐ Do not know

5. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy more than, exactly the same as, or less than today with the money in this account?

☐ More

☐ Less

☐ Exactly the same

☐ Do not know

Section D

1. Which of the following statements describes the main function of the stock market?

☐ The stock market helps to predict stock earnings

☐ The stock market results in an increase in the price of stocks

☐ The stock market allows people buy and sell stocks

☐ None of the above

☐ Do not know

2. Which of the following statements is correct?

☐ Once one invests in a mutual fund, one cannot withdraw the money in the first year

☐ Mutual funds can invest in several assets, for example invest in both stocks and bonds

☐ Mutual funds pay a guaranteed rate of return which depends on their past performance

☐ None of the above

☐ Do not know

3. If the interest rate falls, what should happen to bond prices?

☐ Rise

☐ Fall

☐ Stay the same

☐ None of the above

☐ Do not know

4. Buying a company stock usually provides a safer return than a stock mutual fund.

☐ True

☐ False

☐ Do not know

5. Stocks are normally riskier than bonds.

☐ True

☐ False

☐ Do not know

6. Considering a long time period (for example 10 or 20 years), which asset normally gives the highest return?

☐ Savings accounts

☐ Bonds

☐ Stocks

☐ Do not know

7. Normally, which asset displays the highest fluctuations over time?

☐ Savings accounts

☐ Bonds

☐ Stocks

☐ Do not know

8. When an investor spreads his money among different assets, the risk of losing money:

☐ Increase

☐ Decrease

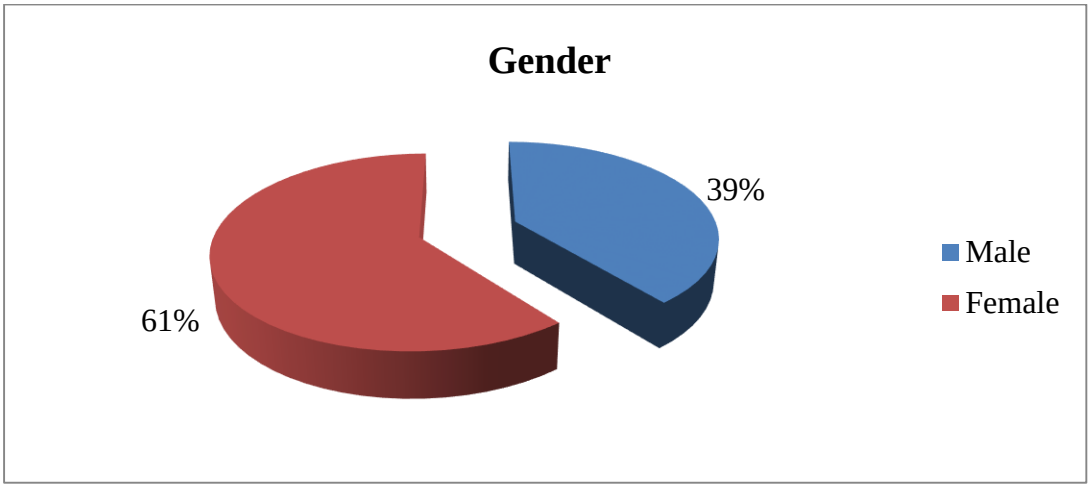
☐ Stay the same

☐ Do not know

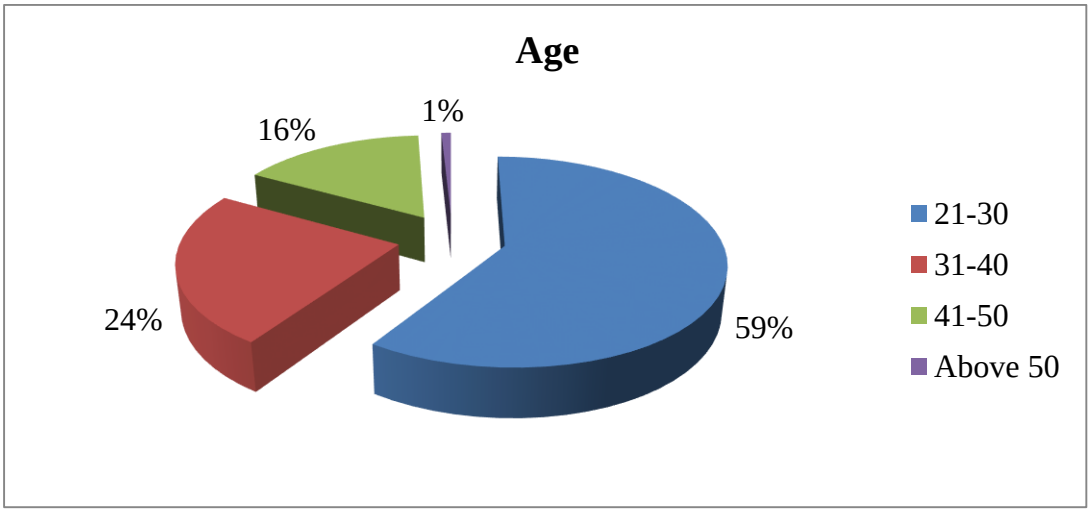
Section E: Personal Ongoing Financial Planning Scorecard

