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**INDIVIDUAL RETIREMENT SAVINGS BEHAVIOUR:
EVIDENCE FROM MALAYSIA**

NURASYIKIN JAMALUDIN

A thesis submitted in partial fulfilment of the
requirements for the degree of

Doctor of Philosophy

**School of Accounting, Finance and Economics
Faculty of Business and Law
Edith Cowan University, Perth
Western Australia**

2012

**INDIVIDUAL RETIREMENT SAVINGS BEHAVIOUR:
EVIDENCE FROM MALAYSIA**

**School of Accounting, Finance and Economics
Faculty of Business and Law
Edith Cowan University, Perth
Western Australia**

Principal Supervisor:

PROFESSOR MALCOLM SMITH

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2012

USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

ABSTRACT

This thesis investigates factors that influence individuals' investment choice decisions within the context of retirement savings in Malaysia. The focus is on individuals' likelihood of investing part of their retirement savings in approved unit trusts (also known as mutual funds). In addition, individuals' choice of fund and mutual fund selection criteria are also explored.

This thesis utilised questionnaire-based surveys to solicit responses from members of the Employees Provident Fund (EPF), as well as from unit trust consultants. Data collected from 440 EPF members and 561 unit trust consultants were analysed using statistical procedures of SPSS version 18.0 (also known as PASW 18).

The results of logistic regression models revealed three significant predictors of individuals' likelihood to invest part of their retirement savings in the unit trusts: perceived importance of financial advisor, financial risk tolerance, and perceived plan design. Financial knowledge appeared to be insignificant in influencing individuals' investment choice decision. Furthermore, the thesis found that religious affiliation, religious commitment and Muslim religiosity had no significant effect in individuals' investment choice decision. In terms of demographic variables, gender, age, and marital status were all found to be significant predictors of individuals' likelihood to invest part of their retirement savings in the unit trusts.

With respect to mutual fund selection criteria, the thesis found that the fund's commitment to Islamic principles, past performance of fund and overall reputation of fund were the top three criteria considered important by the EPF members. In contrast, from the consultants' point of view, the top three criteria considered important were the past performance of fund, overall reputation of fund, and fund ratings.

Although the earlier results indicated no significant effect of religion on the individuals' likelihood to invest part of their retirement savings in the unit trusts, additional analyses revealed that religious affiliation, religious commitment, and Muslim religiosity had significant influence on the individuals' choice of unit trust fund.

Several implications emerge from these empirical findings. First, the thesis highlighted the role of the unit trust consultants in individuals' investment decision making. Therefore, fund management companies and the governing body of the unit trust consultants should ensure that ongoing training is provided so that proper advice and recommendations can be delivered to the consultants' clients. Next, the thesis provided insightful information to the EPF as the policy maker, on the retirement savings behaviour of its members. In particular, the study presented the first evidence with regard to the EPF Members Investment Scheme (MIS), a unique feature that differentiated this retirement plan from its counterparts in emerging countries, as well as developed countries. Last, but not least, given that Malaysia is a multi-cultural nation, the findings of the thesis suggest that religion had some effect on individuals' choice of fund. Therefore, fund management companies might make use of the information provided by the thesis in better promoting their funds.

DECLARATION

I certify that this thesis does not, to the best of my knowledge and belief:

- (i) Incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;
- (ii) Contain any material previously published or written by another person except where due reference is made in the text; or
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Some sections of this thesis have already been presented in a doctoral colloquium and as a conference paper and conference proceeding:

Doctoral Colloquium

Jamaludin, N., Clark-Murphy, M., and Gerrans, P., (2009), “Retirement savings behaviour: Evidence from Malaysia”. *Presentation at the Doctoral Colloquium: 11th Malaysian Finance Association (MFA) Conference 2009*, 3 – 5 June 2009, Penang, Malaysia.

Conference paper and conference proceeding

Jamaludin, N., and Smith, M., (2011), “Choice criteria for mutual fund investment: A study in Malaysia”. *Proceedings of the 1st International Conference on Accounting, Business and Economics (ICABEC 2011)*, 1-2 November, Primula Hotel, Kuala Terengganu, Terengganu Darul Iman, Malaysia.

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TABLE OF CONTENTS

USE OF THESIS	ii
ABSTRACT	iii
DECLARATION	v
ACKNOWLEDGEMENT	vii
LIST OF TABLES	xiii
LIST OF FIGURES	xvi
CHAPTER ONE: INTRODUCTION	1
1.1 Introduction	1
1.2 Background of the Study	1
1.3 Research Questions	8
1.4 Rationale and Significance of the Study	10
1.5 Research Method	11
1.6 Structure of the Thesis	11
1.7 Summary	12
CHAPTER 2: LITERATURE REVIEW	13
2.1 Introduction	13
2.2 Employees Provident Fund (EPF) – An Overview	13
2.2.1 Coverage	14
2.2.2 Contribution	14
2.2.3 Structure of EPF Members’ Account	15
2.2.4 Investment	16
2.2.5 Dividends (Interest).....	18
2.2.6 Taxation	18
2.3 Theoretical Considerations	19
2.3.1 Traditional Finance and the Development of Behavioural Finance	19
2.4 Religion and Investor Behaviour	21
2.4.1 Definition of Religion	22
2.4.2 Religious Affiliation and Religiosity	23
2.4.3 Measurement of Religiosity	26
2.4.4 Islamic Beliefs	31
2.5 Factors Influencing Retirement Savings Investment Choice Decisions	32

2.5.1 Financial and Investment Knowledge	32
2.5.2 Financial Advisor	34
2.5.3 Financial Risk Tolerance	36
2.5.4 Plan Design	37
2.5.5 Demographics	37
2.5.6 Other Determinants of Retirement Savings Investment Choice Decision.....	38
2.6 Mutual Fund Selection Criteria	40
2.6.1 Islamic Fund	44
2.7 Summary	45
CHAPTER THREE: HYPOTHESES DEVELOPMENT	47
3.1 Introduction	47
3.2 Conceptual Model and Hypotheses Development	47
3.2.1 Dependent Construct: Retirement Savings Investment Choice Decision	48
3.2.2 Determinants of Retirement Savings Investment Choice Decision	49
3.2.2.1 Religion	49
3.2.2.2 Religious Affiliation	49
3.2.2.3 Religiosity	50
3.2.2.4 Financial Advisor	50
3.2.2.5 Financial Risk Tolerance	51
3.2.2.6 Financial and Investment Knowledge	52
3.2.2.7 Perceived Plan Design	52
3.2.2.8 Demographics	53
3.2.3 Mutual Fund Selection Criteria	54
3.2.4 Choice of Fund	55
3.3 Summary	56
CHAPTER FOUR: RESEARCH METHODOLOGY	57
4.1 Introduction	57
4.2 Research Design	57
4.3 Development of Questionnaire Survey	57
4.3.1 Survey for EPF Members	58
4.3.1.1 Demographics	58
4.3.1.2 Retirement Savings Behaviour	59
4.3.1.3 Financial Information Sources	61
4.3.1.4 Financial Advisor	61

4.3.1.5 Fund Selection Criteria	61
4.3.1.6 Financial and Investment Knowledge	62
4.3.1.7 Financial Risk Tolerance	62
4.3.1.8 Religiosity	63
4.3.2 Survey for Unit Trust Consultants	65
4.3.2.1 Demographics	65
4.3.2.2 Employment	65
4.3.2.3 Members Investment Scheme (MIS)	65
4.3.2.4 Financial Information Sources	66
4.3.2.5 Fund Selection Criteria	66
4.3.2.6 Religiosity	67
4.4 Sampling	68
4.4.1 EPF Members	68
4.4.2 Unit Trust Consultants	68
4.5 Data Collection Procedure	69
4.5.1 Pilot Questionnaire	69
4.5.2 Survey for EPF Members	69
4.5.3 Survey for Unit Trust Consultants	70
4.5.4 Response Rate	71
4.5.4.1 Response Rate for Member Survey.....	71
4.5.4.2 Response Rate for Consultant Survey.....	71
4.6 Data Analysis	71
4.6.1 Reliability	72
4.6.2 Validity	72
4.6.2.1 Content Validity	73
4.6.2.2 Criterion-related Validity	73
4.6.2.3 Construct Validity.....	73
4.6.3 Analytical Procedure for Quantitative Data	73
4.7 Ethical Considerations	74
4.8 Summary	74
CHAPTER FIVE: DATA ANALYSIS AND RESULTS	75
5.1 Introduction	75
5.2 Descriptive Analyses for Member Survey	75
5.2.1 Respondents' Profile – EPF Members	76
5.2.2 Retirement Savings Behaviour	80

5.2.3 Members Investment Scheme (MIS)	83
5.2.4 Financial Information Sources	87
5.3 Preliminary Analyses	88
5.3.1 Normality Analysis	89
5.3.2 Reliability Analysis	91
5.3.3 Data Validity	91
5.4 Bivariate Correlation	91
5.5 Binary Logistic Regression	95
5.5.1 Assumption of Logistic Regression	95
5.5.1.1 Sample Size	96
5.5.1.2 Multicollinearity	96
5.5.1.3 Outliers	97
5.5.2 Model (1)	97
5.5.3 Model (2)	100
5.5.4 Hypotheses Testing	102
5.5.4.1 Religion and Investment Choice Decision	102
5.5.4.2 Financial Advisor and Investment Choice Decision	103
5.5.4.3 Financial Risk Tolerance and Investment Choice Decision	103
5.5.4.4 Financial Knowledge and Investment Choice Decision	103
5.5.4.5 Perceived Plan Design and Investment Choice Decision	104
5.5.4.6 Demographics and Investment Choice Decision	104
5.6 Additional Analyses	106
5.7 Mutual Fund Selection Criteria	111
5.8 Choice of Fund	113
5.9 Descriptive Analyses for Consultant Survey	118
5.9.1 Respondents' Profile – Unit Trust Consultants	118
5.9.2 EPF Members Investment Scheme (MIS)	121
5.9.3 Financial Information Sources	123
5.9.4 Mutual Fund Selection Criteria	125
5.9.5 Religious Commitment Inventory (RCI-10)	129
5.9.6 Muslim Religiosity	131
5.10 Summary	132
CHAPTER SIX: DISCUSSION AND CONCLUSION	138
6.1 Introduction	138
6.2 Discussion of Research Findings	138

6.2.1 Religion and Investment Choice Decision (H1, H2a, H2b).....	138
6.2.2 Financial Advisor and Investment Choice Decision (H3).....	140
6.2.3 Financial Risk Tolerance and Investment Choice Decision (H4).....	140
6.2.4 Financial Knowledge and Investment Choice Decision (H5).....	141
6.2.5 Perceived Plan Design and Investment Choice Decision (H6a, H6b).....	141
6.2.6 Demographics and Investment Choice Decision (H7).....	142
6.2.7 Mutual Fund Selection Criteria – Members’ Perspective (H8).....	143
6.2.8 Mutual Fund Selection Criteria – Advisors’ Perspective (H9).....	143
6.2.9 Religion and Choice of Fund (H10, H11a, H11b).....	143
6.3 Implications of the Study	144
6.3.1 Theoretical implications	144
6.3.2 Practical implications	145
6.4 Limitations of the Study	146
6.5 Suggestions for Future Research	147
6.6 Summary	148
REFERENCES	149
APPENDICES	157
Appendix 1: Required Basic Savings of EPF Member Account	158
Appendix 2: Information Letter and Member Survey	159
Appendix 3: Information Letter and Consultant Survey	169

LIST OF TABLES

Table 1.1: Statistics on the Malaysian unit trust industry from 31 December 2004 to 30 th April 2011	7
Table 2.1: Contribution rates to individual EPF member's account	15
Table 2.2: Asset allocation of EPF Investments from 2006-2010	17
Table 2.3: Dividend rates paid to individual EPF members	19
Table 2.4: The religious orientation scale (I-E scale)	28
Table 2.5: Measurement of Shinto and Protestant religiosity	29
Table 2.6: Religiosity Index	31
Table 4.1: Structure of the questionnaire for EPF members	64
Table 4.2: Structure of the questionnaire for Unit Trust Consultants (UTCs)	67
Table 4.3: Reliability Analysis for Pilot Test	72
Table 5.1: Panel A: Members' Profiles: Gender	76
Table 5.1: Panel B: Members' Profiles: Marital status	76
Table 5.1: Panel C: Members' Profiles: Age group	76
Table 5.1: Panel D: Members' Profiles: Ethnicity	77
Table 5.1: Panel E: Members' Profiles: Religious affiliation	77
Table 5.1: Panel F: Members' Profiles: Highest education	78
Table 5.1: Panel G: Members' Profiles: EPF membership	78
Table 5.1: Panel H: Members' Profiles: Monthly income	78
Table 5.1: Panel I: Members' Profiles: Total EPF savings	79
Table 5.1: Panel J: Members' Profiles: Total wealth	79
Table 5.2: Perceived level of savings	80
Table 5.3: Perceived knowledge of EPF's investment philosophy/policy	82
Table 5.4: Responses to EPF's consideration in making investments	82
Table 5.5: Mean analysis of EPF's investment philosophy/policy (N=440)	83
Table 5.6: Crosstabulation of MIS awareness*Source of awareness	83
Table 5.7: Perceived importance of investing in the unit trusts under the MIS	85
Table 5.8 Responses to Investing in Unit Trusts (N=440)	86
Table 5.9: Panel A: Perceived investment choice limit	87
Table 5.9: Panel B: Perceived range of approved funds	87
Table 5.10: Sources of financial information (N=440)	88
Table 5.11: Mean analysis for importance of financial information source	88
Table 5.12: Normality Assessments	90
Table 5.13: Ratio of Mean and Standard Deviation of Variables	90

Table 5.14: Reliability Analysis	91
Table 5.15: Spearman’s rho Bivariate Correlation Matrix	94
Table 5.16: Classification Table for Model (1)	98
Table 5.17: Logistic Regression Results for Model (1)	98
Table 5.18 Classification Table for Model (2)	101
Table 5.19: Logistic Regression Results for Model (2)	101
Table 5.20: Religious affiliation*Investment Decision Crosstabulation	106
Table 5.21: Religiousgroup* Investment Decision Crosstabulation	107
Table 5.22: RCI group of EPF members (N=439)	108
Table 5.23: RCIgroup * Investment Choice Decision Crosstabulation	109
Table 5.24: Muslim Religiosity Group (N=346)	110
Table 5.25: Scoremuslimgroup * Investment Choice Decision Crosstabulation	111
Table 5.26: Ranking importance of fund selection criteria among EPF members	112
Table 5.27: Importance of fund selection criteria between Muslims and non-Muslims members	112
Table 5.28: Type of religious affiliation*Category of fund Crosstabulation	114
Table 5.29: Religiousgroup* Category of fund Crosstabulation	114
Table 5.30: Symmetric Measures	115
Table 5.31: RCI*Category of fund Crosstabulation	116
Table 5.32: Muslim_Religiosity*Category of fund Crosstabulation	116
Table 5.33 Muslim_Religiosity*Category of fund Crosstabulation	117
Table 5.34: Perception of Investment in Islamic Fund between Muslims and non-Muslims	117
Table 5.35: Demographic characteristics of unit trust consultants	119
Table 5.36: Tabulation of UTC according to their principals	120
Table 5.37: Statistics on clients under MIS	121
Table 5.38: Clients’ perceived importance of investing in the unit trusts under the MIS (Based on Consultants’ View)	121
Table 5.39: Perceived range of unit trust funds	122
Table 5.40: Mean analysis for importance of financial information source (N =561).....	123
Table 5.41: Respondents’ view on clients’ perceived importance of consultants’ attributes (N = 561)	124
Table 5.42: Respondents’ own perceived importance of consultants’ attributes (N = 561)	125
Table 5.43: Ranking importance of fund selection criteria: Unit trust consultants’ view of their clients’ perception (N = 561)	126
Table 5.44: Ranking importance of fund selection criteria: Unit trust consultants’ view (N = 561)	126
Table 5.45: Perceived Importance of fund selection criteria between Muslim and non Muslim consultants	127
Table 5.46 Perception of Investment in Islamic Fund between Muslim and non-Muslim Consultants	128

Table 5.47: Importance of knowledge of Islamic principles*Knowledge acquirement of Islamic fund Crosstabulation	128
Table 5.48: Responses to understanding the differences between Islamic fund and Conventional fund	129
Table 5.49: Recommendation of Islamic fund	129
Table 5.50: RCI group (N=551)	130
Table 5.51: RCI group*Recommendation of Islamic fund Crosstabulation	130
Table 5.52: Muslim religiosity (N=138)	132
Table 5.53: Islamic fund knowledge acquirement*Muslim_religiosity crosstabulation ..	132
Table 5.54: Results of Hypotheses Tests	135

LIST OF FIGURES

Figure 1.1: Overview of EPF member account	3
Figure 1.2: Conceptual model of retirement savings investment choice decision	9
Figure 3.1: Conceptual model of retirement savings investment choice decision	48
Figure 3.2: Choice of fund	55
Figure 5.1: Perceived level of investment risk in the EPF	81
Figure 5.2: Perceived returns/dividend of the EPF	81
Figure 5.3: Eligibility of MIS Withdrawal	84
Figure 5.4: Tabulation of Score RCI-10 for EPF Members	108
Figure 5.5: Tabulation of Muslim religiosity scores	110
Figure 5.6: Perceived level of investment choice	122
Figure 5.7: Tabulation of RCI-10 scores among UTC	130
Figure 5.8: Tabulation of Muslim religiosity scores among the Muslim consultants.	131

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This thesis investigates individual retirement savings behaviour in Malaysia and the motivating factors that influence their investment choice decision. This first chapter aims to provide an overview of the thesis and its structural scheme. It is organised as follows. Section 1.2 introduces the background of retirement savings in Malaysia, followed by issues related to retirement savings investment choice decision. Section 1.3 outlines the research questions and the conceptual model of the study. Section 1.4 presents the rationale and significance of the study. Section 1.5 briefly describes the research methodology for the study. Section 1.6 outlines the structure of the thesis. Section 1.7 summarises this introductory chapter.

1.2 Background of the Study

In recent years, the issue of ensuring adequate retirement incomes has received more attention, as a result of an ageing population. A significant trend has been the shift away from defined benefit (DB) plans towards defined contribution (DC) plans. In the US for example, Dulebohn, Murray and Sun (2000) reported a growth of DC plans and a decline in DB plans. In DC plans such as 401(k) plans, the responsibility for managing retirement funds is shifted from government or employer to the individual fund member. In line with this shift, members have choices to make about how much to invest and the allocation of those investment assets. The issue of increasing concern includes what factors influence the choice being made by members.

Like other countries, Malaysia is experiencing longer life expectancy as well as ageing of the population. The life expectancy at birth in 2008 was 71.9 years for males and 76.4 years for females¹, as compared to 62.2 years for males and 66.5 years for females in 1970. Based on the statistics issued by the World Bank, 8% of its total population

¹ Department of Statistics Malaysia, 2008.

would be aged 60 years and above by 2010 and 11% by 2020. The quality of life desired by this age group depends on the adequacy of their retirement savings. Abdul Samad and Kari (2007) conducted a survey on 2,000 retirees in Malaysia. The results revealed that the benefits provided by the Employees Provident Fund² were not adequate to sustain their retirement life. Consequently, contributions from children (who were already in workforce) were regarded as a very important component of retirement income for them. Given this scenario, the EPF has been making continuous efforts to enhance the members' retirement incomes. For example, members are given a choice to invest part of their savings with approved external fund managers. The influencing factors in making this decision is of considerable interest to government, academics, practitioners and fund members and form the focus of the present study.

There are two major retirement schemes in Malaysia, namely pension scheme and provident fund. Pension scheme is a defined benefit (DB) plan, which pays benefits to members based on pre-determined formulae that take into account the length of service, seniority and final salary. The main pension scheme in Malaysia caters for government or public sector employees.³ Upon retirement, the members will receive a monthly pension. Other benefits include health cover at the government hospitals.

Provident fund, by contrast is a defined contribution (DC) fund whereby the members make contributions (including employers'), earn income (dividend) and are paid in a lump sum, upon death, retirement, permanent disability or emigration outside Malaysia. Examples of this type of retirement scheme includes The Employees Provident Fund (hereafter EPF) and The Armed Forces Fund. The focus of this study is on the behaviour of members of the EPF.

The EPF is the central pillar of retirement savings for private sector and non-pensionable public sector employees in Malaysia. It was established on 1st October 1951 by the Employees Provident Fund Ordinance 1951. Currently, it operates under the EPF Act 1991, amended in 1995. As at June 2011, the EPF has a total of 12.9 million members of whom 6.11 million are active and contributing members. The total

² EPF is an institution which monitors the compulsory savings scheme in Malaysia.

³ Only confirmed employees with 3 years of service are eligible to enter this scheme. Prior to work confirmation, all employees contribute to Employees Provident Fund. There are now 1.2 million public sector employees in Malaysia.

accumulated asset as of 31 December 2010 was RM445.85 billion. According to statistics from the Pensions & Investments/Towers Watson Global survey in 2010, the EPF was ranked the 9th among the world's largest 300 pension funds. The EPF scheme is a defined contribution (DC), fully funded scheme, whereby both the employees and employers contribute 11 per cent and 12 per cent of employees' salary respectively. There is no income ceiling applied in the calculation of the contribution. This is in contrast to the Singaporean Central Provident Fund (CPF) which has an income ceiling of \$4,500 per month (Koh, Mitchell, Tanuwidjaja, & Fong, 2008). The contribution credited to each member's account was split into two accounts, as depicted in Figure 1.1.

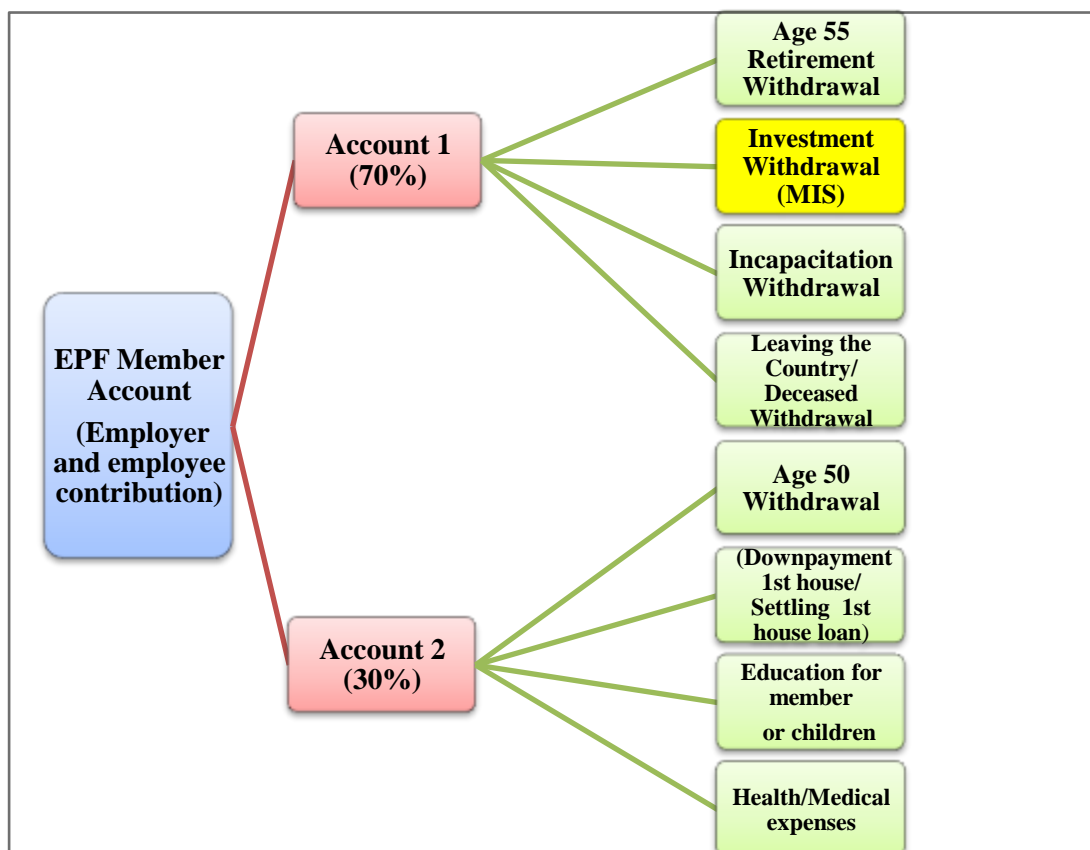


Figure 1.1: Overview of EPF member account⁴

The present study is focussing on Members Investment Scheme (MIS). Initiated in November 1996, the MIS allows members to invest part of their retirement savings in the EPF into external funds approved by the Ministry of Finance. Members are not allowed to acquire shares directly. Rather, they can invest in a managed/mutual fund,

⁴ Developed based on information from EPF website: www.kwsp.gov.my

more commonly known as unit trusts in Malaysia. Thus, members have to face the risk in investment performance of the chosen mutual fund. Apart from that, they also need to pay fees (front-end load, annual management fee, exit fee), which varies between 1.5% and 5%. Members who are eligible under this scheme, but do not want to exercise this choice leave all their savings in the EPF “default” fund and rely totally on the expertise of the EPF investment panel. Furthermore, there is no cost (fee) imposed on the members for leaving all savings in the “default” fund. The issue of increasing concern includes what factors influence the choice being made by the members. Previous studies, largely derived from developed economies such as the US, UK and Australia, have shown that individuals’ investment choice decisions may be motivated by various factors such as financial performance (Clark-Murphy, Gerrans, & Speelman, 2009; Vyvyan, Ng, & Brimble, 2005), financial knowledge (Agnew & Szykman, 2005; Jacobs-Lawson & Hershey, 2005; Ntalianis & Wise, 2010, 2011), financial risk tolerance (Croy, Gerrans, & Speelman, 2010; Jacobs-Lawson & Hershey, 2005), plan design (Papke, 2003), and demographics (G. L. Clark & Strauss, 2008; Koh et al., 2008).

The MIS was introduced in line with the global trend towards increased investor autonomy, together with EPF’s effort to increase its members’ retirement savings. Ibrahim (2004) stated that one of the challenges faced by the EPF was to manage the perception of its members towards efficiency in investing their savings. The EPF has been facing difficulty in investing the large fund under its care in a relatively small capital market. This difficulty has been perceived by members as inefficient, resulting in lower returns on their savings. Furthermore, a survey conducted on 2,000 retirees in Malaysia revealed that the benefits provided by the EPF were not adequate to sustain members’ retirement life (Abdul Samad & Kari, 2007).

From the introduction of the MIS up to 2007, the EPF has approved 1.6 million transactions, amounting to RM17 billion with approved fund managers. The rate of withdrawals for investment with approved external fund managers is increasing. For example, 107,564 applications were received in the third quarter 2008 as compared to 75,239 applications in the corresponding period in 2007, a 43 per cent increase. Yet, the percentage of members that take up this scheme is not publicly released. The increasing number of applications may be due to more members being eligible to invest in an

approved external fund following the introduction of “Basic Savings” in February 2008. This refers to the minimum balance requirement in the member’s Account 1 which is progressively determined by age level so as to enable a member to accumulate minimum savings of RM120,000⁵ at the retirement age of 55.

Under the MIS, members may invest 20 per cent of savings in excess of the “basic savings” in Account 1 in unit trusts through approved external fund managers. Eligible members may exercise the choice to invest externally every three months. Prior to the introduction of “basic savings”, members could only invest 20 per cent of savings in excess of RM50,000 in Account 1 through approved external fund managers. By using the former figure, only those aged 40 and above are eligible to invest externally.