Personal Financial Planning	Strongly Disagree 1	Disagree 2	Neither Agree or disagree 3	Agree 4	Strongly Agree 5
Agree that interest charges by financial institution on credit card outstanding due balance is reasonable	1	2	3	4	5
Pay off full credit card outstanding amount every month	1	2	3	4	5
On time settlement of mortgage and hire purchase instalments	1	2	3	4	5
Agree that various personal loans available in the market is a convenient financial tool	1	2	3	4	5
Invest based on opinions of friends and family	1	2	3	4	5
Understand own risk profile	1	2	3	4	5
Have investments in different investment instruments	1	2	3	4	5
Appreciate the interest compounding effect	1	2	3	4	5
If given a lump sum money, I know how to use it properly	1	2	3	4	5
Have sufficient insurance coverage in the event of death, disability or sickness	1	2	3	4	5
Able to distinguish and name out different types of insurance in the market	1	2	3	4	5
Utilize tax relieves and rebate in filling tax return	1	2	3	4	5
Tax management is important for financial planning	1	2	3	4	5
I manage own taxes	1	2	3	4	5
Know the amount of money needed for retirement	1	2	3	4	5
Have started retirement planning	1	2	3	4	5
Have a deep thought of retirement plan	1	2	3	4	5
Money in EPF is sufficient to use during retirement	1	2	3	4	5
Have a will	1	2	3	4	5
Understand what an unit trust is	1	2	3	4	5
Personal estate planning is important	1	2	3	4	5

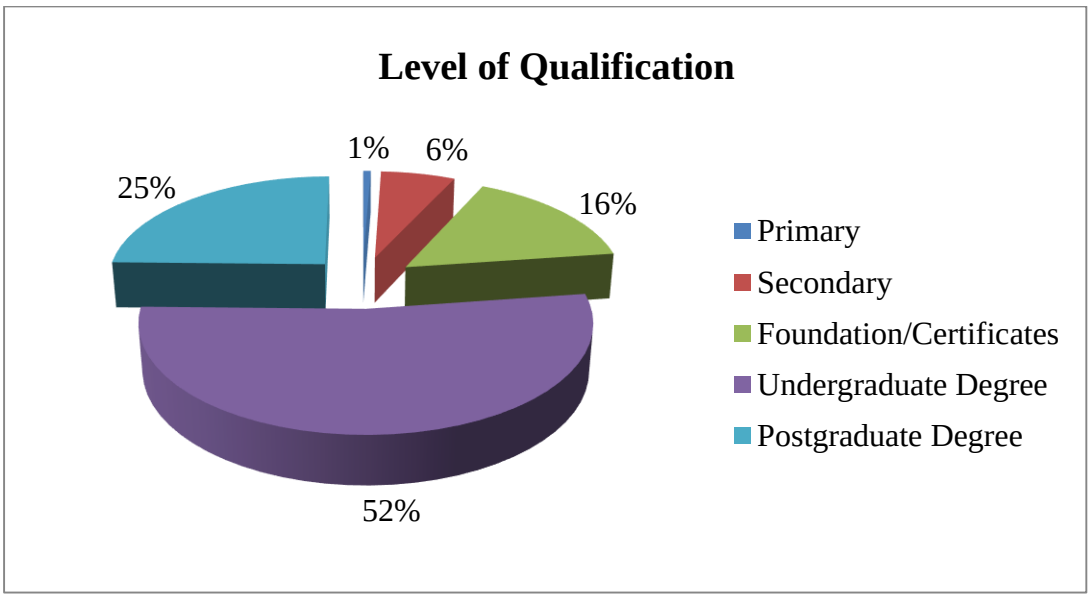
Appendix 4.1: Percentage of Respondents based on Gender



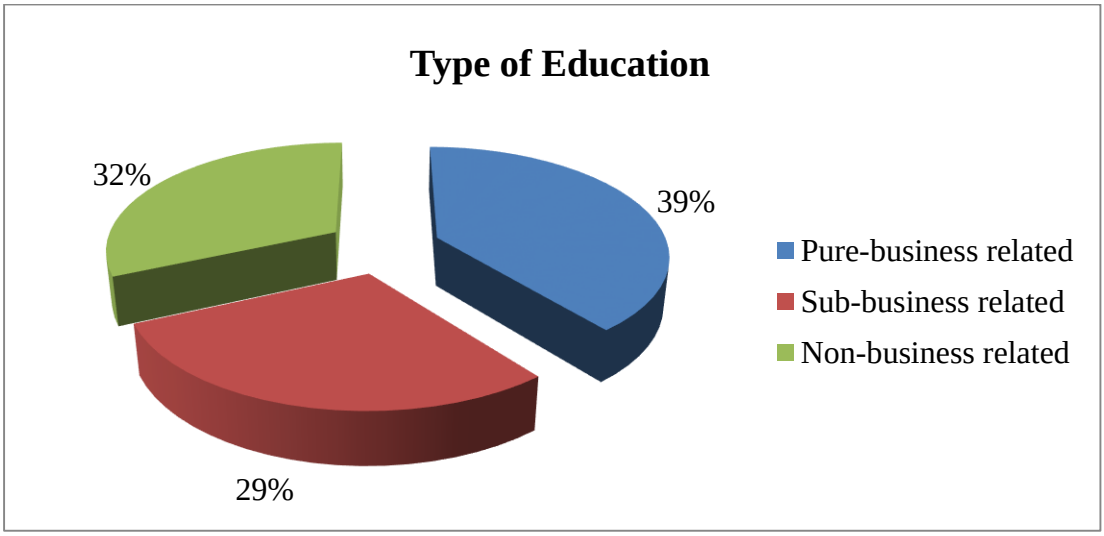
Appendix 4.2: Percentage of Respondents based on Age



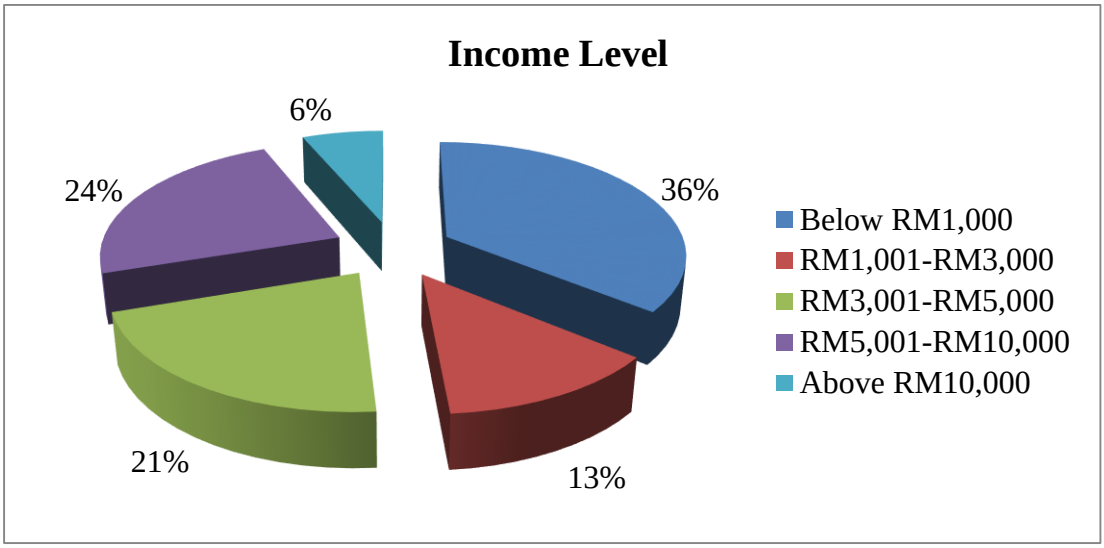
Appendix 4.3: Percentage of Respondents based on Level of Qualification



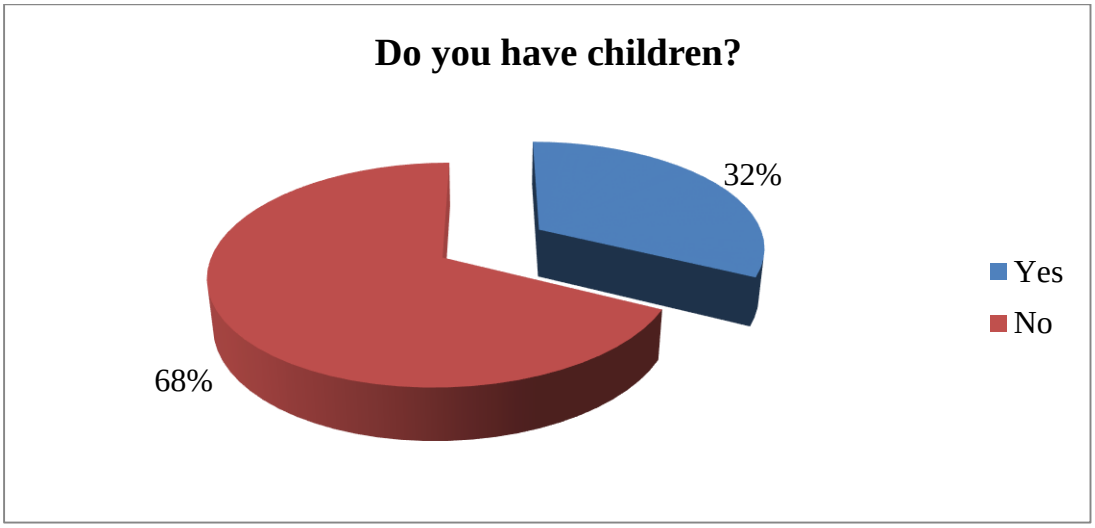
Appendix 4.4: Percentage of Respondents based on Type of Education



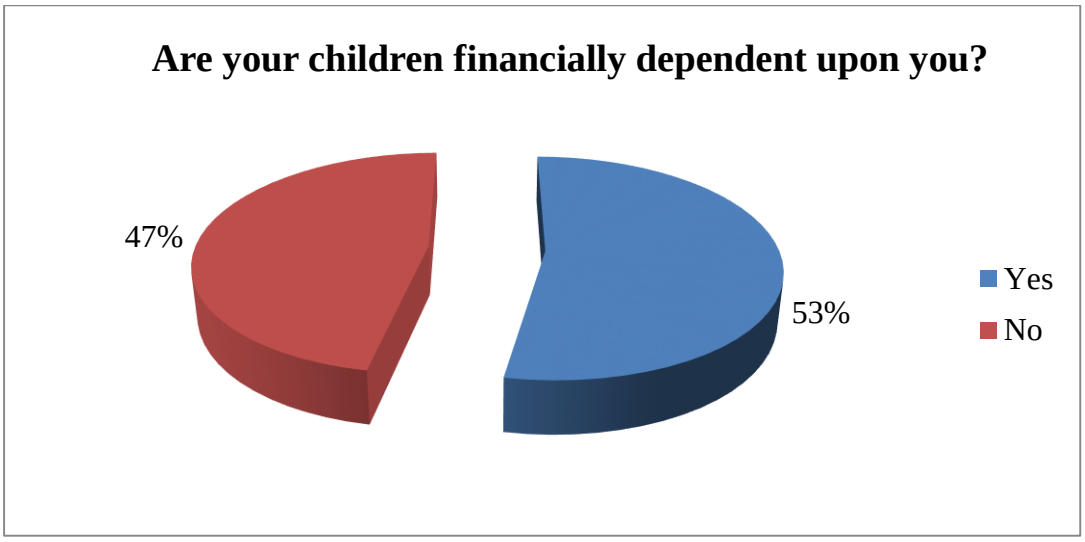
Appendix 4.5: Percentage of Respondents based on Income Level