The cash flow from the MIS into unit trusts has driven tremendous growth in the unit trusts industry (Table 1.1). The unit trust industry in Malaysia was first established by British investors in 1959 with the introduction of the Malayan Unit Trust Ltd. In 1981, the Malaysian government, through Permodalan Nasional Berhad (PNB) entered the industry by launching a government-sponsored unit trust, known as Amanah Saham Nasional (ASN). The types of unit trusts include equity funds, fixed income funds, money market funds, Real Estate Investment Trusts (REITS), Exchange Traded Funds (ETF), balanced funds and notably Syariah funds.

As Malaysia is a multi-racial country, comprising mainly Malay, Chinese and Indian ethnic groups and where the majority of its population are Muslims, there is a demand for investment vehicles which conform to the Syariah principle. This has prompted the government to introduce various measures to fulfil those needs. One such measure was the introduction of Kuala Lumpur Syariah Index in 1999. The implication of Islamic investment principles is the availability of Islamic financial instruments such as the Islamic unit trusts in the capital market. The main difference between Islamic fund and conventional fund is that the former is structured to invest only in Halal securities which comply with Syariah law. Such securities exclude companies operating in alcohol production, gambling, tobacco and interest (riba)-based financial institutions. Ever since

⁵ From a survey conducted by the EPF, it is estimated that a minimum of RM500 per month will be sufficient to cover basic expenses for a retiree throughout 20 years upon retirement. The dividend rate is assumed to be offset against the inflation rate.

the presence of Islamic financial products in the Malaysian financial market, the acceptance towards these products has been encouraging; not only among the Muslims but also non-Muslims investors, who wish to invest in portfolios which do not run against their sense of social responsibility. In addition to Islamic investing, Pitluck (2008) identified another type of social investing, known as “ethical” investing. This simpler investment philosophy only prohibits investment in companies that are involved in alcohol or gambling. At present, the EPF invests its fund in accordance to ‘ethical’ investing rather than ‘Islamic’ investing. Given that it allows its members to invest part of their savings externally, it is expected that the more religious members would be more likely to align their behaviour in compliant with their religious belief and practices. In other words, they will be more likely to invest part of their savings in Islamic mutual fund, and not in either conventional or ethical fund.

Today, Malaysia has emerged as a key player in the Islamic capital market, thereby providing impetus for the development of the Islamic funds management industry. According to Khan and Bhatti (2008), Malaysia is the second biggest hub of Islamic banking and finance. As summarised in Table 1.1, there are 154 Islamic unit trust funds with a Net Asset Value (NAV) of RM25.423 billion as at 30th April 2011 compared to 2 funds in 1993 when first introduced into the Malaysian capital market.

As of 31 December 2011, the EPF has approved 40 external fund managers consisting of 27 unit trust managers, 12 asset management companies and one Pilgrim Fund. Thus, total number of the approved funds is not provided by the EPF. The members have to contact the respective fund managers to know the number of funds available under the scheme and the type of funds they are allowed to invest their savings in. This suggests the role of financial advisor in marketing the EPF-scheme funds. It may be expected that the number of mutual funds continue to increase in the near future⁶. This will give eligible members or potential investors more choices in choosing a unit trust fund should they decide to invest part of their savings externally. Against this backdrop, it is also opportune to examine factors considered important in selecting a mutual fund among the individual investors.

⁶ Federation of Investment Managers Malaysia (FIMM) 2009 Annual Report.

**Table 1.1: Statistics on the Malaysian unit trust industry from
31 December 2004 to 30th April 2011**

	2004	2005	2006	2007	2008	2009	2010	30 th Apr 2011
Number of management companies	36	36	38	39	39	39	39	40
Total number of launched funds	273	323	387	484	532	541	564	575
- Conventional	208	244	295	360	392	397	412	421
- Islamic-Based	65	79	92	124	140	144	152	154
Total Units in circulation (billion units)	118.627	139.386	153.719	206.835	236.392	273.879	289.366	298.690
- Conventional	105.472	120.762	135.245	170.563	187.535	217.031	233.158	242.318
- Islamic-Based	13.155	18.624	18.474	36.272	48.857	56.848	56.208	56.372
Net Asset Value (NAV) of funds (RM Billion)	87.385	98.485	121.410	168.029	130.436	191.706	226.812	242.836
- Conventional	80.624	89.998	112.309	151.244	114.318	169.626	202.768	217.413
- Islamic-Based	9.761	8.487	9.101	16.785	16.118	22.080	24.044	25.423
NAV to Bursa Malaysia Market Capitalisation (%)	12.10	14.17	14.31	15.19	19.65	19.18	17.79	18.53

Source: Securities Commission (http://www.sc.com.my/eng/html/resources/stats/stat_2004-2009.pdf, 2010, 2011)

1.3 Research Questions

The investment choice made by the EPF members directly impacts on their accumulated retirement savings. Given the recent policy emphasis on individual choice and self-responsibility, the present study aims to investigate the retirement savings behaviour among the Malaysian EPF members. Specifically, the study sets out to address the following primary research question:

“What are the factors that influence EPF members’ retirement savings behaviour?”

In addressing this primary question, the present study seeks to address two types of behaviour that are related to retirement savings: the first is the choice between keeping all savings in the default fund or investing part of the retirement savings in approved external funds; and the second is the choice of unit trust fund to invest in. Thus, the following research questions are raised:

- How have individual EPF members reacted to the provision of the Members Investment Scheme? Do they keep all their savings in the default fund or do they move part of their savings elsewhere?
- What are the factors that influence the EPF members’ decision towards the use of MIS?
- What factors, other than risk and return, are significant in influencing the choice of external fund by EPF members?
- Does a religious dimension play an important role in determining the choice of fund among the individual investors?
- Can meaningful groups be identified in EPF members by consideration of demographics and their investment choices?
- How does the retirement savings behaviour in Malaysia differ from other countries?

Figure 1.2 illustrates the conceptual model of the study.

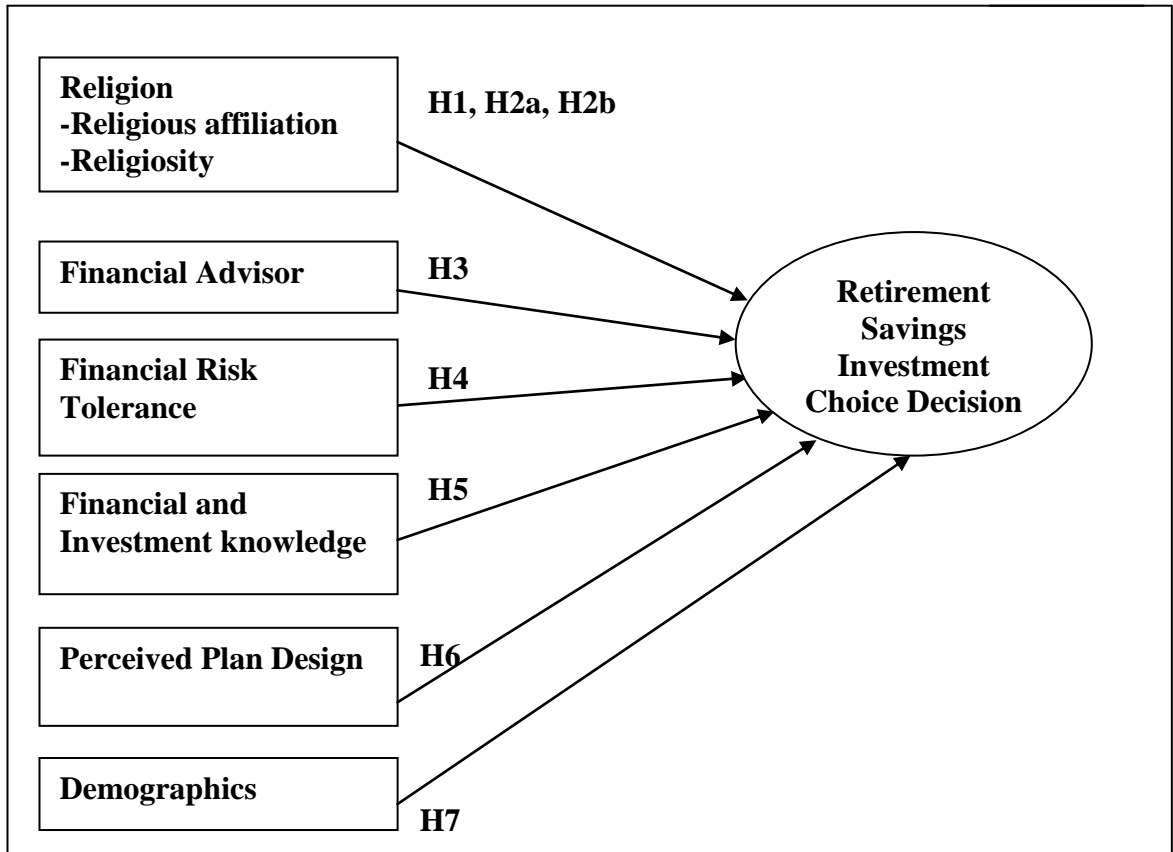


Figure 1.2: Conceptual model of retirement savings investment choice decision

1.4 Rationale and Significance of the Study

This study is pursued for several reasons. Firstly, research focusing on individual choice within the retirement savings context is relatively sparse in emerging or newly industrialised countries (NICs) as much of the relevant literature is derived from developed countries. Therefore, this study will investigate the issue of investment choice within the retirement savings context by incorporating important variables adopted in prior studies to the sample in Malaysia. Malaysia is a multi-cultural nation, whereby different groups behave according to a different set of beliefs and norms. The role this has in influencing retirement savings choice will be a key contribution of the research.

Secondly, the present study is focusing on the retirement savings investment decision made by the EPF members. One particular difference between the choices offered under the defined contribution plan in Malaysia with other developed countries is that; the choice only offers its members a small amount of flexibility in terms of managing their retirement savings. The majority (80 per cent) of the savings are still under the control of the EPF. To date, there has been no Malaysian study undertaken to investigate the extent to which the members exercise the choice given and the factors motivating this decision. Therefore, this study serves to provide information to EPF as the policy maker, on the retirement savings behaviour of its members. Specifically, this study will provide insightful information on the factors motivating the eligible members to invest part of their savings in approved external funds or to retain all their savings in the default fund. An understanding of the investment choices could increase the effectiveness of retirement planning education (Ntalianis & Wise, 2011).

Thirdly, the impact of religion and religiosity on retirement savings investment decisions in Malaysia has received little attention from researchers. Therefore, this study is undertaken as a first step in understanding from a cultural perspective the influence of religion on retirement savings investment choice and of retirement savings per se. Thus, the results from the study should add to the existing body of knowledge in the retirement savings field by explaining the relationship between an individual's religious background and his/her behaviour as an investor.

As the unit trusts industry in Malaysia is growing tremendously, competition among the fund management companies is relatively high. The practical implication of this study is that it will provide valuable cues for fund management companies to develop a better strategy for attracting potential and existing clients. Also, this study will be of interest to both incumbent operatives and potential entrants into this growing industry. Market segmentation could be developed by identifying the demographic characteristics of the individual investors and their fund selections.

1.5 Research Method

This study employs a cross-sectional, questionnaire-based survey as the main method of data collection. Two sets of questionnaires were distributed to both EPF members and unit trust consultants respectively. The study uses binary logistic regression to predict individuals' likelihood to invest part of their retirement savings in the unit trusts. Further explanation on the research methodology and design is presented in Chapter Four.

1.6 Structure of the Thesis

The remainder of this thesis is organised as follows. Chapter Two provides a review of relevant literature related to the study. Chapter Three presents the conceptual model of the study and hypotheses development. Chapter Four describes the methodology used in the present study. This chapter also discusses the research design, measurements of the variables, sampling and data collection procedures, as well as the analytical techniques used for data analysis. Chapter Five reports the data analysis, including the descriptive analyses and the results of hypotheses testing. Finally, Chapter Six presents the discussion of the research findings, the implications and limitations of the study followed by the suggestions for future research.

1.7 Summary

This introductory chapter provides an overview of the thesis, including the background of the study, the research questions, rationale and significance of the study, and an overview of the methodology used in this study. The subsequent chapters will follow the structural scheme as noted in section 1.6. Chapter Two (Literature Review) provides a comprehensive overview of previous studies relating to the research area.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This study explores the factors influencing individual retirement savings behaviour in Malaysia. The focus of the study is on individuals' choice decision to invest part of their retirement savings in approved unit trusts, and the choice of unit trust fund to invest in. In addition, the study will look at the criteria considered important in mutual fund selection.

This chapter is organised as follows. Section 2.2 provides an overview of the Malaysian Employees Provident Fund (EPF). Section 2.3 highlights the theoretical basis that underpins the current study. It outlines the traditional finance theory and the development of behavioural finance theory that are fundamental in explaining how individual investors behave in investment decision making. Section 2.4 discusses the role of religion and religiosity in individuals' investment decision, particularly with regard to consumer behaviour. Section 2.5 discusses the existing literature on individual choice within a retirement savings context, which is mainly derived from developed countries. Section 2.6 provides literature on mutual fund selection criteria. Section 2.7 concludes with a summary of the literature review.

2.2 Employees Provident Fund (EPF) – An Overview

The EPF in Malaysia was first established in 1951 by the Employees Provident Fund Ordinance 1951 (Asher, 2001; Bateman & Piggott, 1997). It was originally set up by the British colonial power to cater for expatriate workers (Caraher, 2003). Currently, it operates under the EPF Act 1991, amended in 1995. The EPF scheme is a defined contribution (DC) scheme, fully funded and publicly administered by the EPF as a statutory body under the supervision of the Ministry of Finance.

2.2.1 Coverage

From its inception, the EPF covered only low-wage employees (earning RM400 per month or less) working in companies with at least 10 employees. In 1963, it was extended to employees earning up to RM500 per month in companies with at least 3 employees. In 1964, all companies were included. Since 1970, all employees, irrespective of the size of their employer's business, as well as the amount of wages earned, are covered by the EPF (Bateman & Piggott, 1997). As at June 2011, the EPF has a total of 12.9 million members of whom 6.11 million are active and contributing members. The total number of active employers is 481,886. The large discrepancy between total members and active members is due to the fact that members had to register even though they may only work for a month. The coverage, as measured by the ratio of active contributors to total labour force as at July 2011 stood at 47.9 per cent (Department of Statistics Malaysia). This implies that approximately 52.1 per cent of the total labour force is not covered by the EPF. One reason is that the EPF scheme is mandatory for all private sector employees and this figure is likely to rise in the future as the private sector expands. Another reason is that 1.2 million public sector employees are covered under the Pension Trust Fund (PTF). The public sector employees or civil servants in Malaysia enjoy the defined benefit (DB) scheme based on formulae determined by the government. Normally, the 'safety net' that will be received by them incorporates years of service, salary level and other factors.

2.2.2 Contribution

A contribution constitutes the amount of money credited to members' individual accounts in the EPF. The amount is calculated based on the monthly wages of an employee. There is no income ceiling applied in the calculation. This is in contrast to the Singapore Central Provident Fund (CPF) which has an income ceiling of \$4,500 per month (Koh et al., 2008). The current mandatory contribution rate is 23 per cent of the employee's wages (Table 2.1). This comprises employee and employer's contribution of 11 per cent and 12 per cent respectively. Employers are obliged to contribute at least 12 per cent, but can voluntarily pay a higher rate. The contribution rates have changed considerably as the government attempted to boost consumer spending when the economy was in a declining pattern. For example, in response to the global economic

downturn which has also affected the Malaysian economy, the government has announced a reduction in the employees' contribution to 8 per cent from January 2009 to December 2010. However, members who wish to maintain the current contribution rate can do so by filling in a form provided by the EPF. In 2010, total contributions credited into members' account increased by 6.84 per cent to RM35.76 billion compared to RM33.47 billion in 2009. The total accumulated assets of the EPF have also increased by 18.75 per cent to RM445.85 billion as compared to RM375.46 billion in 2009.

Table 2.1: Contribution rates to individual EPF member's account

Year	Employee	Employer	Total
1952 – June 1975	5%	5%	10%
July 1975 – November 1980	6%	7%	13%
December 1980 – December 1992	9%	11%	20%
January 1993 – December 1995	10%	12%	22%
January 1996 – March 2001	11%	12%	23%
April 2001 – March 2002	9%	12%	21%
April 2002 – May 2003	11%	12%	23%
June 2003 – May 2004	9%	12%	21%
June 2004 – December 2008	11%	12%	23%
January 2009 – December 2010	8%	12%	20%
January 2011	11%	12%	23%

Source: EPF 2010 Annual Report

2.2.3 Structure of EPF Member's Account

Since the inception of the EPF, the contribution credited to each member is dedicated into several accounts. Over the years, as part of the ongoing reform of the EPF, these accounts have been expanded and merged accordingly, thus the purposes to which account is dedicated for remains the same. For example, starting 1st January 2007, members' accounts were restructured from three sub-accounts to become two sub-accounts. This is part of the EPF's strategic initiative, branded as "Beyond Savings". This initiative will be monitored from 1st January 2007 until 1st January 2013.

Basically, Account 1 now consists of 70 per cent of savings and Account 2 consists of 30 per cent of savings. Account I restricts withdrawals to the moment the member

reaches an age of 55 years old, is incapacitated, leaves the country⁷ or passes away or for investments purposes. Withdrawals from Account 2 are permitted for the down payments or loan settlements for a member's first house, finances for education and medical expenses and the time when the member reaches 50 years of age.

Before the age of 55, members may withdraw part of their savings for investment in unit trusts through approved external fund manager. This is one strategy initiated by the EPF in encouraging its members with excess savings to invest part of their savings in alternative investment products to enhance their retirement savings. Since 1996, the EPF, under its Members Investment Scheme (MIS), has permitted its members to invest up to 20 per cent of their savings in excess of RM50,000 in Account I in unit trusts (Asher, 2001). This savings limit has changed with the introduction of Basic Savings. Implemented in February 2008, Basic Savings is an amount of savings to be put aside in Account 1 progressively at various pre-determined age levels so as to enable members to accumulate a minimum savings of RM120,000 upon reaching the age of 55 (**Appendix 1**). As a result of the introduction of Basic Savings, more members are eligible to withdraw 20 per cent of the excess of their basic savings to invest in unit trusts, under the MIS. It has been reported that the number of withdrawals made under the MIS has risen. From 2008, this figure has risen by 21.9 per cent to 506,950 applications in 2010.

The implementation of MIS is similar to that offered under the Singaporean Central Provident Fund (CPF) system, where the latter also gave CPF participants the opportunity to invest part of their Ordinary Account (OA) and entire Special Account (SA) money in permitted financial instruments such as unit trusts, investment-linked insurance products (ILP) as well as equities traded on the Singapore stock exchange. The range of products in which CPF members can invest is quite diverse as compared to permissible products under the MIS (Koh et al., 2008). The number of funds that can be invested under MIS is not limited, provided that the minimum initial investment for each fund is RM1,000.

⁷ Leaves the country means the members intend to migrate to other country.

2.2.4 Investments

The investment policy of the EPF is prudent to ensure the members' savings are well protected in the long-term. Under the 1991 Act, the EPF can only utilise approved investments. These include Malaysian Government Securities (MGS), debenture loans, money market instruments, equities and property. The 1991 Act stipulates that the EPF is required to invest at least 70 per cent of its funds in MGS, which reflects its role as the main purchaser of government debt (Bateman & Piggott, 1997). However, as a result of privatisation in the Malaysian economy as well as lower budget deficits, the proportion of total funds invested in MGS has reduced considerably. Table 2.2 summarises the asset allocation of the EPF from 2006 to 2010. Traditionally, the EPF is only mandated to invest in Malaysia, but it has now begun to diversify its investment abroad. The proportion of EPF investment in equities has also increased gradually. However, the global economic crisis did have significant effect on the EPF investments. For example, in 1997, Malaysia's stock market capitalization fell to RM375.8 billion from RM806.8 billion in the previous year and partially recovered in 2000. Similarly, in 2008, the EPF announced that the unaudited investment income in the third quarter fell 60.4 per cent to RM2.06 billion from RM5.19 billion in the second quarter this year. The drop was mainly due to the fall in income from equities to RM1.26 billion compared to RM2.54 billion in the second quarter of 2008.

Table 2.2: Asset allocation of EPF Investments from 2006-2010

Year	Types of Investment	Malaysian Govt Securities (MGS)	Loans and Bonds	Equities	Money Market Instruments	Property	Total (All investments)
2006	RM billion	102.579	96.359	54.901	30.426	1.651	285.919
	Share (%)	35.9	33.7	19.2	10.6	0.6	100.0
2007	RM billion	112.932	112.772	66.274	19.258	1.775	313.013
	Share (%)	36.1	36.0	21.1	6.2	0.6	100.0
2008	RM billion	110.642	122.775	87.948	19.026	1.621	342.014
	Share (%)	32.3	35.9	25.7	5.6	0.5	100.0

Year	Types of Investment	Malaysian Govt Securities (MGS)	Loans and Bonds	Equities	Money Market Instruments	Property	Total (All investments)
2009	RM billion	114.097	131.976	100.426	23.207	1.554	371.262
	Share (%)	30.7	35.5	27.0	6.3	0.4	100.0
2010	RM billion	118.517	142.613	153.531	23.987	1.867	440.517
	Share (%)	26.9	32.4	34.9	5.4	0.4	100.0

Source: 2010 EPF Annual Report

2.2.5 Dividends (Interest)

In accordance with Section 27 of EPF Act 1991, the EPF shall declare a minimum nominal annual dividend of 2.5 per cent, subject to approval from the Minister of Finance. The annual dividend is calculated on a compound basis. There is no fee imposed on the members for the investments made by the EPF, which is in contrast to the unit trust investments that they can choose to invest in. After taking into account the expenses of the current year, the Board approves the income distribution in the form of a dividend to all members in accordance with EPF's accounting policy. Dividends have generally been higher than the guaranteed rate of 2.5 per cent. Table 2.3 outlines the dividend rates paid from the year 1952 to 2010.

2.2.6 Taxation

One major advantage of savings via the EPF is that of tax exemption. The employer contributions are tax deductible up to a certain threshold of earnings. The same applies to employee contributions. They are allowed a total tax deduction of a certain amount per annum to cover EPF contribution and life insurance premiums. For example, in 2009, total deductions applicable for employees were RM6,000. This amount changes in accordance with the Budget announced by the government each year. Furthermore, all member withdrawals as well as the income of the EPF are tax exempt. This is one significant concession that members benefit from, which may not be available in other retirement savings system.

Table 2.3: Dividend rates paid to individual EPF members

Year	Percentage per Annum
1952 – 1959	2.50
1960 – 1962	4.00
1963	5.00
1964	5.25
1965 – 1967	5.50
1968 – 1970	5.75
1971	5.80
1972 – 1973	5.85
1974 – 1975	6.60
1976 – 1978	7.00
1979	7.25
1980 – 1982	8.00
1983 – 1987	8.50
1988 – 1994	8.00
1995	7.50
1996	7.70
1997 – 1998	6.70
1999	6.84
2000	6.00
2001	5.00
2002	4.25
2003	4.50
2004	4.75
2005	5.00
2006	5.15
2007	5.80
2008	4.50
2009	5.65
2010	5.80

Source: EPF 2010 Annual Report

2.3 Theoretical considerations

2.3.1 Traditional Finance and the Development of Behavioural Finance

In 1947, Von Neumann and Morgenstern developed expected-utility theory to define rational choice under uncertainty. This theory is based on objective probabilities about monetary outcomes rather than subjective expected utility. As Nagy and Obenberger (1994, p. 63) summarised:

"The axioms of utility theory, developed by Von Neumann and Morgenstern, argue that investors are 1) completely rational, 2) able to deal with complex choices, 3) risk-averse and 4) wealth maximizing."

It has been well argued that individual decision makers do not behave in accordance with the axioms of utility theory which was normative, rather than descriptive. Not long after the publication of Von Neumann and Morgenstern's work, other researchers carried out experiments in which participants made choices that did not accord with expected utility theory.

In his seminal work in 1952, Markowitz (1952) developed Modern Portfolio Theory, which focused on both risk and return of investments. He theorized that an investor must be rewarded for taking risk by receiving an appropriate level of return. This theory is best explained by the representation of the efficient frontier. On this line, as risk increases, the reward needs to increase as well to justify the risk. To minimise a portfolio's total risk, diversification of investments among imperfectly correlated assets produces an efficient frontier of investment portfolios.

Markowitz's work on portfolio theory laid the foundations for the development of the Capital Asset Pricing Model (CAPM) by Sharpe (1964). This model recognizes the existence of systematic (non-diversifiable) and non-systematic (diversifiable) risk and postulates that, in an efficient market, only systematic risk, which cannot be diversified away should be rewarded. Hence, assets should be priced on the basis of their systematic risk, of which "beta" was developed as a measure.

Other works sought to provide a theory which describes how decision makers actually behave when confronted with choice under uncertainty. What has come to be known as behavioural finance, proposes several elements that capture behavioural attributes of individual investors beyond the risk and return attribute of an investment as suggested in modern portfolio theory.

Kahneman and Tversky (1979) have shown that individuals do not always act according to the dictates of economic theory, especially under conditions of risk and uncertainty. They have proposed an alternative to expected utility theory in the form of prospect

theory. This theory suggests that alternatives are evaluated by a different function in terms of gains and losses with respect to a reference point. The function is suggested to be concave for gains and convex for losses and steeper for losses than for gains.

Thaler (1980) suggested that prospect theory may form the basis for the development of a descriptive theory of consumer choice and has also used it as the basis for suggested solutions to some of the ongoing puzzles of financial theory. The concept of self-control⁸ (R. H. Thaler & Shefrin, 1981) and prospect theory (Kahneman & Tversky, 1979) have been combined to offer an explanation of people's apparently stubborn preferences for cash dividends, despite the fact that, if taxes and transaction costs are ignored, capital gains should be a perfect substitute (Shefrin & Statman, 1984). The suggestion is that investors may desire dividends for reasons of self-control, segregation (i.e. mental accounting) and regret reduction, none of which have anything to do with traditional wealth maximization or the purely monetary aspects of the decision.

Fry, Heaney and McKeown (2007) utilised prospect theory to analyse how investors will respond to the introduction of choice in superannuation fund. As suggested by Fry et al. (2007), it can be said that the reference point for EPF members is the default plan. The shape of a value function in prospect theory suggests that the expected benefits from choosing to invest in an external fund would need to be substantial, relative to the expected losses, before they choose to invest part of their savings externally, in the form of a unit trust fund. In other words, the expected net returns offered from investing in a unit trust fund have to be substantially higher than that distributed by the EPF.

2.4 Religion and Investor Behaviour

“Finance theory conventionally focuses on risk and return as the factors relevant to the construction of portfolios. But there is evidence of a growing number of investors who wish to incorporate moral or social concerns in their decision-making.”

(Anand & Cowton, 1993, p. 377)

⁸ Self control means control of impulses that may otherwise involve ill-considered actions (Wärneryd, 2001, p. 190)

Religion has been identified as one potential determinant of savings and investment behaviour (Keister, 2003). It is one of the fundamental elements of culture that has a considerable effect on the values, habits and attitudes of an individual (Delener, 1994). This effect, either direct or indirect, depends on the extent to which an individual accepts the beliefs and practices of respective religion (Sood & Nasu, 1995). Keister (2003) postulates that religion is likely to affect asset accumulation indirectly because it shapes many of the processes that determine family wealth. Further, religion is also likely to affect wealth ownership directly because it shapes values and priorities, contributes to the set of competencies from which action is constructed, and may provide important social contacts. Notwithstanding the potential importance of the influence of religion, empirical investigation of this element within the field of economics and finance has been rare. To the researcher's knowledge, there has not yet been any research linking directly religion and retirement savings behaviour. There have been several studies on the role of religion within consumer behaviour framework. It can be assumed that as an investor, individual plan member consumes financial product to get better return for their retirement life. Therefore, for the purpose of the present study, a more generally related behaviour studies to religion will be reviewed.