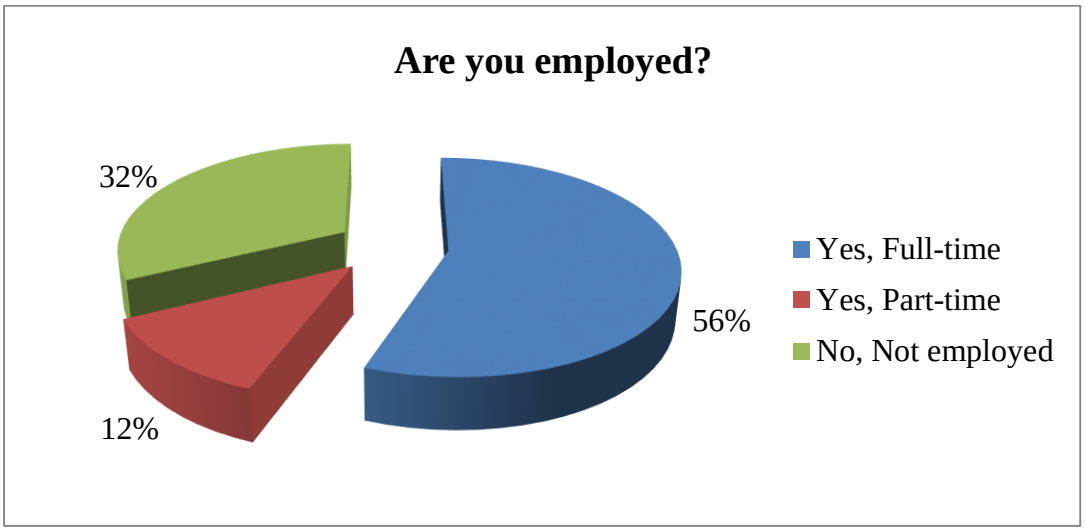
Appendix 4.6: Percentage of Respondents based on Family Status



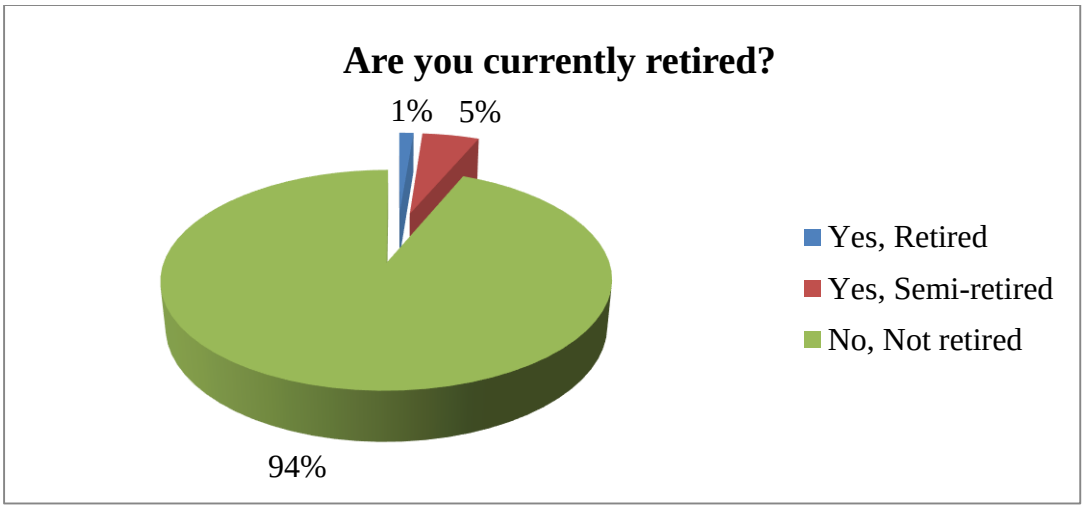
Appendix 4.7: Percentage of Respondents based on Children's Financial Independency



Appendix 4.8: Percentage of Respondents based on Employment Status



Appendix 4.9: Percentage of Respondents based on Retirement Status



Appendix 4.10: Summary of Statistic for Financial Concepts

		Frequency	Percentage (%)	Frequency	Percentage (%)
Financial Concepts		Yes		No	
1	Numeracy- Percentage	98	62.3	60	37.9
2	Numeracy- Division	83	52.53	75	47.47
3	Compound interest	127	80.38	31	19.62
4	Time value of money	142	89.87	16	10.13
5	Inflation	149	94.30	9	5.70
6	Function of stock market	118	74.68	80	50.63
7	Knowledge of mutual funds	104	65.82	54	34.18
8	Relationship between interest rate and bond prices	100	63.29	58	36.71
9	Relative risk between company stock and mutual funds	82	51.90	76	48.10
10	Relative risk between stocks and bonds	90	56.96	68	43.04
11	Long period return	138	87.34	20	12.66
12	Fluctuations among saving accounts, bonds and stocks	97	61.39	61	38.61
13	Fluctuations among saving accounts, bonds and stocks	128	81.01	30	18.99