2.4.1 Definition of Religion

It is difficult to search for a generally accepted definition of religion. Clarke and Byrne (1993) identified three sources of doubt about the possibility of producing a satisfactory definition of religion. They related to (1) conflicts and unclarities in the ordinary use of the term; (2) the confused meaning left to the term from its history; and (3) the obvious divergence in scholarly purposes and approaches to the definition of religion. Among the many kinds of definition, religion has been defined as:

“system of symbols which acts to establish powerful, pervasive, and long-lasting moods and motivations in men by formulating conceptions of a general order of existence and clothing these conceptions with such an aura of factuality that the moods and motivations seem uniquely realistic”.

(Geertz, 1973, p. 78)

“A belief in God accompanied by a commitment to follow principles believed to be set forth by God”.

(McDaniel & Burnett, 1990, p. 103)

“An organized system of beliefs, practices, rituals and symbols designed (a) to facilitate closeness to the sacred or transcendent (God, higher power, or ultimate truth/reality), and (b) to foster an understanding of one’s relation and responsibility to others in living together in a community”.

(Koenig, McCullough, & Larson, 2000, p. 18)

2.4.2 Religious Affiliation and Religiosity

The two key aspects with which religion can be associated are religious affiliation and religiosity. Religious affiliation refers to the specific religious group to which an individual belongs (Lehrer, 2004). On the other hand, religiosity or religious commitment is defined by Worthington et al. (2003, p. 85) as:

“the degree to which a person adheres to his or her religious values, beliefs, and practices and uses them in daily living. The supposition is that a highly religious person will evaluate the world through religious schemas and thus will integrate his or her religion into much of his or her life.”

In her critical review of the role of religion in economic and demographic behaviour in the US, Lehrer (2004) upholds the importance of religion affiliation given the impact it has on the range of decisions that people make throughout their life. With regard to religiosity, she contended that this dimension of religion influences the end result of economic and demographic behaviour because it emphasizes the effect of affiliation and because its generally positive influence on health and well being can have repercussions for such behaviour. Focusing on the principal religious group in the US, such as Protestants, conservative Protestants, Roman Catholics, Jews and Mormons, as well as the unaffiliated, Lehrer (2004) synthesized the empirical findings on the effect of religion in the marital stability, the choice of marital partner, fertility, women’s work at

home and in the labour market, education, wages and wealth and entry into cohabitation and marriage. The evidence revealed a mixed effect. This provides an opportunity for the present study to explore the effect of religion on the individual economic behaviour outside the US regime, particularly in a developing economy.

Tahir and Brimble (2011) examined the extent to which Muslim investors comply with the requirements laid out in Islamic investment principles. In addition, they sought to identify the factors that influence the asset allocation decision in an investment experiment. Tahir and Brimble found support for the influence of Islam on investment decision making among the Muslim. However, the extent to which the Muslim adheres to the Islamic investment principles depends on their level of religiosity. In terms of asset allocation, the evidence of a wealth-maximising element to Islamic investment decisions was indicated.

Haron and Wan Azmi (2008) examined the role of religion in determining the savings behaviour of Malaysian customers, particularly the Islamic bank customers. Contrary to the expectation, their study found that Islamic banking customers placed profit motive above their religious motive when making economic decision. However, they also found that economic variables such as Kuala Lumpur Composite Index (KLCI), Consumer Price Index (CPI), and Gross Domestic Products (GDP) have a significant positive relationship with the savings function in the Islamic system, reflecting the influence of Islamic teachings.

Haron, Ahmad and Planisek (1994) discovered that religion had relatively no influence in bank patronage. They conducted a survey to determine the bank selection criteria considered important by Muslim and non-Muslim customers in a dual banking environment, and to gauge their knowledge of the existence of the Islamic bank and their perception towards this bank in Malaysia. Using a convenience sample, 301 customers covering 3 main towns in 2 states were given a self-administered questionnaire. Principal component analysis was used to cluster bank selection criteria. The results found that the most important factor considered by Muslims in selecting their financial institutions is “fast and efficient service”. This factor was ranked second by non-Muslims. They considered “friendliness of bank personnel” as the most important factor. This factor was ranked third by Muslim customers. Only 40 per cent

of the Muslim customers believe that religion is the only reason for patronising the Islamic bank.

Findings indicated by Mohamed Adnan and Sulaiman (2007) support the evidence in Haron et al. (1994), although the context were different, whereby the former authors examined the influence of religion and religiosity on the propensity for budgetary slack creation. A questionnaire survey and personal interviews were administered to 91 managers of a Malaysian based Korean company. The authors found no evidence to confirm that religion and religiosity influences a manager's propensity to create slack.

Similar to Haron et al., Dusuki and Abdullah (2007) examined the main factors that motivate customers to deal with Islamic banks in Malaysia, whereby the operation of Islamic banking runs in parallel with the operation of conventional banking (dual banking). The study employed a self-administered questionnaire. 750 questionnaires were usable, out of 1,000 distributed. The Friedman Test and factor analysis were used to analyse customers' banking selection criteria. The results revealed that the selection of Islamic banks appears to be predominantly a combination of Islamic and financial reputation and quality service offered by the banks. Other factors that are perceived to be important include good social responsibility practices, convenience and product price.

In another setting, Dolansky and Alon (2008) explored the impact of religious freedom and religious diversity on the foreign direct investment of Japanese companies. They discovered that national income and religious diversity significantly influence Japanese decisions to invest.

Sood and Nasu (1995) compared the effect of religiosity on consumer behaviour in Japan and the US. They found no differences between consumer behaviour of the devout and casually religious Japanese. Conversely, the devout American Protestants had different consumer behaviour than the casually religious Protestants. The link between religiosity and consumer behaviour has also been investigated by Delener (1994), giving emphasis on marital roles. It was found that the role structure differs throughout the buying process, subject to the individual's religious dimension.

In the case of Spanish Catholics, Brañas-Garza and Neuman (2004) examined the relationship between religiosity and socio-economic elements. It was found that age and exposure during childhood was the most important determinant of religiosity.

Perhaps, the research carried out by Muhamad, S.Susela Devi and Abdul Mu'min (2006) is closely related to the present study in the view that religion has some influence on individual investment decision making. This study specifically explored the influence of Islamic religiosity on the investment decision-making among the Malaysian Malay Muslim investors. Aspects being examined include the types of instruments preferred for investment, objective(s) of investment as well as sources of information utilised in making such investment. A survey was carried out among 262 Malay Muslim accountants. It was found that the degree of religiosity has a significant influence on investment decision-making.

2.4.3 Measurement of religiosity

As compared to measurement of religious affiliation, religiosity is a more difficult construct to measure given the variety of its definition. Religious affiliation, like ethnicity or nationality, is largely an ascribed condition, whereas religiosity is primarily a personal phenomenon (Sood & Nasu, 1995). In the early studies of religion-related behaviour, it was religious affiliation that was measured (Engel, 1976; Hirschman, 1982). It has been measured relative to faith identification of the individual (e.g. Protestant, Catholic, Jews, Mormons). In addition to religious affiliation, the later studies have operationalised the religion construct using religiosity or religious commitment as a measure of the degree to which beliefs in specific religious values and ideals are held and practiced by an individual (Brañas-Garza & Neuman, 2004; Delener, 1994; Sood & Nasu, 1995; Wilkes, Burnett, & Howell, 1986). Various quantitative and qualitative indicators may be used to measure relative religious strength of a person. For example, offering prayer is obligatory to every adult Muslim in every circumstance (without fail). Therefore, the number of prayers offered in a month out of 150, is one such indicator (Hamdani & Ahmad, 2002). Caird (1987) proposes three different measures of religiosity: cognitive (focus on religious attitudes or beliefs), behavioural (evaluate church attendance or private prayer), and experiential (query as to mystical experiences).

One approach to measure religiosity in consumer studies has been the operationalisation of the construct using Allport and Ross (1967) intrinsic-extrinsic Religious Orientation Scale (ROS). According to Allport and Ross (1967), intrinsically religious people are genuinely committed to their faith, while extrinsically religious people are more self-serving. They stated that, “the extrinsically-motivated person uses his religion, whereas the intrinsically-motivated lives his religion” (p. 434). Table 2.4 presents the ROS developed by Allport and Ross. It consists of 20 statements, 11 expressing extrinsic involvement and 9 expressing intrinsic. Statements are responded to on a five-point scale, with 4 and 5 indicating an extrinsic orientation, and 1 and 2 indicating an intrinsic orientation, and 3 being assigned to any items omitted by a respondent. The ROS has proven to demonstrate its construct validity consistently and have acceptable reliability in many studies, including consumer research (Delener, 1994; Essoo & Dibb, 2004). However, one critical limitation of the ROS is that it is specifically designed for use with Christian subjects. Although it has been used in one study involving Muslim and Hindu subjects (Essoo & Dibb, 2004), the adaptation of the scale is not always practical and valid to measure the degree of religiosity of other than Christian religions.

Genia (1993) suggested that the item measuring frequency of worship attendance be dropped, because it “presents theoretical as well as methodological problems” (p. 287). For example, in measuring Islamic religiosity, this item applies only to men because they are obligated to attend worship in congregation at mosque at least once a week on Friday.

Brañas-Garza and Neuman (2004) measured the level of religiosity of Spanish Catholics by the proxy of either prayer or participation in mass. This proxy was used because the majority of Spanish people believe in God and they participate in prayer and mass. These variables were categorical and ordered from low to high (prayers: ‘never prays’ to ‘once a day’ –10 categories; mass: ‘never participates’ to ‘every week’- 6 categories) (p. 12).

Table 2.4: The religious orientation scale (I-E scale)

	Statements	SA	A	N	D	SD
1.	I enjoy reading about my religion.	1	2	3	4	5
2.	I go to church because it helps me make friends.	5	4	3	2	1
3.	It does not matter what I believe so long as I am good.	5	4	3	2	1
4.	Sometimes I have to ignore my religious beliefs because of what people might think of me.	5	4	3	2	1
5.	It is important for me to spend time in private thought and prayer.	1	2	3	4	5
	I would prefer to go to church:					
	A few times a year.	5				
6.	Once every month or two.	4				
	Two or three times a month.	3				
	About once a week.	2				
	More than once a week.	1				
7.	I have often had a strong sense of God presence.	1	2	3	4	5
8.	I pray mainly to get relief and protection.	5	4	3	2	1
9.	I try hard to live all my life according to my religious beliefs.	1	2	3	4	5
10.	What religion offers me most is the comfort in times of trouble and sorrow.	5	4	3	2	1
11.	My religion is important because it answers many questions about the meaning of life.	1	2	3	4	5
12.	I would rather join a Bible study group than a church social group.	1	2	3	4	5
13.	Prayer is for peace and happiness.	5	4	3	2	1
14.	Although I am religious I don't let it affect my daily life.	5	4	3	2	1
15.	I go to church mostly to spend time with my friends.	5	4	3	2	1
16.	My whole approach to life is based on my religion.	1	2	3	4	5
17.	I enjoy going to church because I enjoy seeing people I know there.	5	4	3	2	1
18.	I pray chiefly because I have been taught to pray.	5	4	3	2	1
19.	Prayers I say when I am alone are as important to me as those I say in church.	1	2	3	4	5
20.	Although I believe in my religion, many other things are more important in life.	5	4	3	2	1

Source: Allport and Ross (1967)

Taking into account the distinctiveness of the religions, Sood and Nasu (1995) developed two different measures of religiosity in a cross-cultural study of consumer behaviour in Japan and the U.S. (see Table 2.5). The measurement was based on the responses to nine questions related to “belief in the religious doctrine, religious practice or activity, the moral consequences and an experience dimension or self-rating of one’s religiosity” (p. 3). The first question addresses personal activity in one’s religion; the second and third questions were concerned with the perceived importance and confidence in religious values; the fourth was a self-evaluation of one’s religiosity; and the last five questions were directed to one’s beliefs in the basic tenets of one’s religion. The average score on the nine questions becomes the degree of religiosity of the respondents. The calculated reliability based on the internal consistency of these nine items ranged from 0.59 to 0.65 for the Japanese Shinto sample and from 0.79 to 0.82 for the American Protestant sample.

Table 2.5: Measurement of Shinto and Protestant religiosity

	Semantic Differential
Japanese Shinto	
1. I go to a place of worship regularly.	SD-SA
2. Spiritual values are more important than material gains.	SD-SA
3. Religious people are better citizens.	SD-SA
4. How do you characterise yourself?	NR-VR
5. Supreme reality is beyond the comprehension of the human mind.	SD-SA
6. Religion is self-education in conquering pain, sorrow and suffering.	SD-SA
7. A person has an indefinite number of lives.	SD-SA
8. The individual person is not important.	SD-SA
9. One should strive for inner purity through contemplation and ceremonial acts.	SD-SA
American Protestant	
1. I go to a place of worship regularly.	SD-SA
2. Spiritual values are more important than material gains.	SD-SA
3. Religious people are better citizens.	SD-SA
4. How do you characterise yourself?	NR-VR
5. Jesus Christ is the Son of God.	SD-SA
6. Individuals are free to approach the Lord for themselves	SD-SA
7. The Bible is the word of God.	SD-SA
8. Man is responsible in his freedom to exercise his will for good.	SD-SA
9. The soul of man is immortal.	SD-SA
SD=strongly disagree and SA=strongly agree, NR=not religious and VR=very religious	

Source: Sood and Nasu (1995)

Looking at Malaysian context, Muhamad et al. (2006) adapted Muslim Attitudes Towards Religiosity (MARS) scale developed by Wilde and Joseph (1997) to determine the impact of religiosity on the investment decision aspects of Malaysian Malay Muslim investors. More recently, Wan Ahmad, Rahman, Ali and Seman (2008) developed an index of religiosity to assess any correlation between a Muslim's level of religiosity and his/her choice of banking in Malaysia. The religiosity index (see Table 2.6) is based on the core aspects of the Islamic teachings, namely faith, Islamic laws and *akhlaq*. A 5-point Likert Scale was utilised, ranging from most frequent to never. The authors justified the item used in this index as better reflecting the state of a Muslim's level of religiosity. It appeared that workers who were more religious tend to choose Islamic Banking for either deposit or financing. Their religiosity level was highly correlated to the exposure of higher formal religious education. In the context of the present study, the instruments developed by Wan Ahmad et al. (2008) were adapted to measure the level of religiosity among Muslim EPF members.

The literature discussed above suggests the importance of religion as a pertinent construct to individual behaviour. However, it is important to note that most prior studies on this topic have been conducted among American population who are predominantly Catholics, Protestants or Jews. As such, little can be said about the robustness of previous findings in other religious contexts and cultural settings. A limited number of studies can be found on the role of religion within the retirement savings context (Renneboog & Spaenjers, 2011). Therefore, there is a need to identify whether religion influences the investment choice decision within the retirement savings context, particularly in an emerging economy.

Table 2.6: Religiosity Index

Syariah	<p>Obligations</p> <p>I pray five times a day. I fast the whole of Ramadhan. I pay zakat fitrah every year. I make sure that my dress/cloth covers my aurat. I make sure the food and drink I consumed are halal.</p> <p>Recommendations</p> <p>I go to the mosque to pray ‘solat fardh’. I perform ‘solat fardh’ in congregation. I give charity to the poor and needy. I read Quran and perform zikir.</p> <p>Prohibitions</p> <p>I have taken or given bribes I have taken interest (riba).</p>
Akhlaq	<p>I visit my family/friends when they are bedridden. I thank Allah for my food and drink. I fulfill all that I promise. I am honest at all times.</p>
Faith	<p>Islam is a way of life. Quranic teachings are suitable and practicable in today’s life. Rasulullah’s traditions are suitable and practicable throughout all times. All mankind’s deeds will be judged and rewarded accordingly after death. My earnings are from own effort and not Allah’s will. Death and destiny are determined by Allah alone. Man’s wealth depends on their own effort.</p>

Source: Wan Ahmad et al. (2008)

2.4.4 Islamic Beliefs

In their discussion about the divine economics, Hamdani and Ahmad (2002) postulate that economic behaviour of a Muslim having high level of religiosity must be systematically different from those having low level of religiosity. Further they suggest that a rational Muslim will make economic decisions having considered the pros and cons for the ‘Barzakh’ day of judgement and eternal life thereafter. In the context of the present study, given an opportunity to invest part of retirement savings in alternative investment that conform to Syariah principles, Muslim members would utilise the choice offered to ensure they conform to the Islamic principles in any way they can as reflected in the following verse from the Muslim Holy book, the Qur’an, in which Allah says:

“And when the prayer is finished, then may you disperse through the land, and seek the bounty of Allah (through trade, business and lawful professions) and celebrate the praises of Allah so that you may prosper”

(Surah Al-Juma 62:10)

2.5 Factors Influencing Retirement Savings Investment Choice Decisions

A large number of studies have examined individual choice decisions in the context of retirement savings. Most of these studies are derived from developed countries such as the US, UK and Australia. According to Gerrans and Clark-Murphy (2004), choice can mean a once only decision between a Defined Benefit Fund (DBF) and an Investment Accumulation Account (IAA), a choice of where superannuation contributions are directed, or choice as to the asset mix of fund members’ portfolios. In the present study, the choice is given to eligible EPF members to invest part of their retirement savings in the approved unit trusts under the “Members Investment Scheme”. In the paragraphs that follow, each of the various factors pertinent to retirement savings investment choice decisions are discussed.

2.5.1 Financial and Investment Knowledge

An increasing responsibility placed on individual employees in managing their retirement savings demands them to have adequate financial and investment knowledge. This knowledge varies in definition. For example, Worthington (2008) defines knowledge of superannuation as ‘understanding of superannuation fees, charges and statements, recognising the voluntary and compulsory nature of additional employee and employer contributions, and being aware of the lower taxation of superannuation compared to other investments’. Apart from financial knowledge, the term “financial literacy” is also used (Gallery, Newton, & Palm, 2011). Prior studies have measured financial knowledge mainly through subjective measures of survey respondents’ self-assessment of understanding, ability, attitudes and behaviour with respect to financial matters (Jacobs-Lawson & Hershey, 2005). A few examples of evidence using objective measures of financial knowledge can also be found (Gallery, Gallery, Brown, Furneaux, & Palm, 2011; Annamaria Lusardi & Mitchell, 2007).

Mitchell and Moore (1998) highlighted that one reason individuals fail to plan for retirement was because they lack sufficient domain-specific knowledge. It has been reported that a lack of knowledge and feeling 'ill-equipped' among Australian superannuation fund members has led to difficulty in choosing between a DB plan and a DC plan (Clark-Murphy & Gerrans, 2001). Furthermore, Worthington (2008) discovered that knowledge of superannuation is unevenly spread across respondents, based on data drawn from the *ANZ Survey of Adult Financial Literacy in Australia*. Byrne (2007) explored the attitudes and knowledge of the members of UK DC pension scheme that are faced with investment choices in their plan. The results were consistent with US evidence (Shlomo Benartzi & Thaler, 2002) where employees showed limited knowledge and interest in their pension provisions. Dulebohn and Murray (2007) found that investment knowledge directly affected risky decision making behaviour in university-sponsored DC retirement plans. In a series of investigations, Hershey and his colleagues found that financial knowledge has been shown to be an important determinant of retirement savings decisions (Hershey & Mowen, 2000; Hershey & Walsh, 2000; Jacobs-Lawson & Hershey, 2005). This evidence has been supported by Lusardi and Mitchell (2006) who suggested that individuals with more financial knowledge are more likely to plan for retirement. However, Fry, Heaney, and McKeown (2007) found that Australian individuals, who were more knowledgeable of their existing superannuation, were more likely to remain with the default fund. Empirical studies have also demonstrated that improved financial knowledge through exposure to various education programs may facilitate individuals' retirement savings behaviour (R. L. Clark, d'Ambrosio, McDermed, & Sawant, 2006; Dolvin & Templeton, 2006; Ntalianis & Wise, 2010, 2011).

Following Jacobs-Lawson and Hershey (2005), the present study will utilise subjective measures of financial knowledge to determine whether this variable influences individual retirement savings investment choice decision.

2.5.2 Financial advisor

A limited but growing literature has shown that investors often consider brokers and financial advisors as the most important information source in mutual fund investment decision (Alexander, Jones, & Nigro, 1998; Capon, Fitzsimons, & Prince, 1996; Guiso & Jappelli, 2005). It is assumed that brokers and financial advisors have the knowledge and expertise to help individual investors managing their investment portfolios. Yet, the extent to which their financial advice influence investors' decision is still relatively unexplored.

Mitchell and Moore (1998) found that households derived relatively little financial advice from financial experts, instead relying on friends and relatives. However, they also found that households who used brokers for financial advice tend to have more assets in stocks and mutual funds. One possible explanation given was that brokers may explain risk and return patterns to financially naïve investors in a way that influences their investment patterns (Mitchell & Moore, 1998, p. 389). Gruber (1996) demonstrated that 'unsophisticated' investors direct their money to funds based on other influences such as advertising and advice from brokers.

Zhao (2005) demonstrated a mixed evidence with regard to the role of brokers and financial advisors behind investments into mutual funds. On the one hand, brokers and financial advisors seemed to serve their own interest by guiding investors into funds with higher loads, which reflect their roles as "true decision makers behind investments into load funds". On the other hand, when apparent conflict of interest does not seem to exist, brokers and financial advisors show their expertise by directing investors into smaller funds, which might experience better performance.

Bergstresser, Chalmers and Tufano (2009) attempted to quantify the benefits that investors enjoy in exchange for the costs of the services provided by financial advisor (brokers). They found that financial advisors failed to deliver substantial tangible benefits. Results showed that funds delivered by financial advisors had lower risk-adjusted returns, even before subtracting distribution costs. Furthermore, the aggregate pattern of investment in broker-sold funds does not demonstrate superior market timing advice by brokers. Bergstresser et al. concluded that any incremental benefits brokers

provide must fall along dimensions that are less tangible, such as that brokers may help their clients more efficiently use their scarce time, they may help customize portfolios to investors' risk tolerances, and they may increase overall investor comfort with their investment decisions.

Hackethal, Haliassos, and Jappelli (2009) found similar findings. Using a unique German data set, Hackethal et al. (2009) examined whether financial advisors improve investors' portfolio performance. Their initial descriptive statistics showed that on average, accounts run by the financial advisors offer greater returns, both in total and relative to the security market line; lower risk, systematic and unsystematic; lower probabilities of losses and of substantial losses; and greater diversification through investments in mutual funds. However, their econometric analysis suggests that financial advisors are associated with lower total and excess returns, higher portfolio risk, higher trading frequency and portfolio turnover. The regression analysis indicated that financial advisors tend to be matched with older and richer investors. This finding suggests that the benefits provided by the financial advisors are less tangible, as pointed out by Bergstresser et al. (2009).

In the context of the present study, it is inevitable that unit trust consultants play similar roles as the above financial intermediaries. In 2003, a survey conducted by an international research company AC Nielsen, of the 607 urban working Malaysian adults showed that there was a low level of awareness of the many schemes offered to the EPF members (EPF, 2004). The study revealed that only 3 per cent of respondents were aware of the Members Investment Scheme (MIS), in the absence of help from unit trust consultants. Through the help of unit trust consultants and other information sources such as the seminars, 36 per cent of the respondents were aware of the MIS. Given that fund members have a choice to invest part of their retirement savings in the approved unit trusts; it is worth investigating to what extent unit trust consultants play their role as delivering financial information, as well as directing members' savings into unit trust funds.

2.5.3 Financial Risk Tolerance

A growing number of studies have demonstrated the apparent significance of financial risk tolerance as a predictor of investment choice strategies for retirement (Bajtelsmit, Bernasek, & Jianakoplos, 1999; John E. Grable & Joo, 1997; Jacobs-Lawson & Hershey, 2005; Sunden & Surette, 1998). Financial risk tolerance can be defined as the maximum amount of volatility that someone is willing to accept when making a financial decision (John E. Grable, 2000; John E Grable & Lytton, 1999).

A large number of literature have utilised demographic factors as determinants of financial risk tolerance (Anbar & Eker, 2010). For example, Grable and Lytton (1999) examined whether demographic, socioeconomic and attitudinal factors can be used to predict financial risk tolerance. The study concluded that the classes of risk tolerance differed most widely on a respondent's educational level and personal finance knowledge. Hallahan, Faff and McKenzie (2003, 2004) investigated the relationship between demographic factors and financial risk tolerance. Their analysis revealed that gender, income, and wealth are significantly associated with financial risk tolerance.

In the context of retirement savings, van Rooij, Kool and Prast (2007) reported that self-assessed risk tolerance as important explanatory variable of pension system attitude. Respondents who were more inclined to take risk were more likely to prefer a DC plan and prefer investor autonomy. Similarly, Yuh and DeVaney (1996) demonstrated that the DC plans of risk tolerant individuals tend to be larger than those of individuals who are risk averse. On the contrary, Croy, Gerrans and Speelman (2010) found that financial risk tolerance had little effect on intentions to save for retirement. So far, the evidence presented by the researchers comes from the developed economy. It is interesting to explore whether financial risk tolerance can have a profound effect on retirement savings investment decision among the individual employees in an emerging economy.

2.5.4 Plan Design

In any type of retirement plans, the structure or plan design must be carefully developed and managed to ensure the adequacy of employees' retirement income. Several studies in the US have examined the impact of adding more funds on rates of participation, as well as the plan performance. Iyengar, Huberman and Jiang (2004) found a drop in plan participation as the number of fund options rises. This suggests that participants suffer from "choice overload" in 401(k)⁹ plans. Agnew and Szykman (2005) contended that as the number of investment choices rises and choices become more similar, participants tend to become less satisfied and are hence more likely to choose an employer selected default, as they "choose not to choose." Tang and Mitchell (2008) discovered that adding investment choices might not necessarily improve the 401(k) plans efficiency and performance; the most important is the particular set of investment funds offered.

In the context of the present study, the plan design that is explored is different from those mentioned above. Under the Members Investment Scheme (MIS), the EPF offers its eligible members to invest part of their retirement savings in the approved unit trusts. This is not a one-off choice and can be regularly exercised every three months. While a portion of members' retirement savings can be invested in the risky investment alternatives (i.e. the unit trusts), the bulk of their savings are still maintained within the default fund. On the one hand, it can be argued that the choice feature is structured in such a way to protect "financial illiterate" members from making sub-optimal choice. On the other hand, it also give "financial literate" members the opportunity to manage their retirement savings with a goal to increase expected returns. Nevertheless, the guaranteed rate of return provided by the EPF default fund may lead members to do nothing with the choice that they have, i.e. keep all their savings in the EPF "default" fund.

2.5.5 Demographics

Many studies have explored gender related differences in retirement savings choice which suggest that women tend to be more risk averse than men (Bajtelsmit et al., 1999;

⁹ 401(k) plan is a type of retirement plan in the US.

Bernasek & Shwiff, 2001; G. L. Clark & Strauss, 2008; Koh et al., 2008; Speelman, Clark-Murphy, & Gerrans, 2007; Sunden & Surette, 1998). However, contrary evidence can be found. Dwyer, Gilkeson and List (2002) showed that risk aversion falls with increased knowledge of financial market and investment. Engstrom and Westerberg (2003) found that women and younger individuals in Sweden were more likely than men and older individuals to make an active investment decision.

It was found that women were more responsive to the education seminar and were more likely to raise their desired retirement age, increase their target income goal and alter their savings behaviour (R. L. Clark et al., 2006). Gerrans and Clark-Murphy (2004) explored gender differences in Australian superannuation investment choices through a range of interactions with individual demographics. The first choice investigated was whether to move to a DC or to stay with the Defined Benefit Fund (DBF). The model showed that single males who considered themselves informed were more likely to choose DC rather than the DBF. The second choice investigated was between choosing one of the four investment strategies available in DC. Single males who considered themselves informed were less likely to choose the lower risk options.