Appendix 4.11: Summary of Statistic for Basic level Financial Questions

Basic level Financial Questions	Options	Frequency	Percentage (%)
1. If the chance of getting a disease is 10%, how many people out of 1,000 would be expected to get the disease?	**i. 100**	**147**	**93.04**
	ii. 10	7	4.43
	iii. 11	1	0.63
	iv. Do not Know	3	1.90
2. If 5 people came together and have agreed on the winning number in the lottery and the prize is RM 2million, how much will each of them get?	**i. RM400,000**	**145**	**91.77**
	ii. RM40,000	2	1.27
	iii. RM2,000,000	5	3.16
	iv. Do not know	6	3.80
3. Let's say you have RM200 in a savings account. The account earns 10% interest per year. How much would you have in the account at the end of two years? Assuming you did not take out the money and interest after first year.	i. RM220	11	6.96
	ii. RM242	**120**	**75.95**
	ii. RM240	23	14.56
	iv. Do not know	4	2.53
4. Suppose you have a friend inherits RM10,000 today and his siblings inherits RM10,000 after 3 years. Who is richer because of the inheritance?	**i. My friend**	**118**	**74.68**
	ii. His Sibling	10	6.33
	iii. They are equally rich	18	11.39
	iv. Do not know	12	7.59
5. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy more than, exactly the same as, or less than today with the money in this account	i. More	12	7.59
	ii. Less	**135**	**85.44**
	iii. Exactly the same	2	1.27
	iv. Do not know	9	5.70

Appendix 4.12: Summary of Statistic for Advance Level Financial Questions

Advance Level Financial Questions	Options	Frequency	Percentage (%)
1. Which of the following statements describes the main function of the stock market?	i. The stock market helps to predict stock earnings	10	6.33
	ii. The stock market results in an increase in the price of stocks	8	5.06
	iii. The stock market allows people buy and sell stocks	**109**	**68.99**
	iv. None of the above	12	7.59
	v. Do not know	19	12.03
2. Which of the following statements is correct?	i. Once one invests in a mutual fund, one cannot withdraw the money in the first year	6	3.80
	ii. Mutual funds can invest in several assets, for example invest in both stocks and bonds	**71**	**44.94**
	iii. Mutual funds pay a guaranteed rate of return which depends on their past performance	31	19.62
	iv. None of the above	10	6.33
	v. Do not know	40	25.32
3. If the interest rate falls, what should happen to bond prices?	**i. Rise**	**85**	**53.80**
	ii. Fall	27	17.09
	iii. Stay the same	13	8.23
	iv. None of the above	2	1.27
	v. Do not know	31	19.62
4. Buying a company stock usually provides a safer return than a stock mutual fund.	i. True	22	13.92
	ii. False	**104**	**65.82**
	iii. Do not know	32	20.25
5. Stocks are normally riskier	**i. True**	**130**	**82.28**

than bonds.	ii. False	15	9.49
	iii. Do not know	13	8.23
6. Considering a long time period (for example 10 or 20 years), which asset normally gives the highest return?	i. Savings accounts	6	3.80
	ii. Bonds	64	40.51
	iii. Stocks	**74**	**46.84**
	iv. Do not know	14	8.86
7. Normally, which asset displays the highest fluctuations over time?	i. Savings accounts	7	4.43
	ii. Bonds	10	6.33
	iii. Stocks	**124**	**78.48**
	iv. Do not know	17	10.76
8. When an investor spreads his money among different assets, the risk of losing money:	i. Increase	10	6.33
	ii. Decrease	**136**	**86.08**
	iii. Stay the same	3	1.90
	iv. Do not know	9	5.70

Appendix 4.13: Percentage of Gap between Self-perceived and Actual Financial Knowledge

	-1	**0**	**1**
Gap1	2.50%	39.90%	57.60%
Gap2	52.50%	47.50%	0.00%
Gap3	19.60%	80.40%	0.00%
Gap4	2.50%	30.40%	67.10%
Gap5	3.80%	12.70%	83.50%
Gap6	13.90%	28.50%	57.60%
Gap7	24.70%	39.90%	35.40%
Gap8	25.90%	31.00%	43.00%
Gap9	48.10%	51.90%	0.00%
Gap10	43.00%	57.00%	0.00%
Gap11	7.00%	51.90%	41.10%
Gap12	11.40%	37.30%	51.30%
Gap13	7.00%	19.00%	74.10%

-1 = Under-confident; 0 = No gap; 1 = Overconfident

Appendix 4.14: Summary of Statistic of Personal Ongoing Financial Planning Scorecard