A UK study (G. L. Clark & Strauss, 2008) showed that participants with high incomes tended to be less risk averse. Singaporean CPF investors appeared to be more committed to risky investments as they aged (Koh et al., 2008).

2.5.6 Other determinants of retirement savings investment choice decision

Apart from the pertinent factors discussed in the previous sub-sections, there are also other factors that determine individual retirement savings investment choice decision. For example, Duflo and Saez (2002) used individual data from the staff of a university to investigate whether peer effects play an important role in retirement savings decision. Their results supported the notion that peer effects are important. Significant own-group peer effect is found on participation and on the choice of mutual fund provider. However, no cross-group peer effect is found.

Several studies have shown that people tend to favour the status quo. In the US, Madrian and Shea (2001), Agnew, Balduzzi and Sunden (2003) and more recently

Mitchell, Mottola, Utkus and Yamaguchi (2006) found that most DC plans participants did not change their investment strategy and remained in the default plan. One possible reason for this phenomena is that individuals tend to perceive the default alternative as investment advice (Madrian & Shea, 2001). Fry, Heaney and McKeown (2007) examined the reaction of investors to the introduction of superannuation choice in Australia. Using a survey of 1,647 investors, they suggested that individual investors were loss averse and were more likely to remain in the existing superannuation fund. Those who had stayed longer with the existing fund, were satisfied with the fund's performance and were more knowledgeable of their existing superannuation, were found to be more likely to remain with the default fund. These findings support the concept of inertia. Similar evidence was revealed by Koh et al. (2008) on Singaporean CPF participants. Even though CPF participants could invest part of their Ordinary Accounts (OA) savings and all Special Account (SA) savings in a wide range of permissible assets, the bulk of their savings were still sit in the default government investment pool. High expenses and fees incurred by investing in unit trusts and investment-linked products have resulted in mediocre returns. In fact, these returns barely exceeded the default Ordinary Accounts (OA) rate of 2.5%. The participants rather left the bulk of their savings (80%) in Special Accounts (SA) to earn a guaranteed 4% return than to risk their savings in permissible riskier assets. Contrary to Madrian and Shea (2001), it was found that majority of Swedish Premium Pension members made an active investment decision. This high rate of participation may be attributed to a comprehensive information campaign by the government (Engstrom & Westerberg, 2003).

Besides the reported choices that are normally sought through surveys, few studies have analysed actual choices made by individual retirement savings fund members. For instance, Hedesstrom, Svedsater and Garling (2004) analysed the actual choices of mutual fund of 10,999 randomly selected citizens in the Swedish premium pension scheme. They identified the presence of various heuristic choice rules such as a default bias, the use of a diversification heuristic, extremeness aversion, a home bias and the use of a $1/n$ heuristic¹⁰. In a subsequent study, Hedesstrom, Svedsater and Garling

¹⁰ According to Benartzi and Thaler (2001), the $1/n$ heuristic in retirement saving plans implies that the contributions are evenly divided across the n investment instruments offered. As a result, the composition of fund portfolios is determined by the selection of funds offered.

(2007) confirmed the prevalence of heuristic choice rules in retirement savings. The study was conducted in the form of an Internet-based survey, where 392 university employees were asked to make a fictitious choice of premium pension scheme funds. The effect of involvement¹¹ on heuristic choice rules was also investigated. It was found that involvement reduced the probability of choosing the default fund and was positively correlated with the number of funds included in a portfolio. Clark-Murphy, Gerrans and Speelman (2009) have explored the investment choices made by members of four not-for-profit retirement savings funds in Australia. They provided evidence that choices were driven by recent historical returns. In addition, they found a link between age and return chasing behaviour. Their findings supported the previous research (Speelman et al., 2007) which found that the apparent return chasers were the oldest cluster.

2.6 Mutual Fund Selection Criteria

Generally, most research on mutual fund selection utilise two variables that are based on traditional finance theory, namely expected risk and return (Sirri & Tufano, 1998). For example, Wilcox (2003) found that investors paid a great deal of attention to past performance when choosing a mutual fund. He also found that investors with a greater knowledge of basic finance were less likely, not more likely to make reasonable fund choices. Ippolito (1992) found that investors choose mutual funds based on past performance, because it is believed to be an indicator of fund quality. Several studies have shown that past performance of mutual funds can predict future performance (Elton, Gruber, & Blake, 1996; Hendricks, Patel, & Zeckhauser, 1993). However, positive past performance does not persist (Jain & Wu, 2000; Malkiel, 1995; Tufano & Sevick, 1997). Although the past returns do not guarantee future returns, a survey of 298 affluent investors found performance track record to be one of the four most important criteria for mutual fund selection (Capon, Fitzsimons, & Weingarten, 1994). In addition, it was discovered that past performance was still continue to be used by consumers when forming mutual fund preference, despite the highly salient presence of expense information (Pontari, Stanaland, & Smythe, 2009). From financial advisors'

¹¹ Perceived personal relevance, based on inherent needs, values and interests (Hedesstrom et al., 2007, p. 115)

perspective, a study conducted by Jones, Lesseig and Smythe (2005) indicated that financial advisors place greater importance on performance relative to other funds with similar style, fund objective, fund risk, fund manager tenure, and fund manager reputation, while placing less importance on sales loads and 12b-1 fees¹².

Capon et al. (1996) argued that, when investing in mutual funds, investors employ a multi-attribute model rather than a 'naive model' solely based on risk and return. In their exploratory study, the relationships among four sets of variables are examined: information sources used for mutual fund purchases, selection criteria, mutual fund purchase behaviour and demographic data. 3,386 subjects completed the national telephone survey. The study found that US mutual fund investors considered investment performance track record, fund manager reputation and number of funds in fund family (e.g., Fidelity, Vanguard) as the most important in selecting a mutual fund. These results support their argument that attributes other than risk and return are also valued by investors.

It is inevitable that the cost of transaction (or known as expense ratio) in dealing with a mutual fund affects the performance of the fund. Elton, Gruber, Das and Hlavka (1993) showed that there is a strong negative relationship between expense ratios and fund returns. Golec (1996) recommended that investors should avoid funds with large fees. Ippolito (1989) found that funds with a lower transaction cost outperform those with higher fees. Barber, Odean, and Zheng (2002) study the effects of front-end loads, 12b-1 fees, and other operating expenses on fund flows. They found negative relations between load fees and fund flows, no relation between total operating expenses and fund flows, as well as positive relations between 12b-1 fees and fund flows.

Alexander, Jones and Nigro (1997) surveyed 2,000 mutual fund investors to identify whether financial literacy had an impact on the investors' choice of distribution channel when purchasing a mutual fund. The distribution channels include banks and life insurance companies as well as the traditional channels such as fund companies and stockbrokers. The data analysed using a bivariate probit model supported their

¹² 12b-1 fees — the ongoing marketing fees deducted over time from the fund's assets. 12b-1 fees are used to pay broker commissions and other marketing costs, but unlike loads, they are not one-time fees deducted directly from investors' individual accounts (Palmiter & Taha).

hypothesis that investors self-select into different distribution channels based on their level of financial literacy. More literate investors were more likely to choose a traditional distribution channel, in this case, the broker.

Gerrans (2004) examined the use of managed fund ratings among individual retail investors in Australia. The ANOVA and hierarchical cluster analysis produced results that are broadly consistent with Capon et al (1996) in that; published ratings/rankings had the highest score for information sources. Also, the ratings or rankings of the fund product were considered important when it came to selecting a particular fund product; however the reputation of the backing company or fund were considered the most important factor. The largest proportion of respondents viewed the main purpose of a fund rating as to identify well managed/administered fund.

In Malaysia, published evidence on the unit trust fund selection among individual investors is very limited. Most studies on unit trusts have mainly focused on performance. The issues addressed by those studies include the risk-return performance, selection and market timing abilities of fund managers and the level of diversification of unit trust funds.

Rozali and Abdullah (2006) examined the risk-adjusted performance, security selection and market timing performance and the degree of diversification of Malaysian equity funds, categorised by growth funds, income funds and balance funds. Using Jensen model (1968), the results indicated that on the average, all types of funds outperformed the dividend-adjusted return on the Kuala Lumpur Composite Index (KLCI). There were no significant differences in the performance among all types of funds. Furthermore, the selectivity and market timing performance of all unit trust funds were negative, implying that fund managers appear to possess inferior selection skills and poor market timing abilities.

Mansor and Bhatti (2011) evaluated overall monthly performances of 128 Islamic mutual funds (IMFs) for the period of January 1990 to April 2009. They demonstrated that on average IMFs in Malaysia outperformed their Conventional peers and the market portfolio proxy by the KLCI return. Also, the study showed that the significantly positive stock selectivity skill and market timing ability among Islamic and

Conventional mutual fund managers in Malaysia, and indicated that IMFs fund managers have superior performance in stock selectivity skill, but inferior performance in market timing ability relative to their conventional counterparts.

Abdullah, Hassan and Mohamad (2007) compared the performance between Islamic and conventional funds, as well as between government and non-government funds across different economic conditions namely pre, during and post the 1997 economic crisis. The results showed that Islamic funds performed better than the conventional funds during bearish economic trends, while conventional funds showed better performance than Islamic funds during bullish economic conditions using various types of performance measures: Adjusted Sharpe Index, Treynor Index, Adjusted Jensen Index, Modigliani Measures and the Information ratio. Abdullah et al. (2007) implied that Islamic funds could be used as a hedging instrument during any economic slowdown. Similarly, a comparative analysis for the government and non-government funds revealed that government funds performed better than non-government funds during pre-crisis period. In terms of diversification levels, both Islamic and conventional funds had less than 50 per cent market portfolio diversification level, though the latter are found to have a marginally better diversification level than the Islamic funds.

As mentioned previously, the studies of unit trusts in Malaysia have concentrated on technical aspects such as performance evaluation. There has been very little research on behavioural aspects of unit trust funds. The only evidence on the factors considered important in selecting mutual fund has been provided by Ramasamy and Yeung (2003). They conducted a survey of 75 financial advisors, who have been active in the field of insurance and mutual funds. Conjoint analysis technique was used to investigate factors that considered important in selecting a mutual fund. The results of the survey revealed that past performance, the size of funds and cost of transaction were the three most important factors in selecting a mutual fund.

The present study seeks to contribute to existing mutual fund literature by extending the study by Ramasamy et al. (2003), to the EPF members, who are potentially individual mutual fund investors in Malaysia. In addition, the present study seeks to identify the influence of religiosity on the type of mutual fund selected by EPF members. It is

expected that the devout members would be more likely to choose Islamic fund than the casually religious members.

2.6.1 Islamic Fund

The International Organisation of Securities Commission (IOSCO) Islamic Finance Report¹³ (pg 12-13) stated:

“An Islamic Collective Investment Scheme (CIS) or Islamic Fund must operate in accordance with Syariah principles, not only in its relations with investors but also in its investment and other fund management activities. The effects of this include the following:

- The prohibition against interest (*riba*) will prevent a fund lending or borrowing at interest, or investing in interest-bearing securities.
- The fund may not invest in unethical or socially detrimental activities such as those involving alcohol, pornography or gambling. It may also not invest in conventional financial institutions, or enterprises which receive or pay substantial amounts in interest.
- Where an investment produces a small proportion of its return from unacceptable sources – for example a trading company which also arranges interest-bearing loans for its customers – that investment may be regarded as acceptable if it is “purified” by giving the unacceptable proportion of the return to charity.
- The prohibition against *gharar* (excessive uncertainty/ambiguity) will also limit some types of contract, including for example contracts for differences. On the other hand, this prohibition can encourage a high level of disclosure and precision in contracts with investors.
- Debt obligations are generally not considered to be tradable. However, baskets of investments which contain a proportion of debt obligations may be accepted as tradable, although the precise limit of this proportion remains a topic of debate.

¹³ Analysis of The Application of IOSCO’s Objectives And Principles of Securities Regulation For Islamic Securities Products, September 2008

- Unlike most conventional funds, some Islamic CIS may incorporate profit sharing with parties other than investors. The most obvious example is where investments are “purified” by giving part of the return to charity. “

The implication of Islamic Fund is that it provides an avenue for Muslim investors to conform to their religious belief in investing. To what extent this criteria influences the choice of mutual fund among Muslim investors is investigated in this study.

2.7 Summary

Throughout, this chapter has provided discussion of the factors influencing individual retirement savings investment choice. The studies have demonstrated that demographic variables such as gender, age and income had a significant positive effect on retirement savings choice (Bernasek & Shwiff, 2001; R. L. Clark & Pitts, 1999; Gerrans & Clark-Murphy, 2004). In addition, the increasing amount of investor autonomy in defined contribution plans has placed more responsibility on individual employees towards managing their retirement income. In so doing, the important role of financial education and investment knowledge within retirement savings has been duly examined (Clark-Murphy & Gerrans, 2001; R. L. Clark et al., 2006; Delpachitra & Beal, 2002; Ntalianis & Wise, 2010; A. C. Worthington, 2008).

Several studies have confirmed the important element of traditional finance theory within retirement savings behaviour; that members’ choices are driven by past fund performance and their risk characteristics (Clark-Murphy et al., 2009). However, it appears that further research would be beneficial in exploring additional predictors in the area of individual retirement savings investment choice. One particular predictor of interest is religiosity. The influence of religiosity on many aspects of consumer behaviour has been identified (Delener, 1994; Haron et al., 1994; Mokhlis, 2009). However, little empirical evidence can be found with regard to retirement savings choice. Therefore, the present study seeks to fill the gap in this literature by exploring religion and religiosity dimension in the context of Malaysian retirement savings choice.

Furthermore, given the unique structure of choice design in the EPF, the present study seeks to explore this dimension in shaping members' decision towards choice presented to them. Last but not least, the present study seeks to add new findings to mutual fund selection literature by examining the role of religiosity in selecting a mutual fund.

CHAPTER THREE

HYPOTHESES DEVELOPMENT

3.1 Introduction

This chapter discusses the development of hypotheses for each of the factors that influences the retirement savings behaviour of individual EPF members. Section 3.2 presents the conceptual model of the present study. The components of the model are highlighted in section 3.3 followed by the hypotheses development. This chapter concludes with a summary of the overall discussion.

3.2 Conceptual Model and Hypotheses Development

The model presented in this study involves direct relationships between retirement savings investment choice decisions and each of the individually hypothesised influences on those decisions as depicted in Figure 3.1. It is possible that a more complex combinations of factors than those shown in Figure 3.1 influence investment choice decisions. However, the initial research step of testing the factors individually has not previously been taken in Malaysia and is appropriate at this exploratory stage of retirement savings investment choice research.

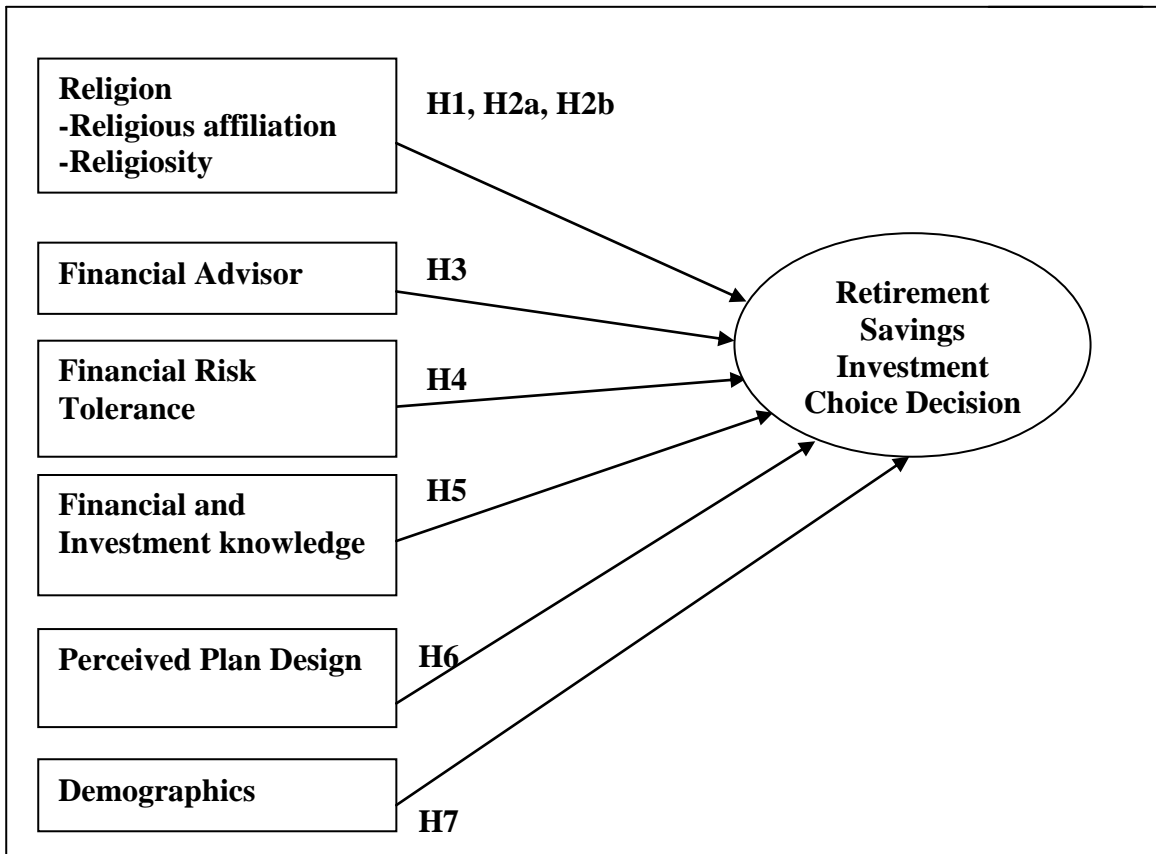


Figure 3.1: Conceptual model of retirement savings investment choice decision.

3.2.1 Dependent Construct: Retirement Savings Investment Choice Decision

As presented in Figure 3.1, the retirement savings investment choice decision represents the dependent construct in the conceptual model. In developed economies such as those of the US, UK and Australia, the trend towards DC plans has placed more responsibility for the management of retirement portfolios on individuals, rather than employers. Individual plan participants are presented with a number of choices in managing their retirement portfolios. The choice that is available to them encompasses both the choice of which fund to direct their employers' contribution to, as well as the choice of asset allocation of their retirement savings (Clark-Murphy et al., 2009; Gerrans & Clark-Murphy, 2004). In the context of the present study, the option to invest part of members' retirement savings (i.e. up to 20 per cent of the excess of basic savings in Account 1) in alternative investments such as the unit trusts can be considered as an investment choice within the domain of retirement savings. Unless the choice is

exercised, all the members' savings will be allocated to a 'default' fund managed by the EPF.

3.2.2 Determinants of Retirement Savings Investment Choice Decision

3.2.2.1 Religion

As shown in Figure 3.1, the first independent construct in the conceptual model is religion. Religion has been inferred as a potential determinant of savings and investment behaviour (Keister, 2003) because of the effect it has on the values, habits and attitudes of an individual (Delener, 1994). In the present study, religion has been operationalised using religious affiliation and religiosity. These are the two aspects of religion that have received increasing attention among behavioural researchers; each is discussed in turn.

3.2.2.2 Religious Affiliation

Early studies of religion-related behaviour have established the importance of religious affiliation (Engel, 1976; Hirschman, 1982). Religious affiliation represents "the specific religious group to which an individual belongs" (Lehrer, 2004, p. 707). Religious affiliation influences various aspects of the choice behaviour of its members by the rules and taboos it inspires (Mokhlis, 2009). For example, Bailey and Sood (1993) identified statistically significant differences in the consumer behaviour of the US minority religious groups (i.e. Buddhism, Hinduism and Islam) and the majority religious groups (i.e. Judaism, Catholic and Protestant). Meanwhile, Haron, Ahmad and Planisek (1994) found that religious affiliation had relatively no influence in bank patronage in Malaysia. Similar findings were also indicated by Gerrard and Cunningham (1997) when exploring the bank selection criteria between Muslims and non-Muslims in Singapore. It is difficult to establish a foundation of prior findings for the relationship between religious affiliation and retirement savings investment choice decision, particularly when it comes to investing part of retirement savings in the approved unit trusts. Nevertheless, one would expect Muslim members to choose to invest part of their retirement savings in a unit trust, so as to conform to Islamic principles. Hence, the following hypothesis is formulated:

H1: There is no association between individuals' religious affiliation and their retirement savings investment choice decision.

3.2.2.3 Religiosity

Religiosity or religious commitment reflects “the degree to which a person adheres to his or her religious values, beliefs and practises and uses them in daily living” (E. L. Worthington et al., 2003, p. 85). Wan Ahmad et al. (2008) studied the impact of religiosity on Malaysian consumer's choice of banking. They found that moderate and devout religious consumers preferred Islamic banking compared to conventional banking. They also reported that both formal religious education and age were positively correlated to the index of religiosity. The MANOVA results from the study by Rashid and Ibrahim (2008) indicated that religiosity had an impact on perceptions of business ethics. In contrast, Muhamad et al. (2006) found that there was no significant difference between the devout group and the casually religious group of Malay Muslim investors in terms of their preferences for different types of investment. In relation to investment choice that is available within the retirement savings context, individuals have the choice to invest part of their savings in either Conventional or Islamic unit trust funds. It is expected that devout Muslims will choose to invest in unit trusts, particularly, the Islamic fund. However, as the Islamic fund is not restricted to non-Muslims, the present study also expects non-Muslim who are more religious to invest in unit trusts, i.e. in an Islamic fund to conform to their ethical belief. Therefore, the following hypotheses are proposed:

H2a: There is no association between individuals' religiosity and their retirement savings investment choice decision.

H2b: There is no association between Muslims' religiosity and their retirement savings investment choice decision.

3.2.2.4 Financial Advisor

Prior studies have shown that financial advisors are the major source of financial information, especially with regard to mutual fund investment decision (Alexander et

al., 1998; Capon et al., 1996). Despite the importance of financial advisors in individuals' investment decision, few evidence has demonstrated that investors' funds delivered by financial advisors had lower risk-adjusted returns (Bergstresser et al., 2009; Hackethal et al., 2009), higher portfolio risk, higher trading frequency, and portfolio turnover (Hackethal et al., 2009). The conclusion that can be derived from the previous studies is that financial advisors offer intangible benefits to investors such as helping them to manage their scarce time more efficiently, and also customize their portfolios. With regard to the retirement savings investment choice decision, it is inevitable that unit trust consultants play a big role in informing and influencing members to invest part of their savings in unit trusts for better retirement savings accumulation. Members who perceived higher importance of unit trust consultants will be more likely to invest part of their savings in the unit trusts. Therefore, the following hypothesis is formulated:

H3: There is an association between individuals' perceived importance of financial advisors and their retirement savings investment choice decision.

3.2.2.5 Financial Risk Tolerance

Grable and Lytton (1999) define financial risk tolerance as the maximum amount of volatility one is willing to accept when making a financial decision. It has been reported that financial risk tolerance is a significant predictor in investment choice strategies for retirement (John E. Grable & Joo, 1997; Jacobs-Lawson & Hershey, 2005). For example, van Rooij et al. (2007) reported that respondents who were more inclined to take risk were more likely to prefer a DC plan and prefer investor autonomy. Similarly, Yuh and DeVaney (1996) demonstrated that the DC plans of risk tolerant individuals tend to be larger than those of individuals who are risk averse. In the present study, it is expected that individual members that are more risk tolerant will choose to invest part of their retirement savings in the approved unit trust funds. Therefore, the following hypothesis is posited:

H4: There is a positive association between individuals' financial risk tolerance and their retirement savings investment choice decision.

3.2.2.6 Financial and Investment Knowledge

Financial knowledge has been found to be an important variable in influencing individual retirement savings decisions (Hershey & Mowen, 2000; Hershey & Walsh, 2000; Jacobs-Lawson & Hershey, 2005). Prior studies have shown that investment knowledge is positively related to savings behaviour (Agnew & Szykman, 2005; John E. Grable & Lytton, 1997). Clark-Murphy and Gerrans (2001) reported that a lack of knowledge and feeling ‘ill-equipped’ among Australian superannuation fund members has led to difficulty in choosing between a DB plan and a DC plan. Lusardi and Mitchell (2006) suggested that individuals with more financial knowledge are more likely to plan for retirement. Similarly, Clark et al. (2006) found that US women were more likely to revise their retirement savings behaviour as a result of participating in an education seminar. On the other hand, Fry et al. (2007) noted that Australian individuals, who were more knowledgeable of their existing superannuation, were more likely to remain with the default fund. In Malaysia, Sabri et al. (2008) found that financial literacy to be one of the influential predictors of financial wellness among the employees. Consistent with the foregoing, a positive relationship is expected between individuals’ financial and investment knowledge, and their retirement savings investment choice decision. It is reasonable to assume that individuals with higher level of financial and investment knowledge would better understand the concept of investment, and the need to assume risk to obtain the potential for higher returns in approved unit trusts. Therefore, the following hypothesis is put forward:

H5: There is a positive association between individuals’ financial knowledge and their retirement savings investment choice decision.

3.2.2.7 Perceived Plan Design

It is generally recognised that in any retirement system, the plan structure must be carefully designed to ensure that employees’ accumulated earnings are invested wisely and managed prudently (Bateman & Mitchell, 2004). The global trend toward DC plans has encouraged the plan sponsors or policymakers to offer choices to their plan participants. Several studies in the US have examined the impact of adding more funds on rates of participation, as well as the plan performance. For example, Iyengar et al.

(2004) reported a drop in plan participation as the number of fund options increased. They contended that the participants suffered from ‘choice overload’ in 401(k) plans. Also, as the number of choices increases, and choices become more similar, participants experienced ‘information overload’ and were more likely to stay with the default as they ‘choose not to choose’ (Agnew & Szykman, 2005). Tang and Mitchell (2008) discovered that adding investment choices might not necessarily improve the 401(k) plans efficiency and performance; the most important is the particular set of investment funds offered.

In the present study, a unique feature of choice offered to fund members is that they are permitted to invest part of their retirement savings in alternative investments such as the unit trusts. More precisely, they can invest up to 20 per cent of the excess of Basic Savings in Account 1 externally. The great majority (80 per cent) of the members’ retirement savings are invested in other investment vehicles that have been determined by the EPF Investment Panel Board. It can be said that members who regard the choice offered to them as reasonable will choose to invest in alternative investments. This is because they may see the size of investment permitted to be invested externally as appropriate to protect their future retirement savings from a fall in value. Nevertheless, there has been no empirical evidence to support this position. Therefore, the following hypotheses are proposed:

H6a: There is an association between the perceived level of investment choice and retirement savings investment choice decision.

H6b: There is an association between the perceived range of funds and retirement savings investment choice decision.

3.2.2.8 Demographics

Demographic variables have been tested quite substantially in retirement savings investment choice research. Nevertheless, given the dearth of literature on the influence of demographic factors within the retirement savings choice context in Malaysia, it is worth exploring any effects these variables may have. For example, Ong, Kitchen and Jama (2008) examined the expenditure patterns of older consumers (age 55 years or

above) based on age, income, gender and ethnicity. Quota sampling was used to ensure a good representation of the three ethnic groups in Malaysia, namely Malays, Chinese and Indians. The results showed that there were hardly any significant differences in terms of monthly expenditure patterns among the older consumers in Malaysia. However, it may not be possible to generalise these same findings to the retirement savings context. Given the above, the following hypothesis is proposed:

H7: Demographic variables such as gender, age, marital status, ethnicity, education level, income, and wealth have effects on individuals' retirement savings investment choice decision.

3.2.3 Mutual Fund Selection Criteria

Having decided to choose to invest part of their retirement savings in the unit trusts, the next issue of concern to EPF members is which type of fund they want to invest in. As the unit trust industry in Malaysia is growing rapidly with a wide array of funds available in the market, it is not an easy task for members to choose which fund to invest in. Previous studies have identified several criteria considered important in fund selection such as past performance, cost of transaction, size of fund and fund reputation (Capon et al., 1996; Chan, Faff, Gallagher, & Looi, 2009; Ramasamy & Yeung, 2003; Wilcox, 2003). With the rise in the number of Islamic funds in the Malaysian unit trust industry, it is expected that the “Islamic investment principle” that serves as a foundation for this type of fund is one of investors' consideration in selecting a fund. However, the evidence to support this proposition is relatively scarce. Most of literature related to selection criteria covers banking products and the findings have been mixed (Dusuki & Abdullah, 2007; Haron et al., 1994; Naser, Jamal, & Al-Khatib, 1999). On the basis of the above, the following hypotheses are formulated:

H8: There is no significant difference in the ranking of mutual fund selection criteria as perceived by Malaysian EPF members.

H9: There is no significant difference in the ranking of mutual fund selection criteria as perceived by Malaysian unit trust consultants.

3.2.4 Choice of Fund

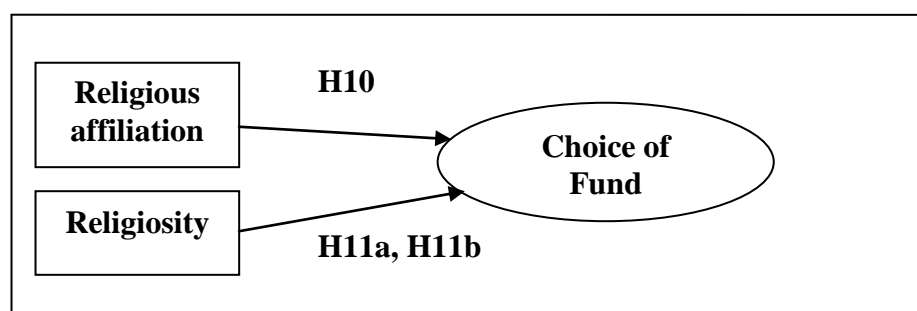


Figure 3.2: Choice of fund

As one of the main objectives of the present study is to identify the role of religion in individual investment behaviour, the next behaviour of interest within a retirement savings context is the choice of unit trust fund to invest in. Malaysia, as an Islamic capital market hub is offering individual investors an Islamic fund as well as a Conventional fund. It is expected that Muslim investors are more likely to invest in an Islamic fund so as to conform to Islamic principles. However, Mohd Kamal's (1986) observation of Malaysian Muslims suggests that Islam does not influence all aspects of the behaviour of Malay Muslims. Therefore, it is expected that devout Muslim investors are more likely to invest in an Islamic fund. As Islamic funds are not restricted to non-Muslims, it is expected that these investors may invest in an Islamic fund, not just to conform to their ethical beliefs, but also to gain higher potential returns. Several studies have shown that performance of Islamic funds was higher than that of Conventional funds during the bearish market (Abdullah et al., 2007). On the basis of the above, the following hypotheses are tested:

H10: There is no significant relationship between religious affiliation and the choice of mutual fund.

H11a: There is no significant difference between individuals' religiosity and their choice of fund.

H11b: There is no significant difference between Muslims' religiosity and their choice of fund.

3.3 Summary

This chapter has presented the conceptual model underpinning the study. Religious affiliation, religiosity, financial advisor, financial risk tolerance, financial and investment knowledge, perceived plan design, and demographics have been hypothesised to be influencing individual retirement savings investment choice decision. However, it is possible that other variables might impact the decision, though no empirical evidence exists to support their inclusion in this study. Chapter 4 discusses the research method employed, and addresses the research design, questionnaire development, sampling procedures, and the data collection procedures adopted.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction

This chapter describes the research method used to answer the research questions. It is organised into eight sections. Section 4.2 describes the research design. This is followed by the development of the questionnaire survey in section 4.3. Sampling procedure is discussed in section 4.4. Section 4.5 describes the data collection procedures. Section 4.6 outlines the analytical techniques used. Ethical considerations are discussed in section 4.7. Section 4.8 summarises this chapter.

4.2 Research Design

The aim of this study is to explore the factors that influence EPF members' retirement savings behaviour. Previous studies on retirement savings behaviour have largely utilised the questionnaire survey for their data collection (Collard, 2009). Considering the confidentiality issues raised by the Employees Provident Fund (EPF) and unit trust management companies (UTMCs) in disclosing actual members' choice of investment, the current study employs a cross-sectional, questionnaire-based survey as the main method of data collection. In the absence of revealed behaviour such as members' investment data from the EPF, this study considers survey as a relevant method to gather reported behaviour such as members' attitude towards their retirement savings.

4.3 Development of Questionnaire Survey

This study utilised two sets of structured questionnaire; one for EPF members, and another for unit trust consultants. The construction of the questionnaires went through several stages. In the early stage, the questionnaire for EPF members was written first, based on existing instruments from the literature review. In addition, several items were developed by the researcher because of limited instruments in related areas. The questionnaire for unit trust consultants was written following the completion of the

questionnaire for EPF members. The questionnaire for unit trust consultants was shorter than the one for EPF members. Most of the items in the consultants' survey were the same as for the members' survey. The consultants' survey was written in such a way as to allow comparability in this study.

Both sets of questionnaires used a closed question format in which the respondent will be asked to select an answer from among a list provided. The questionnaires were written in English. Although the official language in Malaysia is Malay, English is widely used, especially in private organisations.¹⁴ Both questionnaires were accompanied by a covering letter from the researcher explaining the objective of the research and written instructions for completing the questionnaires. The researcher's personal contact information was disclosed should the respondents require further information about the research. Following Dillman (1978), both questionnaires were printed as a booklet. No questions were written on the cover pages. Detailed discussions for both survey instruments are provided in the following sections.

4.3.1 Survey for EPF members

This nine-page questionnaire consisted of eight sections and thirty-six questions. It included questions on demographics, retirement savings behaviour, financial information sources, fund selection criteria, financial and investment knowledge, financial risk tolerance, and religiosity. Table 4.1 on page 64 and 65 summarises the structure of the questionnaire for EPF members.

4.3.1.1 Demographics

Section A of the questionnaire consisted of a fairly standard list of demographic and socio-economic questions. There were ten questions in total including gender, age, marital status, ethnicity, religious affiliation, educational attainment, total individual's before-tax monthly income, length of membership with the retirement plan, total savings in the retirement plan and total individuals' financial wealth, all of which have

¹⁴ Total adult literacy rate 2003 to 2008 = 92%
(Source: http://www.unicef.org/infobycountry/malaysia_statistics.html)

been noted as important variables in studies of retirement savings behaviour. The demographics and socio-economic data enabled the researcher to examine the impact of these characteristics on individuals' retirement savings behaviour. Except for age, the response format used for all demographic and socio-economic variables was presented in categorical format. Respondents were asked to tick the appropriate box for each question.

For ethnicity, the three major ethnic groups considered were Malays, Chinese and Indians. The "Other" category was included to represent other minority ethnic groups. Religious affiliation was measured by asking respondents about the religions with which they identified. Six categories were presented: Islam, Buddhism, Hinduism, Christianity, None and Other. Marital status was classified as: "Single", "Married" and "Other". For education achievement, the categories included were: "Secondary school", "Diploma", "First degree", "Masters degree", "PhD" and "Other". For individual before-tax monthly income, income brackets of "Less than or equal to RM4,000", "Between RM4,001 and RM5,000" and so on were included with the highest bracket of "RM10,001 and above".

Given that the focus of this study is on EPF members, respondents were asked their length of membership with the EPF. The categories of length of membership included were "Less than 5 years", "5-10 years", "11-20 years" and "More than 20 years". Respondents were also asked to indicate their total savings in the EPF. Because it is expected that an EPF member should have a minimum savings balance of RM120,000 at the age of 55, the responses for total savings ranged from "Less than or equal to RM20,000", to "RM140,001 and above". The final item in Section A asked about respondent's financial wealth. For the purpose of this study, financial wealth includes individual's bank deposits, shares, bonds and investment-linked insurance. The responses provided for financial wealth ranged from "Less than or equal to RM10,000" to "RM50,000 and above".

4.3.1.2 Retirement Savings Behaviour

Section B of the questionnaire covers various issues in relation to retirement savings. This section is divided into two parts; the first part is related to the features of the plan,

and the second part is related to members' investment choice. A majority of the questions in this section are developed by the researcher to specifically answer the research questions. This is because the plan features in the EPF are different from those in developed countries. The first part of section B asked the respondents' opinion about their savings level (Question 1). This item was adopted from Byrne (2007). Next, they were asked to indicate their perception on the risk level and dividends of the EPF (Question 2 and 3). Question 4 and 5 asked the respondents' knowledge about EPF investment policy. They were also asked to indicate their agreement with the statements related to EPF investment policy (Question 6).

The second part of Section B focused on Members Investment Scheme (MIS). Brief information about MIS was outlined before asking respondents related questions. The respondents were asked about their awareness of the scheme (Question 7), channel of scheme awareness (Question 8), their eligibility for the scheme (Question 9) and whether or not they have had an investment under the scheme (Question 10). All responses for these items were in categorical format. For those who had invested in unit trusts under MIS, they had to proceed with Question 11 and 12. Question 11 asked respondents to indicate on a 5-point Likert Scale the importance of investing in a unit trust. Five statements were presented, including "Other" option to allow respondents freely express their feelings. Adapted from Fry, Heaney, and McKeown (2007), Question 12 asked respondents the extent of their satisfaction with the main unit trust fund they had invested in.

Question 13 was related to investing in a unit trust. All respondents were asked to indicate their level of agreement to statements presented. Again, all seven items were developed by the researcher based on previous studies (Byrne, 2007). Responses for these items were assessed using a 5-point Likert scale anchored by "1" (Strongly Disagree) to "5" (Strongly Agree). Question 14 and 15 asked the respondents to evaluate the percentage of investment choice and the range of unit trust funds made available under the MIS. Responses were provided in categorical format. Finally in Section B, respondents were asked to indicate their decision to either invest part of their savings in the unit trust, or maintain all of their savings in the default EPF plan (Question 16).

4.3.1.3 Financial Information Sources

Question 1 of Section C listed the following financial information sources: recommendations of friends/family, recommendations of work colleagues, unit trust consultant, Internet/online resource, advertising in the press, seminars, books, catalogues/brochures, and published performance ratings. For each source, members had to indicate whether they used it or not. In addition, they were also asked to rate the importance of those information sources. These items were adopted from Capon et al. (1996). Responses for these items were assessed using a 5-point Likert scale anchored by “1” (Not at all Important) to “5” (Extremely Important).

4.3.1.4 Financial advisor

Question 2 of Section C asked members’ opinions about unit trust consultants that they may deal with in purchasing unit trusts. Five items were assessed on a 5-point Likert Scale anchored by “1” (Not at all important) to “5” (Extremely important). As there are relatively few instruments that directly tap attributes related to unit trust consultants, the researcher developed five items based on the current scenario in the unit trust industry within the Malaysian context.

4.3.1.5 Fund Selection Criteria

Question 1(a - k) of Section D asked respondents to rate the importance of fund criteria when purchasing a unit trust fund. The questionnaire items in this section were adopted from Malaysian studies (Dusuki & Abdullah, 2007; Haron et al., 1994; Ramasamy & Yeung, 2003). Responses for the items were assessed using a 5-point Likert scale anchored by “1” (Not at all Important) to “5” (Extremely Important). To measure the respondents’ choice of a particular fund, the researcher developed an item asking which category of fund the respondents would choose if they decided to invest part of their savings in a unit trust (Question 2, Section D). Responses for this question were in categorical format; “Conventional Fund”, “Islamic Fund”, and “Does not matter”. The latter response was provided to identify any group of respondents that were indifferent in their choice.

As one of the main objectives of this study is to identify whether religiosity influences individual's investment decision, Question 3 of Section D asked the respondents to rate their level of agreement on statements related to investment in an Islamic Fund. Four items were developed, using a 5-point Likert scale anchored by "1" (Strongly Disagree) to "5" (Strongly Agree). As the availability of instruments related to this particular issue is limited, it was deemed necessary to develop an open-ended question to allow respondents to respond in their own way, and not be restricted to the choices provided by the researcher (Pallant, 2005). The respondents were asked: "If you have any other reasons for investing in an Islamic Fund, please specify".

4.3.1.6 Financial and Investment knowledge

Adopted from Hershey and Mowen (2000) and Jacobs-Lawson and Hershey (2005), Section E of the questionnaire asked respondents their perceived level of financial and investment knowledge. Five statements were presented. One of the statement items: "I am knowledgeable about how EPF system works" was modified from "I am knowledgeable about how Social Security works" to suit the Malaysian retirement plan context. In addition, the researcher has also developed a statement to tap knowledge related to Syariah investment principles. Responses for the items were assessed using a 5-point Likert scale anchored by "1" (Strongly Disagree) to "5" (Strongly Agree). The respondent's mean scale score is derived by averaging responses across the five items. Higher scores indicated higher perceived financial knowledge. The reliability estimate for the items was 0.94 in Jacobs-Lawson and Hershey (2005), and 0.79 in Hershey and Mowen (2000).

4.3.1.7 Financial Risk Tolerance

Section F of the questionnaire measured respondents' financial risk tolerance. The five-item instrument was taken from Jacobs-Lawson and Hershey (2005). In their study, they used a seven-point response format. The coefficient alpha level for the scale was 0.83. To allow consistency throughout the present study, the response format was modified to a 5-point Likert scale anchored by "1" (Strongly Disagree) to "5" (Strongly Agree). The respondent's mean scale score is derived by averaging responses across the five items. Although there are a few other instruments available to measure financial risk

tolerance (G. L. Clark & Strauss, 2008; John E. Grable & Lytton, 1999b), it is thought that the instrument adopted was sufficient to measure respondents' perceived financial risk tolerance.

4.3.1.8 Religiosity

One of the objectives of the present study is to explore whether Islamic religiosity had an influence on Muslim individual investment choice decision, especially when they are presented with a choice to invest part of their retirement savings in an alternative investment that complied with Syariah law. This study utilised the instruments developed by Wan Ahmad et al. (2008) to measure the religiosity of Muslim members. These instruments were deemed more appropriate for the present study because they encompass all aspects of Islam. In other words, the questionnaire items comprised statements related to *iman* (faith), *Syariah* (included ibadah and worldly conducts) and *akhlaq* (virtues and vices). In addition, the questionnaire items were developed by taking into consideration "the various levels of *hukum*, that is, obligation (*wajib*), recommendation (*sunnah*) and prohibition (*haram*) of the *Syariah* or the Islamic laws. The differences of *taklif* (religious obligatory) between male and female for certain obligations like paying *zakah fitrah* and going to the mosque to perform prayer in congregation were also noted" (Wan Ahmad et al., 2008, pp. 283-284). In the present study, the Muslim respondents were asked to indicate their commitment on a Likert scales of 1 to 5, which ranged from "never" to "always" for the items of Islamic laws and *akhlaq* (Item 1-15, Section H). For the items of faith, the respondents were asked to which degree they agree with the statements presented. These items (Item 16-22, Section H) took values from "1" (Strongly Disagree) to "5" (Strongly Agree). Following Wan Ahmad et al. (2008), the mean score for the components of *akhlaq* and faith were computed.

Although more than 60 per cent of the Malaysian population is Muslim, the EPF members also consisted of other minority religious groups such as Buddhism, Hinduism and Christian. For this reason, the present study seeks to identify their perceptions regarding religious commitment and whether this dimension has some impact on their retirement savings investment decision. To measure the religious commitment among non-Muslims, the Religious Commitment Inventory-10 (RCI-10), developed by

Worthington et al. (2003) was used. This instrument has strong internal consistency, 3-week and 5-month test-retest reliability, construct validity and discriminant validity. The RCI-10 measures motivational and behavioural commitment to a religious value system, irrespective of the content of beliefs in that faith system and has been validated across different samples (E. L. Worthington et al., 2003). The instrument (see Section G) was composed of ten 5-point Likert-type statements ranging from “1” (Strongly Disagree) to “5” (Strongly Agree) with six statements expressing intrapersonal religiosity (cognitive) and four expressing interpersonal religiosity (behavioural). The cognitive dimension focuses on the individual’s belief or personal religious experience while the behavioural dimension concerns the level of activity in organised religious activities. The respondent’s total score is then computed by summing scores for all ten statements. As the RCI-10 was a general version of religiosity measure, the Muslim respondents were also asked to which degree they agree with the statements presented. Table 4.1 summarises the structure of the complete questionnaire.

Table 4.1: Structure of the questionnaire for EPF members

Section	Variables	Question Number	No. of items	Scale	Main source
A	Demographics	1-10	10	Categorical,	Author
B	Retirement Savings Behaviour	1-4	4	Categorical, Likert scale	Author, (Byrne, 2007), (Fry et al., 2007)
		5	4		
		6	5		
		7-10	4		
		11	5		
		12	1		
		13	7		
		14-16	3		
C	Financial Information Sources	1	9	Likert Scale	(Capon et al., 1996)
		2	5		
D	Fund Selection Criteria	1	11	Likert Scale Categorical	(Ramasamy & Yeung, 2003), (Dusuki & Abdullah, 2007), (Haron et al., 1994), Author
		2	1		
		3	4		
E	Financial and Investment Knowledge	1	5	Likert scale	(James H. Dulebohn, 2002; Hershey & Mowen, 2000; Jacobs-Lawson & Hershey, 2005), (Byrne, 2007)

Section	Variables	Question Number	No. of items	Scale	Main source
F	Financial Risk Tolerance	1	5	Likert scale	(Jacobs-Lawson & Hershey, 2005)
G	Religious Commitment Inventory	1	10	Likert scale	Worthington et al. (2003)
H	Muslim Religiosity	1 2	15 7	Likert scale	Wan Ahmad et al. (2008)

4.3.2 Survey for Unit Trust Consultants

This six-page questionnaire consisted of seven sections and 27 questions. It included questions on demographics, employment, retirement savings behaviour, financial information sources, fund selection criteria, and religiosity. As mentioned earlier in section 4.3, the consultants' survey was shorter than the members' survey. In addition, some of the questions in the consultants' survey were the same as in the members' survey to allow comparability in this research.

4.3.2.1 Demographics

Section A consisted of five questions including gender, age, ethnicity, religion affiliation and highest education achievement. The response format was presented in categorical format. Respondents were asked to tick the appropriate box for each question.

4.3.2.2 Employment

Section B asked the consultants to indicate the length of their employment (in years), the company they were working for and the total fund sales placed for clients for the year ended 31 December 2009. All three questions were in open ended format.

4.3.2.3 Members Investment Scheme (MIS)

Section C was related to MIS, which was similar to the second part of Section B in members' survey. The consultants were asked whether or not they had clients under this

scheme. Question 2 was the same as Question 11 in Section B of members' survey. Here, the consultants were asked their opinion of the importance their clients placed on the reasons for investing in unit trust under the MIS. Questions 3 and 4 were the same as Questions 14 and 15 (Section B) in the members' survey. Question 5 asked the consultants their total fund sales for the year ended 31 December 2009 under this scheme. The final question in Section C asked consultants to estimate the average balance of their clients' fund for the year ended 31 December 2009.

4.3.2.4 Financial Information Sources

There were three questions that made up Section D. Question 1 was similar to Question 1, Section C of the members' survey. The difference was that the consultants were asked the importance they believed their clients would place on the financial information sources. Again, Questions 2 and 3 of this section were similar to Question 2, Section C of the members' survey. Here, the consultants were asked to rate the importance their clients would place on the attributes related to unit trust consultants.

4.3.2.5 Fund Selection Criteria

Section E of the questionnaire comprised seven questions. Items in Question 1 and 2 were the same as items in Question 1, Section D of the members' survey. First, the consultants were asked to rate the importance their clients would place on fund selection. This question was developed to allow comparability between the members' opinion and whether these opinions were the same as those of the consultants. Also, comparison could be made through Question 2 which asked consultants' opinion on the importance of fund selection criteria they would consider.

Regarding the Islamic Fund, the consultants were asked their own level of agreement with the statements presented in Question 3. This question was the same as Question 3, Section D of the members' survey. Question 4 asked the consultants to rate the importance of Islamic principles' knowledge to recommend Islamic Fund to clients. Question 5 asked the consultants to indicate their main source of Islamic fund knowledge. They were also asked to evaluate their understanding of the differences between Islamic Fund and Conventional Fund on a 5-point Likert Scale. The final

question in this section asked the consultants to indicate whether or not they would recommend the Islamic Fund to their clients based on the level of their understanding. A “Yes” or “No” answer was provided.

4.3.2.6 Religiosity

Both Sections F and G of the questionnaire were the same as Sections G and H of the members’ survey.

Table 4.2: Structure of the questionnaire for Unit Trust Consultants (UTCs)

Section	Variables	Question Number	No. of items	Scale	Main source
A	Demographics	1-5	5	Categorical	Author
B	Employment	1-3	3	Open-ended	Author
C	Retirement Savings Behaviour – Members Investment Scheme (MIS)	1 2 3-4 5-6	1 5 2 2	Categorical, Likert scale, Open-ended	Author, (Byrne, 2007), (Fry et al., 2007)
D	Financial Information Sources	1 2 3	9 5 5	Likert Scale	(Capon et al., 1996)
E	Fund Selection Criteria	1 2 3 4-7	11 11 4 4	Likert Scale Categorical	(Ramasamy & Yeung, 2003), (Dusuki & Abdullah, 2007), (Haron et al., 1994), Author
F	Religious Commitment Inventory	1	10	Likert scale	Worthington et al. (2003)
G	Muslim Religiosity	1 2	15 7	Likert scale	Wan Ahmad et al. (2008)

4.4 Sampling

In this study, there were two main target populations; EPF members and unit trust consultants. This section describes the sampling procedures for both groups accordingly.

4.4.1 EPF Members

As at 31st December 2009, the EPF had a total of 12.35 million members. The total number of active and contributing members was 5.79 million. The EPF had a strict privacy policy towards its members' account information. Therefore, it was not possible to obtain a sampling frame of EPF members from the EPF, although several efforts had been initiated through meetings and correspondence with the officers at the EPF headquarters. As a result, the sample was conveniently sourced from employees working in four listed firms and four private universities. The listed firms operate in the oil and gas industry, telecommunications, and commercial business respectively. All four firms were located in Kuala Lumpur. The four private universities have staff coverage in Kuala Lumpur (Central), Pahang (East) and Perak (North). These samples were selected because they were the members of the EPF and also eligible to invest under the MIS. All employees in the firms and private universities chosen had proportionate numbers of Muslim and non-Muslim, as well as different ethnicity. The sampling procedure used staff directories as the sampling frame. The staff directories for universities were available online¹⁵. The sampling frame for the listed firms was obtained from the firms' human resource departments respectively.

4.4.2 Unit trust Consultants

As at 31st December 2008¹⁶, the total number of unit trust consultants stood at 63,205. Similar with the EPF, it was not possible to obtain a sampling frame from the Federation of the Investment Managers Malaysia (FIMM) or previously known as Federation of Malaysian Unit Trust Managers (FMUTM). Nevertheless, after several

¹⁵ www.iium.edu.my, www.utp.edu.my, www.uniten.edu.my, www.mmu.edu.my

¹⁶ FMUTM 2008 Annual Report

correspondences, the researcher managed to obtain cooperation from the FIMM to distribute the questionnaire during the annual convention for unit trust consultants. This convention was attended by 1,800 unit trust consultants from all over the country. Therefore, the list of attendees for this convention was used as the sampling frame for the unit trust consultants.

4.5 Data Collection Procedure

4.5.1 Piloting the Questionnaire

Prior to the distribution of the main questionnaires, a pilot test was carried out to validate the items and the whole scale. This is because a vast number of the measurement items that form the questionnaire were adopted from past studies and developed by the researcher to meet the specific research objectives. The pilot test was carried out in Malaysia in September 2010. Fifty-five participants, including 50 EPF members and five unit trust consultants were conveniently selected to answer the questionnaires. All respondents managed to answer the questions within the time allocated: 15 to 20 minutes. The main feedback given by the respondents was related to the religiosity sections. It was commented that the items in these sections were considered sensitive, which the researcher was aware of from the beginning of the questionnaire development. Nonetheless, these sections were vital in answering the research questions. After discussions with supervisors, a statement was added to acknowledge the sensitivity of religiosity items, before the respondents answer the religiosity sections.

4.5.2 Survey for EPF Members

The main survey for EPF members had been conducted in two ways. For employees of listed firms, the researcher had personally delivered the questionnaires to the human resource officer of those four companies. Gillham (2000) recommended that questionnaires that are personally delivered have a good chance of being returned. 200 copies of the questionnaire had been given out to each firm, making a total of 800 for those four firms. The officers then distributed the questionnaires to their work

colleagues. The survey began at the end of October 2010. The researcher agreed to collect the questionnaires from the officers at the end of November 2010. Within that period, the researcher contacted the officers to check on their feedback.

For employees at four private universities, the survey was carried out online, via Qualtrics. This online software was provided by Edith Cowan University. The researcher emailed the survey to all employees in November 2010. The respondents were invited to participate in the survey by clicking on the address linked in the email. This method was considered because a large sample can be surveyed at low cost. One major limitation of this method however, was the low response rate. To anticipate this outcome, the researcher had personally delivered 200 questionnaires to each representative of two private universities in Kuala Lumpur.

4.5.3 Survey for Unit Trust Consultants

The survey for unit trust consultants was self-administered through cooperation with the FIMM staffs. This took place during the 10th Annual Convention of Unit Trust Consultants on 2nd November 2010, a one-day event running from 8.00 a.m until 6.00 p.m. Prior to the event, the researcher had a meeting with the FIMM staff to discuss the plan for distributing the questionnaire. As FIMM anticipated that the number of participants was large during the event, it would not be effective for the researcher to personally approach every consultant. Therefore, the questionnaire was distributed during the coffee break in the programme. After resuming the programme, the FIMM staff made an announcement to inform the participants about the survey. They were invited to participate in the survey and were required to return the questionnaire in the boxes provided at the entrance hall. The researcher joined the event until it finished. Throughout the programme, the researcher checked the feedback from the participants and politely asked the FIMM staff to make two reminders about the survey throughout the event.

4.5.4 Response Rates

To enhance the response rates for this study, the following strategies were employed:

- Both questionnaires were designed by adopting the principles advanced by Dillman (1978).
- Convenient sampling methods were used.
- Meetings with the authority for the population of interest to get cooperation to participate in the survey.

4.5.4.1 Response Rate for Member Survey

Of the 1200 questionnaires distributed to EPF members, 440 with usable data were returned. The overall response rate was 36.7 per cent. Considering the length of the questionnaire and the sensitivity of religiosity items, the response rate was considered satisfactory. Having received a very poor response rate from the online survey, it was decided that responses from this channel of collection were not included for further analysis.

4.5.4.2 Response Rate for Consultant Survey

A total of 1,600 questionnaires were distributed to unit trust consultants who attended the annual convention of unit trust consultants. Out of these, 600 questionnaires were returned. However, only 561 questionnaires were usable for the study, thereby yielding a response rate of 35 per cent.

4.6 Data Analysis

As discussed in section 4.5.1, a pilot test was carried out in order to test the quality of the research design and the data gathered. The measurement of reliability and validity of the items in the questionnaire were also examined before conducting a formal survey.