Category		Mean	Standard Deviation	Skewness	Kurtosis
Credit and cash	1. Agree that interest charges by financial institution on credit card outstanding due balance is reasonable	3.370	1.056	-0.237	-0.479
	2. Able to pay off full credit card outstanding amount every month	3.720	1.089	-0.581	-0.184
	3. On time settlement of mortgage and hire purchase instalments	3.680	1.06	-0.361	-0.448
	4. Agree that various personal loans available in the market is a convenient financial tool	3.360	0.946	-0.689	0.408
Investment	1. Invest based on opinions of friends and family	3.070	1.107	0.004	-0.590
	2. Understand own risk profile	3.620	1.056	-0.666	0.078
	3. Have investments in different investment instruments	3.130	1.144	-0.174	-0.722
	4. Appreciate the interest compounding effect	3.480	0.969	-0.329	0.093
	5. If given a lump sum money, I know how to use it properly	3.590	1.016	-0.446	-0.359
Risk management and insurance	1. Have sufficient insurance coverage in the event of death, disability or sickness	3.000	1.106	0.057	-0.722

	2. Able to distinguish and name out sickness, death and disability insurance in the market	3.340	1.161	-0.302	-0.741
Tax	1. Utilize tax relieves and rebate in filling tax return	3.340	1.161	-0.302	-0.741
	2. Tax management is important for financial planning	3.800	0.936	-0.859	0.957
	3. I manage own taxes	3.200	1.269	-0.224	-0.814
Retirement	1. Know the amount of money needed for retirement	3.120	1.169	-0.189	-0.748
	2. Have started retirement planning	2.870	1.302	0.004	-1.121
	3. Have a deep thought of retirement plan	2.850	1.273	-0.030	-1.150
	4. Money in EPF is sufficient to use during retirement	2.500	1.099	0.336	-0.656
Estate	1. Have a will	2.580	1.379	0.255	-1.231
	2. Understand what an unit trust is	3.240	1.142	-0.173	-0.769
	3. Personal estate planning is important	3.820	1.058	-0.868	0.390

Appendix 4.15: Reliability Statistics and Item-Total Statistics for credit & cash

Reliability Statistics

Cronbach's Alpha	N of Items
0.367	4

Item-Total Statistics for Investment

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1. Agree that interest charges by financial institutions on credit card outstanding balance is reasonable	10.7532	5.334	-0.100	0.599
2. Able to pay off full credit card outstanding amount every month	10.4114	2.932	0.494	-0.103[a]
3. On time settlement of mortgage and hire purchase instalments	10.4494	3.230	0.421	0.016
4. Agree that various personal loans available in the market is a convenient financial tool	10.7658	4.741	0.078	0.416

a. The value is negative due to a negative average covariance among items. This violates reliability model assumptions. You may want to check item codings.

Appendix 4.16: Reliability Statistics and Item-Total Statistics for Investment

Reliability Statistics for Investment

Cronbach's Alpha	N of Items
0.702	5

Item-Total Statistics for Investment

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
5. Invest based on opinions of friends and family	13.8228	10.058	0.218	0.751
6. Understand own risk profile	13.2722	8.123	0.593	0.594

7. Have investments in different investment instruments	13.7658	7.887	0.562	0.604
8. Appreciate the interest compounding effect	13.4114	9.301	0.435	0.662
9. If given a lump sum money, I know how to use it properly	13.2975	8.682	0.517	0.629

Appendix 4.17: Reliability Statistics and Item-Total Statistics for Insurance

Reliability Statistics for Insurance

Cronbach's Alpha	N of Items
0.570	2

Item-Total Statistics for Insurance

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
10. Have sufficient insurance coverage in the event of death, disability or sickness	3.00	1.223	0.398	.
11. Able to distinguish and name out sickness, death and disability insurances in the market	3.58	1.176	0.398	.

Appendix 4.18: Reliability Statistics and Item-Total Statistics for Tax

Reliability Statistics for tax

Cronbach's Alpha	N of Items
0.736	3

Item-Total Statistics for tax

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
12. Utilize tax relieves and rebate in filling tax return	6.99	3.178	0.724	0.435

13. Tax management is important for financial planning	6.54	4.823	0.444	0.773
14. I manage own taxes	7.14	3.356	0.550	0.675

Appendix 4.19: Reliability Statistics and Item-Total Statistics for Retirement

Reliability Statistics for Retirement

Cronbach's Alpha	N of Items
0.841	4

Item-Total Statistics for Retirement

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
15. Know the amount of money needed for retirement	8.22	9.558	0.696	0.790
16. Have started retirement planning	8.47	8.200	0.813	0.733
17. Have a deep thought of retirement plan	8.49	8.493	0.788	0.746
18. Money in EPF is sufficient to use during retirement	8.84	11.552	0.428	0.892

Appendix 4.20: Reliability Statistics and Item-Total Statistics for Estate planning

Reliability Statistics for Estate Planning

Cronbach's Alpha	N of Items
0.630	3

Item-Total Statistics for Estate Planning

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
19. Have a will	7.06	3.621	0.368	0.661
20. Understand what an unit trust is	6.40	3.872	0.507	0.440
21. Personal Estate planning is important	5.82	4.287	0.468	0.504

Appendix 4.21: Self perceived financial knowledge on financial planning

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13
E1	0.503	0.257	0.672	0.343	0.602	0.311	0.825	0.687	0.019**	0.622	0.260	0.152	0.746
E2	0.441	0.132	0.290	0.323	0.415	0.233	0.068*	0.762	0.436	0.798	0.385	0.279	0.093*
E3	0.183	0.319	0.206	0.698	0.730	0.174	0.439	0.686	0.457	0.318	0.426	0.112	0.058*
E4	0.200	0.308	0.174	0.102	0.181	0.006***	0.376	0.177	0.052*	0.259	0.038**	0.036**	0.120
E5	0.185	0.061*	0.124	0.192	0.854	0.054*	0.341	0.080*	0.107	0.232	0.551	0.069*	0.213
E6	0.114	0.029**	0.379	0.773	0.700	0.009***	0.111	0.837	0.742	0.713	0.287	0.108	0.050*
E7	0.063*	0.242	0.285	0.104	0.741	0.005***	0.018**	0.054*	0.017**	0.036**	0.173	0.000***	0.468
E8	0.002***	0***	0.007***	0.478	0.474	0.020**	0.085*	0.122	0.001***	0.001***	0.274	0.147	0.012**
E9	0.526	0.938	0.022**	0.634	0.359	0.000***	0.031**	0.07*	0.112	0.260	0.031**	0.019**	0.394
E10	0.943	0.951	0.296	0.749	0.623	0.485	0.645	0.470	0.048**	0.417	0.495	0.179	0.699
E11	0.595	0.233	0.206	0.467	0.381	0.611	0.162	0.915	0.290	0.641	0.640	0.039**	0.526
E12	0.120	0.091*	0.156	0.316	0.620	0.044**	0.199	0.688	0.254	0.736	0.091*	0.137	0.190
E13	0.069*	0.303	0.000***	0.004***	0.784	0.138	0.294	0.142	0.002***	0.150	0.082*	0.017**	0.012**
E14	0.673	0.519	0.348	0.854	0.286	0.866	0.178	0.886	0.337	0.804	0.786	0.259	0.313
E15	0.058*	0.078*	0.247	0.592	0.041**	0.054*	0.055*	0.508	0.667	0.827	0.127	0.079*	0.294
E16	0.007***	0.008***	0.005***	0.048**	0.107	0.539	0.033**	0.437	0.255	0.172	0.043**	0.437	0.214
E17	0.029**	0.042**	0.009***	0.359	0.141	0.058*	0.051*	0.360	0.009***	0.201	0.007***	0.087*	0.001***
E18	0.575	0.321	0.247	0.361	0.266	0.097*	0.304	0.597	0.141	0.220	0.418	0.846	0.832
E19	0.118	0.046**	0.532	0.337	0.603	0.609	0.607	0.955	0.736	0.582	0.525	0.547	0.979
E20	0.189	0.021**	0.279	0.076*	0.705	0.128	0.000***	0.264	0.023**	0.110	0.193	0.008***	0.216
E21	0.150	0.018**	0.409	0.842	0.356	0.143	0.602	0.642	0.375	0.232	0.512	0.263	0.100

* Significance level at α = 10 % ; ** Significance level at α = 5% ; *** Significance level at α = 1%

Appendix 4.22: Actual basic financial knowledge on financial planning

	Gap1	Gap2	Gap3	Gap4	Gap5
E1	0.290	0.257	0.672	0.565	0.567
E2	0.610	0.132	0.290	0.431	0.965
E3	0.509	0.319	0.206	0.744	0.882
E4	0.390	0.308	0.174	0.112	0.209
E5	0.520	0.061*	0.124	0.042**	0.910
E6	0.713	0.029**	0.379	0.335	0.046**
E7	0.418	0.242	0.285	0.906	0.540
E8	0.202	0.000***	0.007***	0.062*	0.046**
E9	0.126	0.938	0.022**	0.087*	0.119
E10	0.930	0.951	0.296	0.377	0.257
E11	0.316	0.233	0.206	0.222	0.101
E12	0.575	0.091*	0.156	0.122	0.018**
E13	0.320	0.303	0.000***	0.140	0.004***
E14	0.476	0.519	0.348	0.408	0.154
E15	0.419	0.078*	0.247	0.209	0.167
E16	0.033**	0.008***	0.005***	0.003***	0.682
E17	0.060*	0.042**	0.009***	0.001***	0.367
E18	0.073*	0.321	0.247	0.203	0.156
E19	0.073*	0.046**	0.532	0.125	0.523
E20	0.520	0.021**	0.279	0.793	0.235
E21	0.256	0.018**	0.409	0.503	0.393

* Significance level at α = 10%

** Significance level at α = 5%

*** Significance level at α = 1%

Appendix 4.23: Actual Advance financial literacy on Financial Planning

	Gap6	Gap7	Gap8	Gap9	Gap10	Gap11	Gap12	Gap13
E1	0.454	0.516	0.908	0.019**	0.622	0.507	0.245	0.483
E2	0.100	0.231	0.558	0.436	0.798	0.225	0.763	0.591
E3	0.049**	0.382	0.222	0.457	0.318	0.551	0.554	0.313
E4	0.04**	0.103	0.235	0.052*	0.259	0.099*	0.098*	0.111
E5	0.193	0.310	0.197	0.107	0.232	0.186	0.027**	0.259
E6	0.014**	0.047**	0.757	0.742	0.713	0.482	0.218	0.066*
E7	0.007***	0.006***	0.127	0.017**	0.036**	0.356	0.035**	0.190
E8	0.028**	0.012**	0.035**	0.001***	0.001***	0.212	0.017**	0.017**
E9	0.036**	0.086*	0.174	0.112	0.260	0.206	0.023**	0.485
E10	0.777	0.976	0.449	0.048**	0.417	0.471	0.037**	0.701
E11	0.672	0.426	0.802	0.290	0.641	0.063*	0.019**	0.015**
E12	0.057*	0.747	0.261	0.254	0.736	0.114	0.066*	0.003***
E13	0.059*	0.561	0.451	0.002***	0.150	0.160	0.057*	0.005***
E14	0.294	0.407	0.647	0.337	0.804	0.803	0.093*	0.348
E15	0.047**	0.174	0.555	0.667	0.827	0.035**	0.190	0.265
E16	0.163	0.381	0.015**	0.255	0.172	0.159	0.712	0.177
E17	0.073*	0.576	0.004***	0.009***	0.201	0.012**	0.445	0.008***
E18	0.258	0.022**	0.026**	0.141	0.220	0.316	0.626	0.144
E19	0.905	0.509	0.875	0.736	0.582	0.384	0.058*	0.190
E20	0.201	0.003***	0.417	0.023**	0.110	0.051*	0.026**	0.487
E21	0.089*	0.485	0.780	0.375	0.232	0.167	0.003***	0.101