4.6.1 Reliability

Pallant (2005) describes the reliability of a scale as how free it is from random error. There are two frequently used indicators of a scale's reliability; test-retest reliability and internal consistency. The present study utilised the internal consistency; this is the degree to which the items that make up the scale are all measuring the same underlying attribute. Cronbach's coefficient alpha was used. The values range from 0 to 1, with higher values indicating greater reliability. Generally, a measure with an Alpha Coefficient above 0.7 is considered to be highly reliable. In this study, Cronbach's Alpha was calculated. Analysis of reliability for the pilot study (among EPF members) was conducted separately for each construct by running PASW 18.0 (SPSS version 18.0). Table 4.3 lists the reliability coefficient of each factor. Alpha scores range from 0.742 to 0.954. As all the constructs have reliability coefficients of above 0.7, it suggests a high reliability for the instrument.

Table 4.3: Reliability Analysis for Pilot Test

Factors/Constructs	Cronbach's Alpha	N of items
Financial information source (Question 1, Section C)	0.906	9
Unit trust consultants (Question 2, Section C)	0.788	5
Fund Selection Criteria (Question 1, Section D)	0.880	11
Islamic Fund (Question 3, Section D)	0.742	4
Financial Knowledge	0.841	5
Financial Risk Tolerance	0.820	5
RCI-10	0.907	10
Muslim Religiosity	0.954	22

4.6.2 Validity

Field (2009) describes validity as "whether an instrument measures what it was designed to measure". There are three common types of validity: content validity, criterion-related validity and construct validity.

4.6.2.1 Content Validity

The content validity of an instrument refers to the degree to which individual items represent the construct being measured, and cover the full range of the construct. Determination of content validity is judgmental and can be approached in a panel evaluation. In this study, the content validity of the measurement instrument was assessed by asking a few experts to examine it and provide feedback for revision. The panel of experts included active researchers in the area of accounting and finance. After they reviewed the questionnaire, changes were made to clarify and eliminate ambiguous statements in instructions and questions according to their recommendations. In addition, during the pilot test, each item statement was examined for its clarity and relevance to the purpose of the research, which resulted in some modifications to the questions. When it appears evident to experts that the measure provides adequate coverage of the concept, a measure has content validity.

4.6.2.2 Criterion-related Validity

The criterion-related validity of an instrument refers to whether the instrument is measuring what it claims to measure.

4.6.2.3 Construct Validity

Construct validity is the approach to validate how well the results obtained from the use of the measure fit the theories around which the test is designed. It can be evaluated by judgmental correlation of the proposed test with established, convergent-discriminant techniques, factor analysis, and multitrait-multimethod analysis.

4.6.3 Analytical procedure for Quantitative Data

There are a number of powerful tools available that can assist the researcher in performing statistical analysis of data. PASW 18.0.1 for Windows (SPSS version 18.0) was used to evaluate the descriptive statistics for analysing the profile of respondents. Other techniques such as the regression-based approach (logistic regression, correlation and coefficients)

were used to identify and confirm the theoretical hypotheses based on the analysis of empirical data.

4.7 Ethical Considerations

In carrying out this study, the researcher is committed to achieving the highest possible ethical standards. Ethics in business and social science research refers to the application of expected societal norms of behaviour or code of conduct while conducting research. Smith (2011) guided that any consideration of ethics would normally address at least appropriate written permission from participating organisations to conduct the study using their staff as subjects, informing participants of the motives for the research, providing feedback of the results to the participants, gaining permission from participating individuals (other than for mail surveys, where return of the questionnaire is taken to imply permission), guaranteeing and delivering both confidentiality and anonymity to the participants, granting the right of withdrawal to participants at any time and guaranteeing the safe storage of research data, usually for a period up to seven years. In treating research subjects, the researcher fully understands her responsibility to protect subjects or respondents from any physical harm, physical or mental, embarrassment, pain or loss of privacy. It should be noted that the research conduct in this study has followed the rules and ethical guidelines set up by the Human Research Ethics Committee of Edith Cowan University.

4.8 Summary

This chapter presents a description of the methodology undertaken for this study, which examines factors that influence individual retirement savings behaviour in Malaysia. The research design employed a cross-sectional, questionnaire based survey to gather data from the EPF members and unit trust consultants. The statistical techniques for data analysis included descriptive analysis, correlation analysis, independent sample t-test, chi-square test, and binary logistic regression. Ethical considerations are also addressed. The next chapter, Chapter 5, provides a detailed analysis of data and findings from both survey questionnaires.

CHAPTER FIVE

DATA ANALYSIS AND RESULTS

5.1 Introduction

This chapter presents the data analysis findings. In general, there are three objectives of data analysis: getting a feel for the data, testing the goodness of data, and testing the hypotheses developed for the research (Sekaran, 2005). This chapter is organised as follows. Section 5.2 presents the descriptive analysis for the survey conducted on the first group of respondents of this study: EPF members. Section 5.3 reports the preliminary analysis on normality, reliability and data validity. Section 5.4 presents the results of bivariate correlation analysis. Section 5.5 reports the results of binary logistic regression models. Section 5.6 describes the results of additional analyses involving non-parametric method. Section 5.7 presents the results of hypothesis testing related to mutual fund selection. Section 5.8 presents the results of hypothesis testing related to choice of fund.

Next, section 5.9 presents the descriptive analysis for the survey conducted on the second group of respondents of this study: unit trust consultants. The overall findings of this study are summarised in section 5.10. The Statistical Package for the Social Science (SPSS) version 18.0 (also known as PASW 18) software was used to analyse the data collected from the surveys.

5.2 Descriptive Analysis for Member Survey

Descriptive analyses are conducted to establish the demographic profile of EPF members. In addition, the descriptive analyses are also employed to establish the retirement savings behaviour of EPF members.

5.2.1 Respondents' Profiles - EPF Members

Table 5.1 presents the demographic characteristics of EPF members who participated in the current study. To identify whether this sample was representative of the general EPF members' population, its characteristics were compared with statistics from 2009 EPF Annual report where possible.

Table 5.1 Panel A: Members' Profiles: Gender

Gender	Sample		EPF Annual Report 2009
	Frequency	Percent (%)	Percent (%)
Male	231	52.5	55.8
Female	209	47.5	44.2
Total	440	100.0	100.0

Table 5.1 Panel B: Members' Profiles: Marital status

Marital status	Frequency	Percent (%)
Single	151	34.3
Married	289	65.7
Total	440	100.0

The sample consisted of slightly more males (52.5%) than females (47.5%). This was comparable to the 2009 EPF Annual report, whose active members consisted of 55.8% males and 44.2% females. The majority of respondents were married (65.7%) while 34.3% were single.

Table 5.1 Panel C: Members' Profiles: Age group

Age Group	Sample		EPF Annual Report 2009
	Frequency	Percent (%)	Percent (%)
30 and below	208	47.3	47.08
31 – 35	98	22.3	14.84
36 – 40	70	15.9	11.94
41-45	29	6.6	9.88
46-50	18	4.1	7.86
51 and above	17	3.8	8.40
Total	440	100.0	100.00

The mean (median) age of respondents was 33.1 (31) with a standard deviation of 8.27 years. Respondents aged 30 years and below dominate the sample (47.3%), which compared favourably with the actual EPF member population by age group (47.08%).

Table 5.1 Panel D: Members' Profiles: Ethnicity

Ethnicity	Sample		2000 Census
	Frequency	Percent (%)	Percent (%)
Malay	344	78.2	65.0
Chinese	59	13.4	26.0
Indian	37	8.4	8.0
Total	440	100.0	100.0

Looking at ethnic composition in Panel D, the majority of respondents were Malays (78.2%). This is not surprising as the Malays form the largest ethnic group in Malaysia. Compared to statistics from the Census of Population and Housing Malaysia 2000, the sample was over-weighted by the Malays (65%) and under-weighted by the Chinese (26%).

Table 5.1 Panel E: Members' Profiles: Religious affiliation

Religion affiliation	Sample		2000 Census
	Frequency	Percent (%)	Percent (%)
Islam	346	78.7	60.4
Buddhism	56	12.7	19.2
Hinduism	32	7.3	6.3
Christianity	5	1.1	9.1
None	1	0.2	5.0
Total	440	100.0	100.0

In terms of religious affiliation, Panel E shows that the largest proportion of the respondents was affiliated to Islam (78.7%). This was followed by Buddhism (12.7%) and Hinduism (7.3%). Another 1.1% of total respondents indicated that they were affiliated with Christianity. By comparison, statistics from the 2000 Census indicated that 60.4% of the population practised Islam, 19.2% Buddhism, 6.3% Hinduism and 9.1% Christianity.

Panel F indicates that the sample is a well educated group with more than 22 percent holding a diploma and 53.2% having completed a University degree. As shown in Panel G, more than two-thirds of total respondents have been members of the EPF for 10 years or less (69.3%).

Table 5.1 Panel F: Members' Profiles: Highest education

Highest education	Frequency	Percent (%)
Secondary	54	12.3
Diploma	98	22.3
First degree	234	53.2
Masters	47	10.7
PhD	3	0.7
Other	4	0.8
Total	440	100.0

Table 5.1 Panel G: Members' Profiles: EPF membership

EPF membership	Frequency	Percent (%)
Less than 5 years	147	33.4
5-10 years	158	35.9
11-20 years	103	23.4
More than 20 years	32	7.3
Total	440	100.0

As depicted in Panel H, the sample median monthly income was between RM4,001 and RM5,000. The majority of respondents (45.2%) earned RM4,000 or less. More than 10 percent of total respondents earned RM10,001 and above. This result indicated that most of the respondents can be classified as middle-class income earners since the majority have monthly incomes within the range of RM1000 to RM5000 (Eighth Malaysian Plan 2001-2005).

Table 5.1 Panel H: Members' Profiles: Monthly income

Monthly Income	Frequency	Percent (%)
Less than or equal to RM4,000	199	45.2
Between RM4,001 and RM5,000	81	18.4
Between RM5,001 and RM6,000	36	8.2
Between RM6,001 and RM7,000	26	5.9
Between RM7,001 and RM8,000	16	3.6
Between RM8,001 and RM9,000	21	4.8
Between RM9,001 and RM10,000	13	3.0
RM10,001 and above	48	10.9
Total	440	100.0

Table 5.1 Panel I: Members' Profiles: Total EPF savings

Total EPF savings	Sample		2009 EPF Report
	Frequency	Percent (%)	Percent (%)
Less than or equal to RM20,000	160	36.4	48.79
Between RM20,001 and RM40,000	97	22.0	18.55
Between RM40,001 and RM60,000	47	10.7	10.36
Between RM60,001 and RM80,000	32	7.3	6.35
Between RM80,001 and RM100,000	33	7.5	4.19
Between RM100,001 and RM120,000	24	5.5	2.86
Between RM120,001 and RM140,000	10	2.3	1.98
RM140,001 and above	37	8.3	6.92
Total	440	100.0	100.00

When asked about total EPF savings as at 31st December 2009, majority of the respondents (36.4%) stated that they have less than RM20,000 in their EPF accounts (Panel I). The sample distribution for total EPF savings showed some consistencies with the one reported in 2009 EPF Annual report, in which there is a decreasing pattern in the lower end of total savings and an increasing one in the upper end of total savings. That is, 8.3% of total respondents have RM140,001 and above in their accounts as compared to 6.92% of total EPF member population. The sample median total EPF savings was between RM20,001 and RM40,000.

Table 5.1 Panel J: Members' Profiles: Total wealth

Total wealth	Frequency	Percent (%)
Less than or equal to RM10,000	267	60.7
Between RM10,001 and RM20,000	62	14.1
Between RM20,001 and RM30,000	25	5.7
Between RM30,001 and RM40,000	14	3.2
Between RM40,001 and RM50,000	22	5.0
RM50,001 and above	50	11.3
Total	440	100.0

As far as the total wealth is concerned, majority of the respondents (60.7%) indicated that they have less than or equal to RM10,000 (Panel J). The sample median total wealth was also less than or equal to RM10,000. Overall, the first sample (EPF members) included in this study appeared to be younger, more educated and more middle-class income earners, which are typical characteristics of the urban Malaysian population.

5.2.2 Retirement Savings Behaviour

This section presents descriptive analyses with regard to certain aspects of retirement savings among EPF members. Questionnaire items related to these aspects came from Section B of the questionnaire survey.

Table 5.2: Perceived level of savings

Given the level of savings of 20% (in 2010) for retirement, do you think:	Frequency	Valid percent (%)
You are saving too much	12	2.7
You are saving the correct amount	166	37.8
You are saving too little	141	32.0
You don't know if you are saving enough	121	27.5
Total	440	100.0

When asked about the level of savings for retirement, the results in Table 5.2 appeared to be mixed. While majority of the respondents stated that they were saving the correct amount for retirement (37.8%), quite a large number of the respondents (32%) said they were saving too little. Another 27.5% of respondents did not know whether they were saving enough. The results are contrast to the UK evidence where 57% of respondents noted they were currently saving too little for retirement (Byrne, 2007).

Figure 5.1 illustrated the perceived level of investment risk in the overall EPF. More than half of total respondents were neutral (54.5%), as indicated by the mean of 2.6 which is close to 3. However, the overall picture seems to indicate that the respondents perceived the level of investment risk in the EPF as not risky (1 = Not at all risky, 5 = Extremely risky).

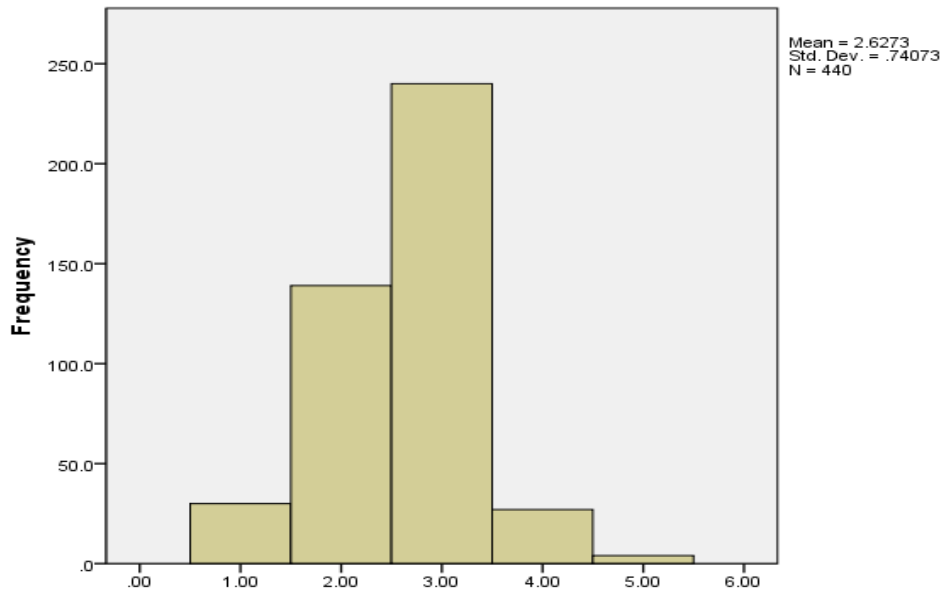


Figure 5.1: Perceived level of investment risk in the EPF

Similarly, a large number of respondents (36.1%) were neither disagree nor agree with a statement regarding the returns/dividends provided by the EPF over the past three years (Mean 2.8 is close to 3). However, the overall picture as depicted in Figure 5.2 indicated that the respondents were not satisfied with the returns provided by the EPF (1 = Strongly disagree, 5 = Strongly agree).

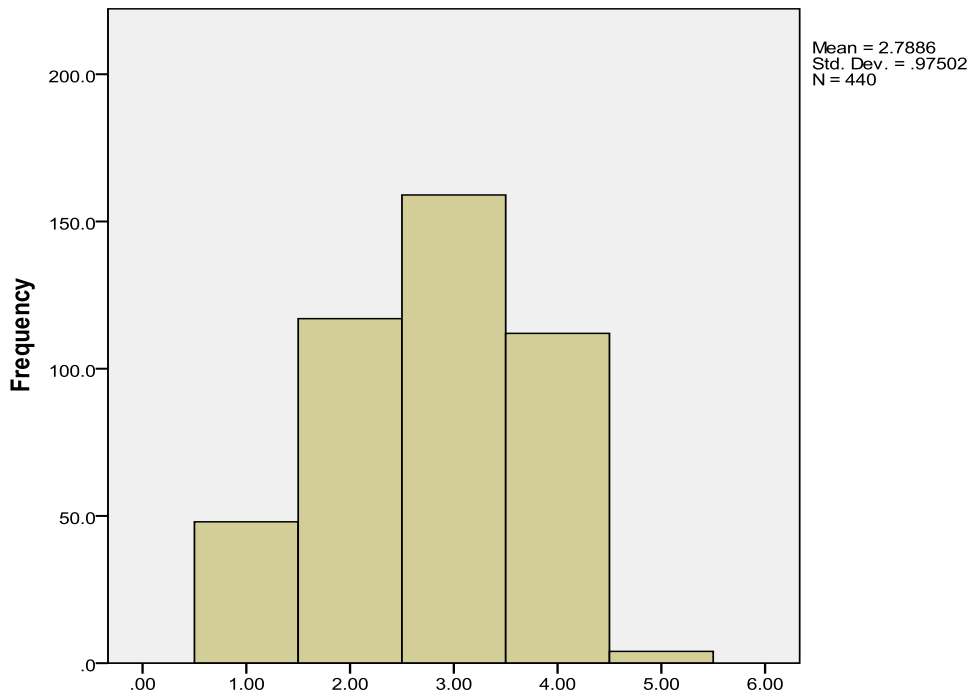


Figure 5.2: Perceived returns/dividends of the EPF

As shown in Table 5.3, a large number of respondents (30.9%) rated that they had good knowledge of EPF’s investment philosophy/policy, although 44.8% of total respondents rated neither poor nor good. This was evidenced by the results in Table 5.4 whereby majority of the respondents stated “Yes” to most of the items related to EPF’s investment philosophy/policy. The only items that majority of respondents (51.1%) did not know was whether EPF consider the environmental issues when making investments.

Table 5.3: Perceived knowledge of EPF’s investment philosophy/policy

How would you rate your knowledge of EPF’s investment philosophy/policy?	Frequency	Valid percent (%)
Extremely poor	19	4.3
Poor	88	20.0
Neither poor nor good	197	44.8
Good	133	30.2
Extremely good	3	0.7
Total	440	100.0

Table 5.4: Responses to EPF’s consideration in making investments

Which of the following does the EPF consider when making investments?	Yes	No	Don’t Know	Total
Exposure to domestic market risks	272 (61.8%)	36 (8.2%)	132 (30.0%)	440 (100.0%)
Exposure to international market risks	208 (47.3%)	71 (16.1%)	161 (36.6%)	440 (100.0%)
Syariah principles	183 (41.6%)	65 (14.8%)	192 (43.6%)	440 (100.0%)
Environmental issues	151 (34.4%)	64 (14.5%)	225 (51.1%)	440 (100.0%)

Table 5.5 presents the mean analysis towards the statements about EPF’s investment philosophy/policy. In their descending order, respondents agreed most with the EPF’s consideration to invest its assets in companies that support the environment (Mean 4 = Agree). This was followed by the transparency in reporting its investment performance. The issue that respondents disagree most was related to EPF’s investments in companies that involved in alcohol production.

Table 5.5: Mean analysis of EPF’s investment philosophy/policy (N=440)

	Mean	SD
EPF is willing to invest its assets in companies that support the environment	4.000	0.843
EPF is transparent in reporting its investment performance	3.421	1.168
EPF is willing to invest its assets in companies that engage in tobacco production or distribution	2.777	1.316
EPF is willing to invest its assets in companies that deal with riba-based banks	2.714	1.382
EPF is willing to invest its assets in companies that are involved in alcohol production	2.459	1.436

5.2.3 Members Investment Scheme (MIS)

Members’ reactions towards the MIS were solicited through Question 7 to 15 (Section B) of the questionnaire survey.

Table 5.6: Crosstabulation of MIS awareness * Source of awareness

Count

	Question B8				Total
	Through EPF	Through UTC	Through family/friends	Other	
Q. B7 Yes	55	133	58	10	256

Notes to Table 5.6: Question 7 asked respondents “Were you previously aware of the Members Investment Scheme?” Question 8 asked respondents “How did you first become aware of this scheme? Please tick only one option.”

The first two (Questions 7 and Question 8) questions of Section of the survey sought to examine members’ awareness of the scheme, and how they become aware of the scheme. As shown in Table 5.6, out of 440 responses obtained through the survey, 256 (58.2%) respondents were aware of the existence of the MIS. The majority (52%) of them became aware of the MIS through unit trust consultants. The latter suggests the importance of the marketing role played by the unit trust consultants.

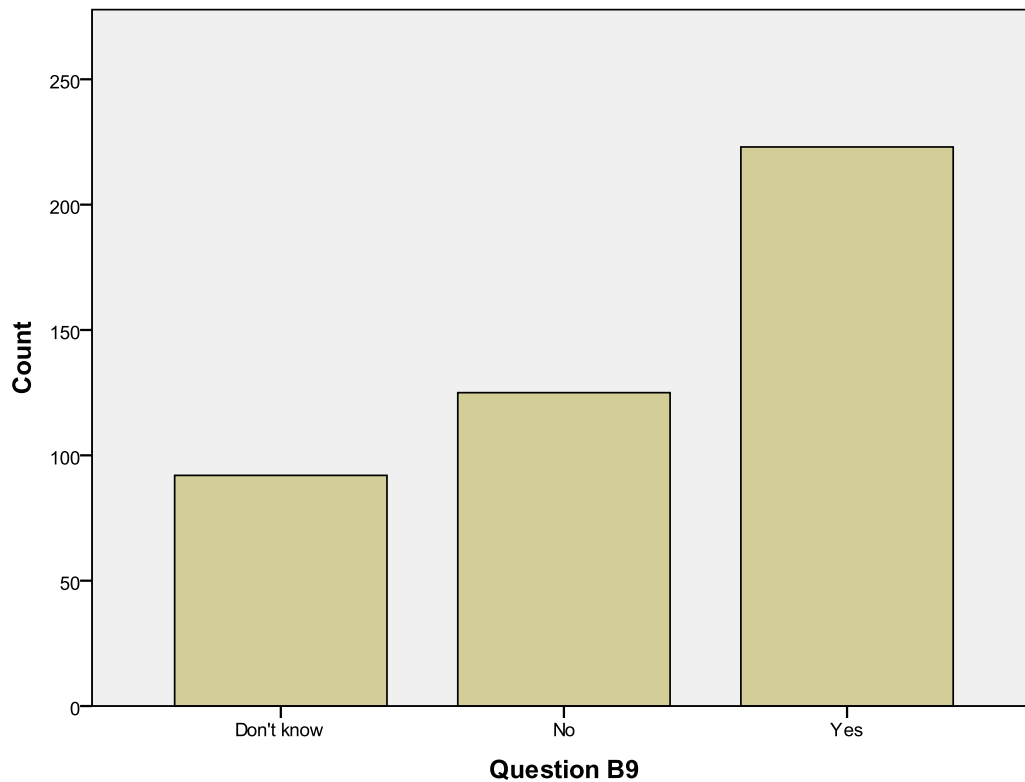


Figure 5.3: Eligibility of MIS withdrawal

Next, the respondents were asked whether they were eligible to withdraw part of their savings under the MIS. As shown in Figure 5.3, 50.7% of total respondents said “Yes” to this question. However, quite a large number (20.9%) of them did not know whether or not they were eligible to withdraw part of their savings under the scheme.

Those who were eligible to invest were further asked whether or not they had invested their savings in external unit trusts, in which 124 (55.6%) had done so. Of this figure, 6 respondents did not disclose their investment value in unit trusts. Therefore, the sample mean (median) investment in unit trusts for 118 respondents was RM 15,127.24 (RM5,500). This was nearly twice the mean investment of members in 2010 EPF Annual Report (RM8,710.11).¹⁷

Respondents that had invested in the unit trusts under the MIS were then presented with a list of possible reasons for doing so. The perceived importance of these reasons, ranked in descending order, is shown in Table 5.7. Clearly, attractive returns had been highlighted as the main reason for withdrawal under MIS. Its mean score of 4.63 is

¹⁷ Authors’ calculation based on EPF 2010 Annual Report: RM4,415,590,624/506,950

close to 5 (i.e. the “Extremely important” category). The next most important reason for withdrawal under the MIS was “to have better control over the type of investment vehicles I want to put my money in’. This result implies that some EPF members prefer to have certain autonomy in the management of their retirement savings. In addition, with a mean score of 3.99, which is close to 4 (i.e. the “Important” category) it is reasonable to suggest that religion influences the investment decision of members. However, this effect will be analysed further using inferential statistics. Nearly 60% of those who had invested under the MIS were satisfied with the performance of their main unit trust funds over the last three years, while 16.9% and 6.5% were very satisfied and dissatisfied respectively.

Table 5.7: Perceived importance of investing in the unit trusts under the MIS

Possible reasons	Mean score	SD
To get more attractive returns	4.63	0.55
To have better control over the type of investment vehicles I want to put my money in	4.10	0.74
To invest according to religious principle/guidance	3.99	0.69
To change the level of risk	3.94	0.87

In general, respondents were asked their opinions with regard to investing in unit trusts. A mean score analysis, ranked in descending order, is shown in Table 5.8. Clearly, majority of the respondents (49.1%) agreed that they want to earn higher rate of return by investing in an external unit trusts. More than 40 percent of respondents also agreed that investing in unit trusts will provide them asset diversification. In addition, the majority of respondents agreed that the cost of investing in unit trusts is high and they might lose some of their retirement savings if investing in unit trusts. It is interesting to note that a slight majority of respondents did not want to take the extra risk of investing in unit trusts (38.4%), did not have enough confidence to choose an external unit trust (36.4%), and had little interest in financial matters (30.5%).

Table 5.8: Responses to Investing in Unit Trusts (N=440)

	Mean score	SD	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
I want to earn a higher rate of return by investing in an external unit trust	3.71	0.83	4 (0.9%)	27 (6.1%)	128 (29.1%)	216 (49.1%)	65 (14.8%)
Investing in an external unit trust will provide asset diversification	3.64	0.79	4 (0.9%)	16 (3.6%)	172 (39.1%)	189 (43.0%)	59 (13.4%)
The cost of investing in external unit trusts is high	3.41	0.85	4 (0.9%)	58 (13.2%)	167 (38.0%)	177 (40.2%)	34 (7.7%)
I might lose some savings if I invest in an external unit trust	3.32	0.83	7 (1.5%)	68 (15.5%)	157 (35.7%)	193 (43.9%)	15 (3.4%)
I do not want to take the extra risk of investing in an external unit trust	3.26	0.89	10 (2.3%)	78 (17.7%)	161 (36.6%)	169 (38.4%)	22 (5.0%)
I do not have enough confidence to choose an external unit trust	3.06	1.04	39 (8.9%)	92 (20.9%)	131 (29.8%)	160 (36.4%)	18 (4.0%)
I have little interest in financial matters	2.85	1.07	55 (12.5%)	115 (26.1%)	124 (28.2%)	134 (30.5%)	12 (2.7%)

Table 5.9 presents the responses related to two features of MIS; percentage of investment choice and range of approved funds. Most respondents (44.8%) stated that the percentage of the excess of savings that should be given to them to invest is 20%, which is the current limit available under the scheme. A further 32.3% indicated they should be given 21% to 40% excess of savings to be invested. In terms of the range of

unit trust funds available under the MIS, 38.9% of respondents stated that it was about right. However, quite a large percentage (46.4%) of respondents stated they “Don’t know” to this question. This may be due to the fact that majority of responses to this category came from those who were not aware of the MIS (122 out of 204).