* Significance level at α = 10%

** Significance level at α = 5%

*** Significance level at α = 1%

Appendix 4.24: Correlation of Coefficients

Dependent	Scash	Scash	Sinvest	Sinvest	Sinsurance	Sinsurance	Stax	Stax	Sretire	Sretire	Sesate	Sestate	Stotal	Stotal
Coefficients of Independent Variables														
Tgap	0.003	0.006 **	0.013***	0.014***	0.002	0.003	0.012***	0.015***	-0.004	0.001	0.010**	0.015***	0.006**	0.009***
Female		0.032		-0.031		-0.032		-0.038		-0.025		-0.023		-0.018
31-40		-0.003		0.067		0.058		0.016		0.191***		0.075		0.070*
41-50		0.028		0.113**		0.099		0.049		0.205***		0.110*		0.103**
>50		-0.069		0.010		0.022		-0.085		0.090		0.063		0.005
Sub-Business		-0.003		-0.014		-0.015		0.031		0.000		0.051		0.006
Non-Business		-0.019		-0.009		-0.040		-0.210		0.018		0.079*		0.002
RM1,001-RM3,001		0.046		-0.006		0.124**		0.061		0.028		-0.005		0.033
RM3,001-RM5,000		0.157***		0.027		0.111*		0.199***		0.060		0.061		0.096**
RM5,001-RM10,000		0.124***		0.003		0.081		0.165***		0.043		-0.043		0.058
> RM10,000		0.113*		-0.038		0.028		0.092		0.001		-0.195**		0.001
Standard Error	0.152	0.140	0.171	0.170	0.229	0.224	0.223	0.210	0.250	0.234	0.224	0.222	0.154	0.145
r^2	0.009	0.206	0.092	0.161	0.002	0.108	0.054	0.215	0.004	0.186	0.033	0.116	0.03	0.197
Adjusted r^2	0.003	0.147	0.086	0.098	-0.005	0.041	0.048	0.156	-0.003	0.125	0.027	0.049	0.024	0.137
F statistic	1.437	3.451***	15.783***	2.552***	0.239	1.614	8.931***	3.641***	0.593	3.038***	5.362**	1.736*	4.865**	3.261***
Durbin Watson	2.315	2.204	1.982	1.993	1.924	1.942	2.322	2.412	1.978	2.229	1.874	1.956	2.016	2.109
n	158	158	158	158	158	158	158	158	158	158	158	158	158	158

* Significance level at α = 10 % ; ** Significance level at α = 5% ; *** Significance level at α = 1%

Appendix 4.25: Multicollinearity test

	Tgap	**Female**	**31-40**	**41-50**	**>50**	**Sub-Business**	**Non-Business**	**RM1,001-RM3,001**	**RM3,001-RM5,000**	**RM5,001-RM10,000**	**> RM10,000**
Tgap		1.306	1.315	1.334	1.327	1.307	1.152	1.336	1.293	1.331	1.328
Female	1.048		1.065	1.072	1.071	1.073	1.061	1.067	1.073	1.073	1.069
31-40	1.853	1.871		1.383	1.513	1.857	1.882	1.682	1.542	1.268	1.443
41-50	1.692	1.694	1.245		1.418	1.662	1.677	1.586	1.46	1.141	1.361
>50	1.456	1.464	1.178	1.227		1.467	1.452	1.413	1.265	1.171	1.297
Sub-Business	1.293	1.322	1.304	1.296	1.322		1.028	1.319	1.319	1.291	1.277
Non-Business	1.342	1.541	1.556	1.54	1.542	1.211		1.551	1.555	1.529	1.502
RM1,001-RM3,001	1.362	1.356	1.217	1.275	1.313	1.36	1.357		1.119	1.09	1.197
RM3,001-RM5,000	1.721	1.78	1.457	1.532	1.535	1.775	1.776	1.46		1.217	1.454
RM5,001-RM10,000	2.343	2.354	1.584	1.583	1.879	2.299	2.311	1.882	1.61		1.697
> RM10,000	1.632	1.637	1.258	1.318	1.452	1.586	1.59	1.443	1.343	1.185	

Multicollinearity is found when VIF > 10 in big sample size research or VIF > 5 in small sample size research.

Appendix 5.1: Actual Financial Knowledge Gap

Gap between perceived and actual financial knowledge

Under-confidence	No gap	Overconfidence
20%	40%	40%

Source: Development for the research