Table 5.9 Panel A: Perceived investment choice limit

Option	Frequency	Percent (%)
Below 20%	57	13.0
20% (current limit)	197	44.8
21% to 40%	142	32.3
41% to 60%	24	5.5
61% to 80%	13	3.1
81% to 100%	7	1.5
Total	440	100.0

Table 5.9 Panel B: Perceived range of approved funds

Option	Frequency	Percent (%)
Too narrow	40	9.0
About right	171	38.9
Too broad	25	5.7
Don’t know	204	46.4
Total	440	100.0

5.2.4 Financial Information Sources

Table 5.10 presents the responses related to the sources of financial or investment information that may have been used by the individual EPF members. Recommendations of friends/family were the most widely used source of information, with 68% of respondents having cited it as a source of financial and investment information. Survey respondents also reported that they relied heavily on recommendations of work colleagues (59.1%) and unit trust consultants (51.4%). 40.2% of respondents stated Internet or online resource as their financial information source.

Table 5.10: Sources of financial information (N=440)

Sources of Information	% use
Recommendation of friends/family	68.0
Recommendation of work colleagues	59.1
Unit trusts consultants (agent)	51.4
Internet/online resources	40.2
Advertising in the press	32.0
Seminars	22.3
Books	26.6
Catalogues/brochures	32.5
Published performance ratings	33.4

Table 5.11 presents the mean analysis of respondents' perceptions of the importance of these nine financial information sources. Generally, the respondents perceived recommendations of friends/family as important in their investment decisions (3.68). This is followed by unit trust consultants (3.58). Published performance ratings were in the third place of importance (3.51).

Table 5.11: Mean analysis for importance of financial information source

Sources of Information	Mean	Rank
Recommendation of friends/family	3.68	1
Unit trusts consultants (agent)	3.58	2
Published performance ratings	3.51	3
Recommendation of work colleagues	3.48	4
Internet/online resources	3.36	5
Advertising in the press	3.34	6
Books	3.30	7
Seminars	3.29	8
Catalogues/brochures	3.28	9

5.3 Preliminary Analyses

To test the goodness of data, preliminary analyses were performed. The process began with checking the distributions of variables with respect to normality, and conducting reliability analysis and data validity.

5.3.1 Normality Analysis

According to Hair et al. (1995), normality refers to “the degree to which the distribution of the sample data corresponds to a normal distribution”. There are two main methods of assessing normality. Subjectively, normality can be determined through the graphical use of histogram. On the other hand, the normality of data can be measured objectively using two key statistics: Skewness and Kurtosis. Skewness measures the symmetry of the data distribution. Positive values of skewness indicate too many low scores in the distribution, whereas negative values indicate a build-up of high scores. Kurtosis measures the peakness of the distribution. Positive values of kurtosis indicate a pointy and heavy-tailed distribution, whereas negative values indicate a flat and light tailed distribution. The further the value is from zero, the more likely it is that the data are not normally distributed (Field, 2009, p. 139). Another way of assessing the normality of the sample data distribution is by using Kolmogorov-Smirnov test and Shapiro-Wilk test. These tests can be used to see if a distribution of scores significantly differs from a normal distribution.

Table 5.12 presents the results of normality test. The Kolmogorov-Smirnov test results were significant, $p < 0.001$, indicating that the scores of the variables were significantly different from a normal distribution. This significant result can be explained by the large samples utilised in this study. Field (2009) recommended that the results of this test be interpreted in conjunction with other normality assessment such as histogram and the values of skewness and kurtosis. In terms of the shape of the distribution, all five variables have negative values of skewness, reflecting the higher scores obtained by the respondents. Bulmer (1979) suggests a rule of thumb:

- “If skewness is less than -1 or greater than $+1$, the distribution is highly skewed.
- If skewness is between -1 and $-1/2$ or between $+1/2$ and $+1$, the distribution is moderately skewed.
- If skewness is between $-1/2$ and $+1/2$, the distribution is approximately symmetric.”

It appears that the distribution of score on Muslim Religiosity, RCI and financial risk tolerance was approximately symmetric as their skewness values were between -0.5

and +0.5. However, the distribution of score on advisor and financial knowledge was moderately skewed. The kurtosis values of data range from -0.020 to 1.912, indicated normality of data. Kline (1998) suggested that absolute values of univariate kurtosis indexes greater than 8 are indications that the normality assumption is being violated.

Table 5.12: Normality Assessments

Variables	Shape		Normality Test: Kolmogorov-Smirnov ^a		Normality Test: Shapiro-Wilk	
	Skewness	Kurtosis	Statistics	Significance	Statistics	Significance
Muslim Religiosity	-0.460	0.321	0.071	0.000	0.984	0.001
RCI	-0.460	1.587	0.093	0.000	0.965	0.000
Advisor	-0.768	1.912	0.136	0.000	0.940	0.000
Financial risk tolerance	-0.283	-0.020	0.100	0.000	0.982	0.000
Financial knowledge	-0.646	0.804	0.123	0.000	0.960	0.000

a. Lilliefors Significance Correction

Further analysis was conducted to determine whether variables that seemed skewed required data transformation. According to Hair et al. (1995, p. 71), for a noticeable effect from transformation, the ratio of a variable's mean divided by its standard deviation should be less than 4.0. As depicted in Table 5.13, the results of the ratio indicated that none of the data for variables needed a transformation because the ratio for each variable has value above 4.0.

Table 5.13: Ratio of Mean and Standard Deviation of Variables

Variables	Muslim Religiosity	RCI	Advisor	Financial risk tolerance	Financial Knowledge
Mean	88.67	38.01	19.94	14.62	16.50
S.D	7.35	5.36	3.06	3.10	2.99
Ratio	12.06	7.09	6.52	4.72	5.52

Having considered the distribution of the variables that were skewed and as part of the study's variables were in categorical forms, the choice of non-parametric analyses for the study was considered appropriate (Pallant, 2005). Non-parametric techniques do not make assumptions about population distribution and do not have strict requirements as the parametric techniques required (Field, 2009; Pallant, 2005).

5.3.2 Reliability analysis

Reliability is a measure of internal consistency of a multiple item scale (Morgan & Griego, 1998). The most commonly used type of internal consistency reliability is Cronbach's coefficient alpha. It is based on the mean or average correlation of each item in the scale with every other item (Morgan & Griego, 1998, p. 125). The value of Cronbach's alpha can range from 0 to 1. The closer Cronbach's alpha is to 1, the more reliable the scale. In general, reliabilities less than 0.60 are considered to be poor, those in the 0.70, acceptable, and those over 0.80, good (Sekaran, 2005). Before conducting a Cronbach's alpha, it must be noted that all items are scored in the same direction. In this study, item j, k, t and v of Muslim Religiosity are reverse phrased to mitigate response bias. Therefore, the score for these items needs to be reversed. Table 5.14 shows the Cronbach's alpha value for each of the variables used in this study. The overall alpha for each subscale is more than 0.7, which indicates good reliability.

Table 5.14: Reliability Analysis

Variables	N	Number of Items	Cronbach's Alpha
RCI	439	10	0.881
Muslim Religiosity	346	22	0.764
Advisor	440	5	0.871
Financial knowledge	440	5	0.853
Financial risk tolerance	440	5	0.806

5.3.3 Data Validity

Validity refers to the extent to which the instrument actually measures the construct it purports to measure. As mentioned earlier in Chapter 4, content validity was determined on the basis of expert judgment.

5.4 Bivariate Correlation

To explore the relationship between two variables, non-parametric Spearman's Rank Order Correlation (ρ) was employed. Table 5.15 presents a matrix of the bivariate correlations between variables used in this study. Except for Muslim religiosity and RCI, the results indicated that all independent variables were significantly correlated

with investment choice decision at the 5% level or better. As expected, financial risk tolerance and financial knowledge were significant and positively correlated with investment choice decision ($r = .25$, $r = .20$ respectively). In addition, financial advisor was also significant and positively correlated to investment choice decision ($r = .14$). For perceived plan design, the level of investment choice was positively correlated to investment choice decision ($r = .13$), while perceived range of fund was negatively correlated with investment choice decision ($r = -.30$).

Looking at the relationship between demographic variables and investment choice decision, the results revealed that gender has the highest correlation coefficient ($r = -.261$), followed by age ($r = .218$), monthly income ($r = .206$), total EPF savings ($r = .195$), EPF membership ($r = .172$), marital status ($r = .169$), total wealth ($r = .146$), ethnicity ($r = .140$), religious affiliation ($r = .137$) and highest education ($r = .121$). The results also indicated that all demographic variables were positively correlated to the investment choice decision, with the exception of gender. The inverse relationship between gender and investment choice decision suggests that female were less likely to invest part of their savings in the unit trusts. The correlation results thus support hypotheses H2a, H2b, H3, H4, H5, H6a, H6b and H7 as were stated below:

- H2a: There is no association between individuals' religiosity and their retirement savings investment choice decision.
- H2b: There is no association between Muslims' religiosity and their retirement savings investment choice decision.
- H3: There is an association between individuals' perceived importance of financial advisors and their retirement savings investment choice decision.
- H4: There is a positive association between individuals' financial risk tolerance and their retirement savings investment choice decision.
- H5: There is a positive association between individuals' financial knowledge and their retirement savings investment choice decision.
- H6a: There is an association between the perceived level of investment choice and retirement savings investment choice decision.
- H6b: There is an association between the perceived range of funds and retirement savings investment choice decision.

- H7: Demographic variables such as gender, age, marital status, ethnicity, education level, income, and wealth have effects on individuals' retirement savings investment choice decision.

Table 5.15: Spearman's rho Bivariate Correlation Matrix*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. InvChoiceDecision	1																	
2. MuslimReligiosity	.00	1																
3. FinRiskTolerance	.25	-.17	1															
4. Knowledge	.20	.11	.28	1														
5. RCI-10	.06	.38	-.10	.17	1													
6. Advisor	.14	.23	-.08	.10	.25	1												
7. Plan_Des1	.13	.01	-.05	-.04	.03	.14	1											
8. Plan_Des2	-.30	-.04	-.15	-.25	-.01	-.10	.01	1										
9. Gender	-.26	-.05	-.24	-.12	-.02	-.02	.04	.08	1									
10. Age	.22	.05	.14	.12	.12	.00	.13	-.16	-.15	1								
11. Marital status	.17	.04	-.00	.12	.18	.04	.18	-.07	-.02	.56	1							
12. Ethnicity	.14	.06	.21	.07	-.22	-.03	-.11	-.14	-.28	.16	-.05	1						
13. Rel_Affiliation	.14		.22	.07	-.22	-.04	-.12	-.14	-.30	.15	-.06	.98	1					
14. High_Education	.12	.03	.13	.01	.11	.13	-.02	-.02	-.11	.05	-.03	.10	.09	1				
15. Monthly income	.21	-.00	.07	.05	.16	.06	.10	-.05	-.12	.56	.48	.06	.05	.39	1			
16. Membership	.17	-.03	.06	.08	.03	-.04	.17	-.09	-.08	.77	.49	.03	.02	-.00	.51	1		
17. EPF savings	.20	-.03	.10	.11	.10	-.03	.17	-.05	-.16	.74	.44	-.01	-.02	.19	.67	.75	1	
18. Wealth	.15	-.01	.13	.12	.02	-.08	.13	-.09	-.13	.48	.27	.06	.04	.19	.49	.46	.58	1

* Bold text indicates significance at the 5% level or better

5.5 Binary Logistic Regression

The preceding section addressed the relationship between two variables in terms of their directions as well as the strength of the relationships. This section extends the correlation analysis to the prediction of dependent variable value from the values of independent variables. A binary logistic regression framework was utilised as the dependent variable involved categorical outcome with two categories. The dependent variable (outcome) of this study is the investment choice decision, that is whether or not to invest part of retirement savings in the unit trusts (0 = maintain in default, 1 = invest in unit trusts). The independent variables (predictors) of this study are individuals' religiosity, perceived importance of financial advisor, perceived financial risk tolerance, perceived financial knowledge, perceived plan design, as well as a range of demographic variables. Except for gender and marital status, all demographic variables have more than two categories. Therefore, the first category for each variable was coded as reference group.

One of the main objectives of this study is to examine the role of religion in investment choice decision. As mentioned earlier in Chapter 4, the religion construct was operationalised using religious affiliation and religiosity. Religiosity was measured using two sets of instrument: Religious Commitment Inventory (RCI) was used to tap religious commitment among all respondents, while Muslim Religiosity was used to tap religious commitment among Muslim respondents. Therefore, two models were employed to test the hypotheses in this study.

5.5.1 Assumptions of logistic regression

Logistic regression does not make any assumption of normality, linearity, and homogeneity of variance for the independent variables. However, some other assumptions still apply and are discussed below.

5.5.1.1 Sample size

There are two aspects of sample size that need to be considered; the number of cases in the sample and the number of predictors (independent variables) used in the study. If a small sample with a large number of predictors were used in the study, one may encounter problems with the analysis including the problem of the solution failing to converge. Tabachnick and Fidell (2001, p. 117) give a formula for calculating sample size requirements, taking into account the number of independent variables any study wish to use: $N > 50 + 8m$ (where m = number of independent variables). As many demographic variables contain several categories, the current study has 45 independent variables and as such, according to the given formula, requires a total of 410 cases or subjects. This study received 440 and 561 usable responses, which exceeded this initial requirement.

5.5.1.2 Multicollinearity

Multicollinearity exists when the independent variables are said to be highly correlated when their r value is equal to 0.9 and above (Field, 2009; Pallant, 2005). Multicollinearity was assessed through the examination of correlation matrices as presented earlier in Table 5.15. An examination of Spearman's rho correlation matrices revealed that there were five variables that had correlations of .70 or greater. The highest was between Religious Affiliation and Ethnicity (.98). This could be due to the fact that Malay is generally affiliated to Muslim and majority of the EPF members in this study are Malay.

Further tests were conducted based on SPSS's collinearity statistics analysis by examining the variables' tolerance scores and variance inflation factor (VIF). As a rule of thumb, a factor substantially greater than ten indicates the presence of harmful collinearity. Specifically, all of the models had independent variables with tolerance scores above the cut-off point of .10 and VIF scores less than 10 (Pallant, 2005). This indicated the absence of serious multicollinearity. Therefore, these variables were retained for analysis.

5.5.1.3 Outliers

In logistic regression terms, a case may be strongly predicted by a model to be one category but in reality be classified in the other category (Pallant, 2005). Outliers can be identified by inspecting the residuals. The last table in the output of logistic regression analysis, labelled *Casewise List* gives further information about cases which may be outliers, especially when the value of the case is above 3.

5.5.2 Model (1)

The following first model was employed to test the effect of religious affiliation (H1), RCI (H2a), financial advisor (H3), financial risk tolerance (H4), financial knowledge (H5), plan design (H6) and demographics (H7) on the likelihood to invest part of retirement savings in the unit trusts.

$$\begin{aligned} \text{Log (Likelihood Invest)} = & B_0 + B_1\text{Religious_Affiliation} + B_2\text{RCI} + B_3\text{Advisor} + \\ & B_4\text{Fin_RiskTolerance} + B_5\text{Fin_Knowledge} + B_6\text{Plan Design1} + B_7\text{Plan Design2} + \\ & B_8\text{Gender} + B_9\text{Age} + B_{10}\text{Marital Status} + B_{11}\text{Ethnicity} + B_{12}\text{Education} + B_{13}\text{Income} + \\ & B_{14}\text{EPF_membership} + B_{15}\text{EPF_Savings} + B_{16}\text{Wealth} \end{aligned} \quad (1)$$

Based on the entry method, the results of the first logistic regression analysis were illustrated in Table 5.17. The Omnibus test results ($\chi^2 = 200.655$, 45 degrees of freedom, $P = 0.000$) revealed that the model was significant compared to the base model. Based on Cox & Snell R^2 and Nagelkerke R^2 , the model explained between 36.7% and 49.0% of the variation in investment decision. The Hosmer–Lemeshow test results ($\chi^2 = 6.928$, 8 degrees of freedom, $P = 0.544$) showed that the goodness of fit was satisfactory. In other words, the null hypothesis of a good model fit to data was tenable. Overall, the model correctly classified 78.1% of respondents, an improvement over the 53.5% in the base model. As depicted in Table 5.16, the prediction for members to invest in the unit trusts was more accurate (79.1%) than that for those who were not (77.0%).

As some of the independent variables are categorical, the coefficient (B) indicates the direction and size of an increase in the log-odds of investing part of members' savings in unit trust, given a one unit increase in the explanatory variable. There are four

categories for religious affiliation, five categories for plan design 1, four categories for plan design 2, three categories for ethnicity, five categories for education eight categories for monthly income, four categories for EPF membership, eight categories for total EPF savings, and six categories for total wealth. Each coefficient is compared to a baseline category as shown in table 5.17.

Diagnostic statistics were also examined after the logistic regression analysis. It appeared that the basic residual statistics for this model were pretty good. There were no unusually high values of Cook's distance¹⁸ (less than 1). The average leverage values for all cases lie between 0 and 1. All cases had DFBetas less than 1 and for standardized residuals, less than 5% of cases had absolute values above 2 (3.2%).

Table 5.16: Classification Table for Model (1)^a

Observed	Predicted		% Correct
	Maintain	Invest	
Maintain	157	46	77.0
Invest	49	186	79.1
Overall % Correct			78.1

a. The cut value is 0.50

Table 5.17: Logistic Regression Results for Model (1)

	B	Exp (B)
Constant	-6.614	0.001***
Religious_Affiliation (base: Islam)		
Buddhism	-1.515	.220
Hinduism	.140	1.150
Christianity	-2.753	.064
RCI	.018	1.019
Advisor	.164	1.178***
Fin_RiskTolerance	.132	1.141***
Fin_Knowledge	.001	1.001
Plan design1 (Base: below 20%)		
20% (current limit)	.470	1.599
21% - 40%	1.304	3.686***
41% - 60%	1.508	4.520**
61% - 100%	-.975	.377
Plan Design2 (Base: Too narrow)		
About right	.818	2.266*
Too broad	-.621	.538
Don't know	-.561	.571

¹⁸ Cook's distance is a measure of the influence which a case has on the solution. A case is identified as influential if it's Cook's distance is greater than 1.0.

	B	Exp (B)
Gender - female	-1.037	.354***
Age	-.027	.973
Marital status – married	.733	2.081**
Ethnicity (base: Malay)		
Chinese	2.159	8.666
Indian	.123	1.130
Education group (Base: Secondary school)		
Diploma	.428	1.535
First degree	.392	1.480
Masters degree	-.192	.825
PhD and others	-1.003	.367
Monthly Income (base <=RM4,000)		
Between RM4,001 and RM5,000	.018	1.018
Between RM5,001 and RM6,000	-1.252	.286**
Between RM6,001 and RM7,000	1.231	3.423
Between RM7,001 and RM8,000	.612	1.845
Between RM8,001 and RM9,000	1.665	5.286
Between RM9,001 and RM10,000	.148	1.159
RM10,001 and above	.698	2.011
EPF Membership (base: <5 years)		
5-10 years	1.254	3.505***
11-20 years	.343	1.409
More than 20 years	-.053	.949
Total EPF savings (base: <=RM20,000)		
Between RM20,001 and RM40,000	.077	1.080
Between RM40,001 and RM60,000	.115	1.122
Between RM60,001 and RM80,000	.808	2.244
Between RM80,001 and RM100,000	-.695	.499
Between RM100,001 and RM120,000	.758	2.134
Between RM120,001 and RM140,000	-.267	.766
RM140,001 and above	1.304	3.685*
Total wealth (Base: <= RM10,000)		
Between RM10,001 and RM20,000	.558	1.746
Between RM20,001 and RM30,000	1.151	3.161**
Between RM30,001 and RM40,000	.032	1.032
Between RM40,001 and RM50,000	.202	1.223
RM50,001 and above	-.698	.497

N=439, Model -2 Log likelihood = 405.737,
Cox & Snell R² = .367, Nagelkerke R² = .490
Hosmer & Lemeshow test (6.928) = .544
Omnibus Model Chi-Square (45) = 200.655, p<0.01

***p<0.01, **p<0.05, *p<0.1

5.5.3 Model (2)

The second model was employed to test the effect of RCI (H2a), Muslim religiosity (H2b), financial advisor (H3), financial risk tolerance (H4), financial knowledge (H5), plan design (H6) and demographics (H7) on the likelihood to invest part of retirement savings in the unit trusts. The demographic variables included in this model were similar to those in the first model, except for ethnicity and religious affiliation that were omitted for two reasons. First, the majority of the Malays were Muslim, and second, the category variable religious group was constant for the selected cases. Since a constant term was specified, the variable will be removed from the analysis. As compared to the first model, the second model has a reduced number of respondents (N=346) due to the fact that only Muslim respondents were considered in the analysis.

$$\begin{aligned} \text{Log (Likelihood Invest)} = & B_0 + B_1\text{MuslimReligiosity} + B_2\text{RCI} + B_3\text{Advisor} + \\ & B_4\text{Fin_RiskTolerance} + B_5\text{Fin_Knowledge} + B_6\text{Plan Design1} + B_7\text{Plan Design2} + \\ & B_8\text{Gender} + B_9\text{Age} + B_{10}\text{Marital Status} + B_{11}\text{Education} + B_{12}\text{Income} + \\ & B_{13}\text{EPF_membership} + B_{14}\text{EPF_Savings} + B_{15}\text{Wealth} \end{aligned} \quad (2)$$

Table 5.19 presents the results of the second logistic regression analysis. The Omnibus test results ($\chi^2 = 135.108$, 41 degrees of freedom, $P = 0.000$) revealed that the model was significant compared to the base model. The value of Cox & Snell R^2 and Nagelkerke R^2 showed that the model explained between 32.3% and 43.1% of the variation in investment decision, slightly less than its counterpart in model 1. But, prediction success for the cases used in the development of the model was still relatively high, explaining its overall prediction success rate of 75.1% and its correct prediction rate of 73.8% for those willing to invest in the unit trusts and 76.4% for those who unwilling to invest (Table 5.18). The Hosmer–Lemeshow test results ($\chi^2 = 4.915$, 8 degrees of freedom, $P = 0.767$) showed that the goodness of fit was satisfactory, indicating an acceptable match between the predicted and the observed.

Diagnostic statistics were also examined after the logistic regression analysis. It appeared that the basic residual statistics for this model were good. There were no unusually high values of Cook's distance (less than 1). The average leverage values for

all cases lie between 0 and 1. All cases had DFBetas less than 1 and for standardized residuals, less than 5% of cases had absolute values above 2 (3.5%).

Table 5.18: Classification Table for Model (2)^a

Observed	Predicted		% Correct
	Maintain	Invest	
Maintain	133	41	76.4
Invest	45	127	73.8
Overall % Correct			75.1

a. The cut value is 0.50

Table 5.19: Logistic Regression Results for Model (2)

	B	Exp (B)
Constant	-2.718	.066
Muslim Religiosity	-.022	.978
RCI	.044	1.045
Advisor	.178	1.195***
Fin_RiskTolerance	.102	1.108**
Fin_Knowledge	-.023	.977
Plan design1 (Base: below 20%)		
20%	.276	1.318
21% - 40%	.949	2.582**
41% - 60%	1.387	4.002*
61% - 100%	-.937	.392
Plan Design2 (Base: Too narrow)		
About right	.593	1.809
Too broad	-.423	.655
Don't know	-.851	.427*
Gender - female	-1.213	.297***
Age	-.075	.928**
Marital status – married	.769	2.159**
Education group (Base: Secondary school)		
Diploma	.074	1.077
First degree	.085	1.088
Masters degree	-.227	.797
PhD and others	-.958	.384
Monthly Income (base <=RM4,000)		
Between RM4,001 and RM5,000	-.385	.680
Between RM5,001 and RM6,000	-1.507	.222***
Between RM6,001 and RM7,000	1.219	3.383
Between RM7,001 and RM8,000	.850	2.340
Between RM8,001 and RM9,000	1.660	5.258
Between RM9,001 and RM10,000	.052	1.053
RM10,001 and above	.554	1.741
EPF Membership (base: <5 years)		
5-10 years	.910	2.484**
11-20 years	.037	1.038

	B	Exp (B)
More than 20 years	.025	1.026
Total EPF savings (base: <=RM20,000)		
Between RM20,001 and RM40,000	.020	1.020
Between RM40,001 and RM60,000	.266	1.305
Between RM60,001 and RM80,000	.846	2.331
Between RM80,001 and RM100,000	-.489	.613
Between RM100,001 and RM120,000	1.150	3.158
Between RM120,001 and RM140,000	.552	1.736
RM140,001 and above	1.761	5.818*
Total wealth (Base: < = RM10,000)		
Between RM10,001 and RM20,000	.502	1.652
Between RM20,001 and RM30,000	1.739	5.690**
Between RM30,001 and RM40,000	-.142	.868
Between RM40,001 and RM50,000	.715	2.044
RM50,001 and above	-.775	.461

N=346, Model -2 Log likelihood = 344.538,
Cox & Snell R² = .323, Nagelkerke R² = .431
Hosmer & Lemeshow test (4.915) = .767
Omnibus Model Chi-Square (41) = 135.108, p<0.01

***p<0.01, **p<0.05, *p<0.1

5.5.4 Hypotheses Testing

Based on logistic regression analyses, this section presents the results of testing the following hypotheses:

5.5.4.1 Religion and Investment Choice Decision

The study hypothesised that there was no association between religious affiliation and investment choice decision. The results in Table 5.17 showed that religious affiliation was not significant, thereby supporting Hypothesis 1.

With regard to RCI, the results in Table 5.17 and Table 5.19 showed that individuals with higher RCI were more likely to invest part of their retirement savings in the unit trusts, as reflected by the positive B coefficients. However, this effect was not significant, suggesting that RCI had no direct influence on investment choice decision. Therefore, Hypothesis 2a that there was no association between RCI and investment choice decision was supported.

Turning to Muslim religiosity, the study hypothesised that there was no association between Muslim religiosity and their investment choice decision. The results in Table 5.19 revealed that Muslim religiosity was not significant. Therefore, Hypothesis 2b was supported.

5.5.4.2 Financial Advisor and Investment Choice Decision

The study hypothesised that there was an association between individuals' perceived importance of financial advisor and their investment choice decision. The results in Table 5.17 and Table 5.19 indicated that financial advisor was significant at the 1% level. The positive sign on the B coefficient suggests that the higher perceived importance individuals have on financial advisor, the more likely they will invest part of their retirement savings in the unit trusts. In addition, the odds ratio (OR) denoted by $\text{Exp}(B)$ in Table 5.17 (Table 5.19) suggests that the odds of individuals investing in unit trusts is 1.178 (1.195) higher for every one-unit increase in financial advisor score, holding all other independent variables constant. Thus, Hypothesis 3 was substantiated.

5.5.4.3 Financial Risk Tolerance and Investment Choice Decision

Financial risk tolerance is expected to be positively associated with investment choice decision. The results in Table 5.17 and Table 5.19 showed that the positive B coefficient sign of financial risk tolerance were as expected and significant at the 1% and 5% level respectively. The results suggest that individuals with higher financial risk tolerance are more likely to invest part of their retirement savings in the unit trusts. The OR denoted by $\text{Exp}(B)$ in Table 5.17 (Table 5.19) suggests that the odds of individuals investing in unit trusts is 1.141 (1.108) higher for every one-unit increase in financial risk tolerance score, holding all other independent variables constant. Therefore, Hypothesis 4 was supported.

5.5.4.4 Financial Knowledge and Investment Choice Decision

The study hypothesised that financial knowledge has a positive effect on individuals' investment choice decision. It is interesting to note that in Table 5.17, the B coefficient

sign was positive, although with a very small magnitude. In contrast, Table 5.19 showed that the coefficient sign was negative. This implied that Muslim respondents that scored higher on financial knowledge were less likely to invest part of their retirement savings in the unit trusts. However, both results revealed that financial knowledge was not significant. Therefore, Hypothesis 5 was rejected.

5.5.4.5 Perceived Plan Design and Investment Choice Decision

Two hypotheses were proposed regarding the effect of plan design on investment choice decision. First, perceived level of investment choice was associated with investment choice decision. Second, perceived range of funds was associated with investment choice decision. The results in Table 5.17 and Table 5.19 indicated that the first three levels of investment choice have positive B coefficients, while the fourth level had a negative B coefficient. However, only level 2 and level 3 were significant, and their OR denoted by $\text{Exp}(B)$ were compared with reference group (below 20%). Hence the mixed results supported Hypothesis 6a.

Meanwhile, the results in Table 5.17 and Table 5.19 showed that the first group of perceived range of fund was positively related to investment choice decision. Both group 2 and group 3 had negative B coefficients. It is interesting to note that in Table 5.17, the positive association between group 1 and investment choice decision was significant. Its OR denoted by $\text{Exp}(B)$ was compared with reference group (too narrow). On the other hand, in Table 5.19, the negative association between group 3 and investment choice decision was significant. Again, its OR denoted by $\text{Exp}(B)$ was compared with reference group (too narrow). Overall, the mixed results for perceived range of funds supported Hypothesis 6b.

5.5.4.6 Demographics and Investment Choice Decision

The results in Table 5.17 and Table 5.19 indicated that gender was negatively related to investment choice decision ($B_1 = -1.037$, $B_2 = -1.213$). The significant result suggests that female were less likely than male to invest part of their retirement savings in the unit trusts. The OR denoted by $\text{Exp}(B)$ in Table 5.17 (Table 5.19) suggests that the odds

of females investing in unit trusts is .354 (.297) less compared to males counterpart, holding all other independent variables constant.

Meanwhile, the results in Table 5.17 and Table 5.19 showed that age was negatively related to investment choice decision, as reflected by the negative B coefficients. However, this effect was not significant as depicted in Table 5.17. In contrast, the significant result in Table 5.19 implied that older Muslims were less likely to invest part of their retirement savings in the unit trusts. Its OR denoted by $\text{Exp}(B)$ suggests that the odds for Muslim investing in the unit trusts is 0.928 lower for every one unit increase in age.

With regard to marital status, the significant results in Table 5.17 and Table 5.19 indicated that married individuals were more likely than singles to invest part of their retirement savings in the unit trusts. The OR denoted by $\text{Exp}(B)$ in Table 5.17 (Table 5.19) suggests that the odds of married individuals investing in unit trusts is 2.081(2.159) higher compared to singles counterpart, holding all other independent variables constant.

Turning to the effect of education, the results in Table 5.17 and Table 5.19 showed that there was a positive association between diploma holders and first degree holders with investment choice decision. In contrast, the association between Masters degree holders and above with investment choice decision was found to be negative. Nevertheless, all associations were not significant.

Looking at monthly income, the results in Table 5.17 and Table 5.19 indicated that all income groups, except group 2 were not significant. The negative association between group 2 and investment choice decision was significant. Its OR denoted by $\text{Exp}(B)$ was compared with reference group (less than or equal to RM4,000).

In terms of the EPF membership, all groups showed no significant association, except for group 1 which was significant at the 1% level, as indicated in Table 5.17 and Table 5.19. Its OR denoted by $\text{Exp}(B)$ was compared with reference group (less than 5 years).

Turning to total EPF savings, the results in Table 5.17 and Table 5.19 indicated that all groups had no significant association with investment choice decision, except for group 7 which was significant at the 10% level. Its OR denoted by Exp(B) was compared with reference group (less than or equal to RM20,000).

The final demographic variable of interest was the total wealth. The results in Table 5.17 and Table 5.19 showed that all groups had no significant association with investment choice decision, except for group 2 which was significant at the 5% level. Its OR denoted by Exp(B) was compared with reference group (less than or equal to RM10,000).

5.6 Additional Analyses

The results from logistic regression showed that religious affiliation, RCI and Muslim religiosity had no significant effect in predicting the individuals' likelihood to invest part of their retirement savings in the unit trusts. However, additional analyses were conducted to examine whether there were any significant differences in investment choice decision between the groups of these variables. As such, the Chi-Square test was chosen because the independent variables consisted of more than two groups and the dependent variable, investment choice decision, was measured at the nominal (categorical) level.

To identify whether there are significant differences between religious affiliation and investment choice decision, a cross-tabulation was performed and presented in Table 5.20.

Table 5.20: Religious affiliation*Investment Decision Crosstabulation

Count	Investment Decision		Total
	Maintain	Invest	
Religious affiliation			
Islam	172	174	346
Buddhism	19	37	56
Hinduism	8	24	32
Christianity	4	1	5
Total	204	235	439

Pearson Chi-Square tests value = 14.839^a, df = 3, Sig = .002, N =439

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 2.32.

As noted at the end of Table 5.20, the Pearson Chi-Square value was highly significant ($p < 0.01$), indicating that there was a significant difference between the religious groups. However, 25 percent of the cells have an expected count less than 5. This violated one of the assumptions of the chi-square test (minimum expected count must be 5). Therefore, to have a more valid result, the type of religious affiliation was reduced to two categories: Muslim and non-Muslim. The chi-square test was re-run and the results were depicted at the end of Table 5.21.

Table 5.21: Religiousgroup* Investment Decision Crosstabulation

Religious group		Investment Decision		Total
		Maintain	Invest	
Muslim	Count	172	174	346
	Expected Count	160	186	346
Non-Muslim	Count	31	62	93
	Expected Count	43	50	93
Total	Count	203	236	439
	Expected Count	203	236	439

Pearson Chi-Square tests value = 9.580^a, df = 1, Sig = .002, N =439

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 43.22.

The Pearson Chi-Square value was highly significant ($p < 0.01$). In this case, there was no expected count less than 5, so the chi-square assumption was not violated. This significant result suggests that there were significant differences in retirement savings investment choice decision between the religious affiliation groups. Relatively, there was an equal proportion of Muslims maintaining their savings in the default fund as well as investing part of their savings in a unit trust fund. On the other hand, a majority of non-Muslims prefer to invest part of their savings in the unit trusts.

To examine whether there are significant differences between RCI and investment choice decision, a chi-square test was employed. For the purpose of group comparison, the respondents were classified as low, moderate and highly religious based on their total scores on RCI scales. Following Worthington et al. (2003), respondents that scored at least one standard deviation higher than the mean score were classified as highly religious, those who scored one standard deviation below than the mean score

were classified as low religiosity, and those scored in between were classified as moderate religiosity. Figure 5.4 tabulated the total scores of RCI. Table 5.22 shows that 13.9 per cent of total respondents are classified as highly religious. This is consistent with Worthington et al. (2003) who postulate that highly religious people are those who are within the most religiously committed 15 per cent of the population.

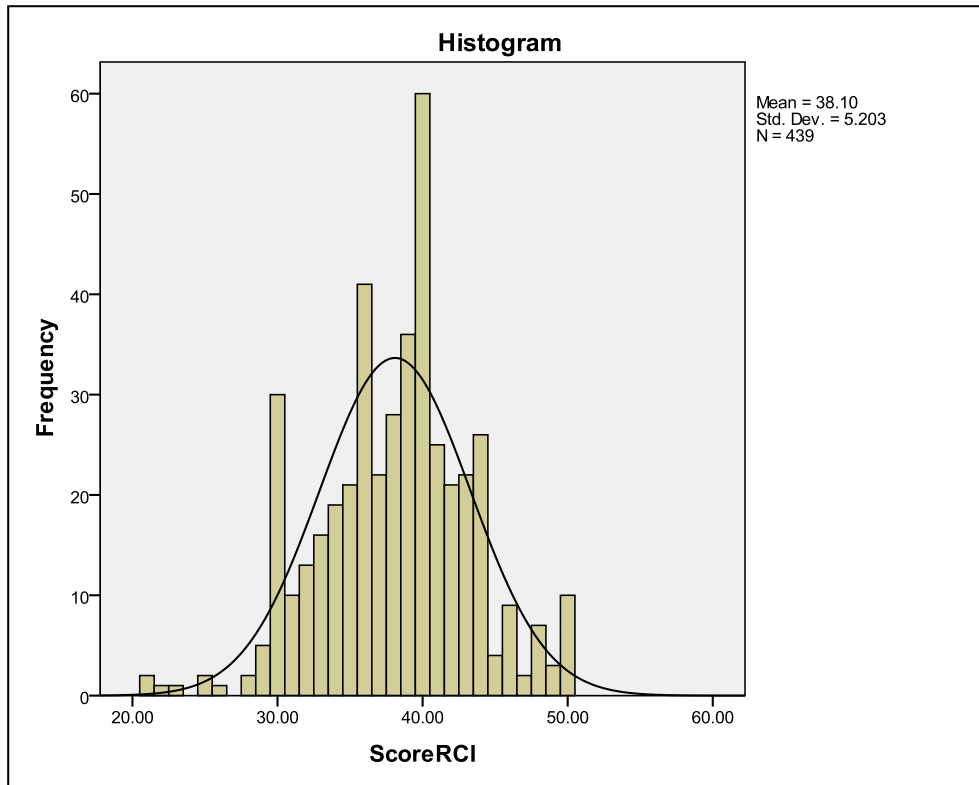


Figure 5.4: Tabulation of Score RCI-10 for EPF Members

Table 5.22: RCI group of EPF members (N=439)

	Low	Medium	High
Frequency	67	311	61
%	15.3	70.8	13.9

Table 5.23 shows the cross-tabulation results of investment choice decision and RCI group. Based on the chi-square result documented at the end of Table 5.23, there was no significant difference in investment choice decision among members with different level of RCI.

Table 5.23: RCIgroup * Investment Choice Decision Crosstabulation

RCI group		Investment Decision		Total
		Maintain	Invest	
Low	Count	36	31	67
	Expected Count	31.1	35.9	67.0
Medium	Count	143	168	311
	Expected Count	144.5	166.5	311.0
High	Count	25	36	61
	Expected Count	28.3	32.7	61.0
Total	Count	204	235	439
	Expected Count	204.0	235.0	439.0

Pearson Chi-Square tests value = 2.188^a, df = 2, Sig = .335, N = 439

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 28.35.

Similar to RCI, a chi-square test was employed to examine whether there are significant differences between Muslim religiosity and investment choice decision. For the purpose of group comparison, the respondents were divided into three groups based on their total scores on Muslim religiosity scales. Following Wan Ahmad et al. (2008), those who scored above 0.5 standard deviation of the mean score were considered as devout, those who scored below 0.5 standard deviation of the mean score were considered as casually religious, and those scored in between were grouped as moderately religious. Figure 5.5 tabulated the score of Muslim religiosity. Table 5.24 shows that 72.8 per cent of Muslim respondents had a medium (moderate) to high (devout) index of religiosity. This proportion is similar to Wan Ahmad et al. (2008) where almost 72 per cent of their respondents had a medium or high index of religiosity.

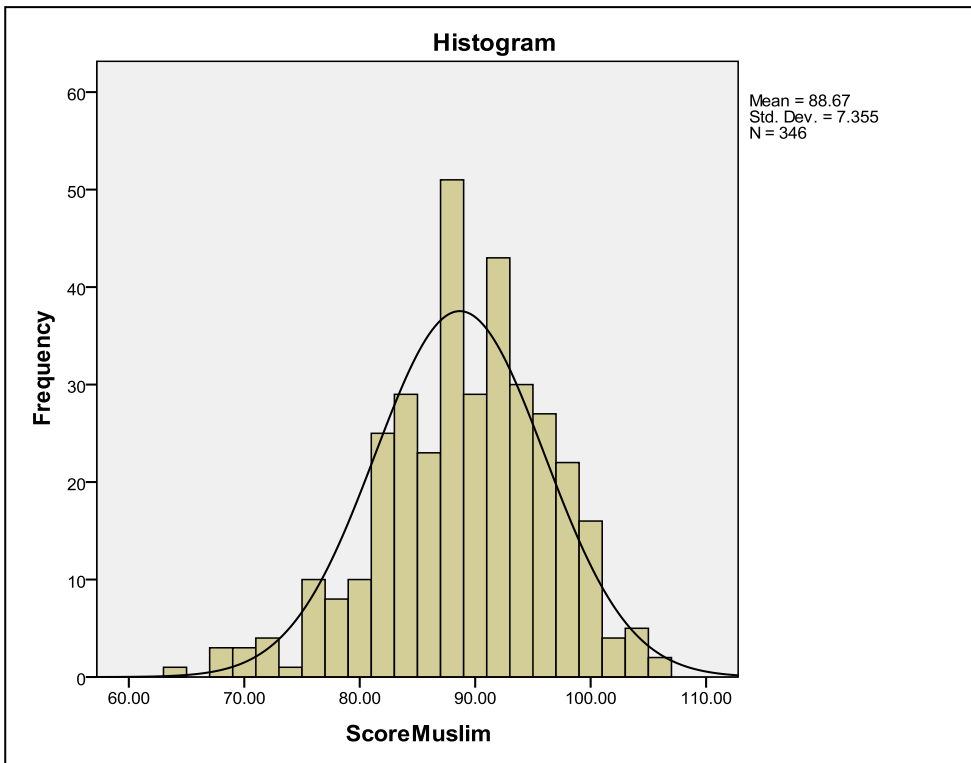


Figure 5.5: Tabulation of Muslim religiosity scores

Table 5.24: Muslim Religiosity Group (N=346)

	Casual	Moderate	Devout
Frequency	94	146	106
%	27.2	42.2	30.6

Table 5.25 showed the cross-tabulation results of investment choice decision and Muslim religiosity group. Compared to RCI, the analysis that follow was based on 346 respondents who were Muslim. According to the chi-square results, there was no significant difference in investment choice decision among members with different level of Muslim religiosity. The value of the chi-square statistic was 0.186 ($P > 0.05$).

Table 5.25: Scoremuslimgroup * Investment Choice Decision Crosstabulation

Muslim group		Investment Decision		Total
		Maintain	Invest	
Casual	Count	49	45	94
	Expected Count	47.3	46.7	94.0
Moderate	Count	72	74	146
	Expected Count	73.4	72.6	146.0
Devout	Count	53	53	106
	Expected Count	53.3	52.7	106.0
Total	Count	174	172	346
	Expected Count	174.0	172.0	346.0

Pearson Chi-Square tests value = .186^a, df = 2, Sig = .911, N = 346

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 46.73.

5.7 Mutual fund selection criteria

So far, the statistical analysis performed was designed to investigate factors that influence individuals' investment choice decision; that is whether to invest part of their retirement savings in the unit trusts. This section reports the results of testing the following hypothesis:

H8: There is no significant difference in the ranking of mutual fund selection criteria as perceived by Malaysian EPF members.

To determine which of the fund selection criteria are perceived as more or less important, a mean analysis was performed to rank all eleven factors. As depicted in Table 5.26, the "fund's commitment to Islamic principles" was perceived as the most important factor in selecting a unit trust fund. This could be due to the fact that the majority (78.6%) of respondents in this study are Muslim. With only a slight mean difference, "past performance of fund" was the second factor considered important. This evidence is in line with Capon et al. (1996) that investors also valued criteria other than solely past performance. It is interesting to note that the type of fund (Government-linked or Bank-owned) and the size of fund are the least important factors considered in

fund selection. This is consistent with the results from Ramasamy and Yeung (2003) that the type of fund did not seem to be an important factor in selecting a mutual fund.

Table 5.26: Ranking importance of fund selection criteria among EPF members

Fund criteria	Mean	SD	Rank
The fund's commitment to Islamic principles	4.2295	.77521	1
Past performance of fund	4.2159	.70548	2
Overall reputation of the fund	4.1318	.68561	3
Experience of fund manager	4.1068	.67830	4
Fund ratings	4.1000	.68435	5
Investment style of fund manager	4.0023	.68001	6
Qualification of fund manager	3.9955	.72065	7
Cost of transaction	3.9795	.72510	8
Government-linked fund	3.9568	.71779	9
Size of fund	3.9568	.68532	10
Bank-owned fund	3.8295	.72416	11

In order to examine whether there are differences in the ranking of fund selection criteria between Muslims and non-Muslims, an independent- samples t-test was performed. Table 5.27 shows the ranking of fund selection criteria among Muslims and non-Muslims.

Table 5.27: Importance of fund selection criteria between Muslims and non-Muslims members

Fund criteria	Muslim (n = 346)		Non-Muslim (n = 93)		t
	Mean	Rank	Mean	Rank	
The fund's commitment to Islamic principles	4.295	1	4.011	8	2.966*
Past performance of fund	4.101	2	4.645	1	-6.941*
Overall reputation of the fund	4.101	2	4.258	2	-1.970
Experience of fund manager	4.093	3	4.172	5	-1.006
Fund ratings	4.058	4	4.258	2	-2.518*
Investment style of fund manager	3.974	5	4.108	6	-1.683
Qualification of fund manager	3.951	6	4.183	4	-2.798*
Cost of transaction	3.913	9	4.215	3	-3.616*
Government-linked fund	3.948	7	4.011	8	-0.869
Size of fund	3.928	8	4.075	7	-1.850*
Bank-owned fund	3.798	10	3.968	9	-2.258*

* Significance at the $p < .05$ level.

As depicted in Table 5.27, “past performance” was considered the most important criteria by non-Muslims. In contrast to what Muslim members perceived as the most important criterion, the “fund’s commitment to Islamic principles” was considered among the least important criteria by non-Muslims. However, both groups of respondents agreed that the “overall reputation of the fund” was quite an important factor in selecting a unit trust fund. Again, the size and type of fund were the least important factors considered by both groups. Overall, the above results indicated that Muslims and non-Muslims differ significantly in their perceived importance of fund selection criteria. Thus, the null hypothesis can be rejected. The t-test highlighted seven out of eleven factors which had significant differences.

5.8 Choice of Fund

Having considered the importance of mutual fund selection criteria previously, this section presents the results of testing the following hypotheses:

H10: There is no significant relationship between religious affiliation and the choice of mutual fund.

H11a: There is no significant difference between individuals’ religiosity and their choice of fund.

H11b: There is no significant difference between Muslims’ religiosity and their choice of fund.

To examine whether there is a relationship between members’ religious affiliation and their choice of mutual fund, the respondents were asked to choose a category of mutual fund that they will invest in. Three options were provided: ‘Conventional Fund’, ‘Islamic Fund’, and ‘Does not matter’. Since both variables under examination were categorical, a Pearson’s chi-square test was conducted. Initially, the type of religious affiliation was cross-tabbed with the category of fund and the results were shown in Table 5.28.

Table 5.28: Type of religious affiliation*Category of fund Crosstabulation

Religious group		Category of fund			Total
		Conventional	Islamic	Does not matter	
Muslim	Count	4	319	23	346
	Expected count	60.7	256.2	29.2	346.0
Buddhism	Count	44	3	9	56
	Expected count	9.8	41.5	4.7	56.0
Hinduism	Count	26	3	3	32
	Expected count	5.6	23.7	2.7	32.0
Christianity	Count	3	0	2	5
	Expected count	.9	3.7	.4	5.0
Total	Count	77	325	37	439
	Expected count	77.0	325.0	37.0	439.0

Pearson Chi-Square tests value = 335.066^a, df = 6, Sig = .000, N = 439

a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is .42.

The Pearson Chi-Square value was highly significant ($p < .001$). However, 41.7% of the cells have an expected count less than 5. This violated one of the assumptions of chi-square test (minimum expected count must be 5). Therefore, to have a more valid result, the type of religious affiliation was reduced to two: Muslims and non-Muslims. The chi-square test was re-run and the results were shown in Table 5.29.

Table 5.29: Religiousgroup* Category of fund Crosstabulation

Religious group		Category of fund			Total
		Conventional	Islamic	Does not matter	
Muslim	Count	4	319	23	346
	Expected count	60.7	256.2	29.2	346.0
Non-Muslim	Count	73	6	14	93
	Expected count	16.3	68.8	7.8	93.0
Total	Count	77	325	37	439
	Expected count	77.0	325.0	37.0	439.0

Pearson Chi-Square tests value = 328.893^a, df = 2, Sig = .000, N = 439

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.84.

The Pearson Chi-Square value was highly significant ($p < .001$). In this case, there were no expected counts less than 5, so the chi-square assumption was not violated. This highly significant result indicated that there was a significant relationship between members' religious affiliation and the category of mutual fund chosen. It reflects the fact that Muslim members chose to invest in an Islamic fund (92.2%), whereas non-Muslim members chose to invest in a Conventional fund (78.5%). Therefore, the null hypothesis can be rejected.

To capture the strength of relationship between religious affiliation and the choice of fund, additional statistical tests were performed (Table 5.30). The Phi and Cramer's V statistics of 0.866 out of a possible maximum value of 1 were highly significant. This represents a high correlation between religious affiliation and the choice of fund, thus confirming the chi-square test findings.

Table 5.30: Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.866	.000
	Cramer's V	.866	.000
N of Valid Cases		439	

To examine whether there are differences between the choice of fund and individuals' level of RCI, a Chi-Square test was performed and the results were tabulated in Table 5.31. The Chi-Square test statistic was highly significant ($p < .001$), indicating differences among the groups. Individuals with lower RCI prefer to invest in both the conventional fund and Islamic fund, whereas individuals with high RCI prefer to invest in Islamic fund. Therefore, Hypothesis H11a was rejected.

Table 5.31: RCI*Category of fund Crosstabulation

Score RCI group		Category of fund			Total
		Conventional	Islamic	Does not matter	
Low	Count	28	28	11	67
	Expected count	11.8	49.6	5.6	67.0
Medium	Count	42	243	26	311
	Expected count	54.5	230.2	26.2	311.0
High	Count	7	54	0	61
	Expected count	10.7	45.2	5.1	61.0

Pearson Chi-Square tests value = 48.694^a, df = 4, Sig = .000, N = 439

a. 0 cells (0.%) have expected count less than 5. The minimum expected count is 5.14

To examine whether there are differences between the choice of fund and Muslims' religiosity level, a Chi-Square test was performed and the results were tabulated in Table 5.32. The Chi-Square test statistic was significant ($p < .05$), indicating differences among the groups. However, 33.3% of cases had expected count less than 5, which violated Chi-square assumptions. As the main focus of the study was to examine whether Muslims' religiosity affect their decision to choose either conventional or Islamic fund, the category of fund choice was reduced to two. The chi-square test was re-run and the results were shown in Table 5.33, which indicated that 'casual' Muslims prefer to invest in conventional fund whereas 'devout' Muslims prefer to invest in Islamic fund. Therefore, Hypothesis H11b was rejected.

Table 5.32: Muslim_Religiosity*Category of fund Crosstabulation

Muslim religiosity		Category of fund			Total
		Conventional	Islamic	Does not matter	
Casual	Count	2	101	14	117
	Expected count	1.4	107.9	7.8	117.0
Medium	Count	2	94	5	101
	Expected count	1.2	93.1	6.7	101.0
Devout	Count	0	124	4	128
	Expected count	1.5	118.0	8.5	128.0
Total	Count	4	319	23	346
	Expected count	4.0	319.0	23.0	346.0

Pearson Chi-Square tests value = 10.938^a, df = 4, Sig = .027, N = 346
a. 3 cells (33.3%) have expected count less than 5. The minimum expected count is 1.17

Table 5.33: Muslim_Religiosity*Category of fund Crosstabulation (reduced table)

Muslim religiosity		Category of fund		Total
		Conventional	Islamic	
Casual	Count	16	101	117
	Expected count	9.1	107.9	117.0
Medium	Count	7	94	101
	Expected count	7.9	93.1	101.0
Devout	Count	4	124	128
	Expected count	10.0	118.0	128.0
Total	Count	27	319	346
	Expected count	27.0	319.0	346.0

Pearson Chi-Square tests value = 9.608^a, df = 2, Sig = .008 N = 346
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.88

Table 5.34 outlined the t-tests results pertaining to views of investment in Islamic funds between Muslims and non-Muslims members. Clearly, Muslims perceived their investment in Islamic funds as to comply with religious beliefs. In contrast, non-Muslims perceived their investment in Islamic funds to be driven by the possibility of earning higher returns than investment in the conventional fund.

Table 5.34: Perception of Investment in Islamic Fund between Muslims and non-Muslims

Statements	Muslim (n = 346)		Non-Muslim (n = 93)		t
	Mean	Rank	Mean	Rank	
I invest in an Islamic fund merely to comply with my religious beliefs.	4.069	1	2.946	4	16.553*
I invest in an Islamic fund because of my ethical beliefs.	4.020	2	3.419	3	6.575*
Islamic fund will more likely to provide a higher return than Conventional fund	3.376	4	3.548	1	-1.946
Islamic fund will more likely to have a lower investment risk than Conventional fund	3.509	3	3.527	2	-.220

*Significance at the $p < .05$ level

5.9 Descriptive Analyses for Consultant Survey

Up to this point, detailed analyses were performed on data gathered from the survey of EPF members. This section presents the analyses for the survey conducted among the unit trust consultants. Basically, the survey served to complement the study by tapping responses from unit trust consultants on the EPF Members Investment Scheme (MIS), as well as on several other aspects identified in the survey of EPF members. The subsections that follow present the descriptive analyses according to the sections structured in the consultants' survey.

5.9.1 Respondents' Profiles – Unit trust consultants

Table 5.35 presents the demographic characteristics of unit trust consultants that participated in the current study. Out of 561 respondents, the sample consisted of slightly more females (55.1%) than males (44.9%). The mean (median) age of respondents was 42.11 (42) with a standard deviation of 9.98 years. Given the minimum age required to become a unit trust consultant is 21, a large number of the respondents were aged between 31 to 40 years (34%) and 41 to 50 years (29.4%). Looking at ethnicity and religious affiliation, it is interesting to note that the majority of respondents were Chinese (67.9%) and practiced Buddhism (49.2%). To be a unit trust consultant, one has to pass the Malaysian Certificate of Education (SPM), which is normally obtained at secondary school at age 17. Thus, the sample is a well educated group with more than 30 percent holding a diploma and 41.5% having completed a University degree. In terms of employment, more than two-thirds (70.5%) of 556 respondents had been in the unit trust industry for 5 years or less. Less than 10% of respondents had spent more than 10 years in the industry. According to the Federation of Investment Managers Malaysia (FIMM), 42,000 UTCs or 58% have been with the FIMM for more than two years.¹⁹ Overall, the sample appeared to be mature, well educated and dedicated to the unit trust industry.

¹⁹ Excerpts of the keynote address delivered at the 9th Annual Convention of UTCs held on 15 October 2009.

Table 5.35: Demographic characteristics of unit trust consultants

Characteristics	Category	Frequency	Percent (%)
Gender	Male	252	44.9
	Female	309	55.1
Age (years)	21 – 30	79	14.1
	31 – 40	191	34.0
	41 – 50	165	29.4
	51 – 60	116	20.7
	61 >	10	1.8
Ethnicity	Malay	142	25.3
	Chinese	381	67.9
	Indian	28	5.0
	Other	10	1.8
Religion affiliation	Islam	145	25.8
	Buddhism	276	49.2
	Hinduism	24	4.3
	Christianity	93	16.6
	None	15	2.7
	Other	8	1.4
Highest education	Secondary	78	13.9
	Diploma	169	30.1
	First degree	233	41.5
	Masters	45	8.0
	Other	36	6.4
Period working as a UTC (years) N= 556	< 5	392	70.5
	6 – 10	110	19.8
	11 – 15	36	6.5
	16 – 20	14	2.5
	21 >	4	0.7

Table 5.36 outlines the number of respondents based on their attached principals/companies. According to FIMM 2009 Annual Report, the total number of unit trust consultants (UTC) stood at 74,640 as at 31 December 2009. Of the total 74,640 UTC registered, 64,755 of them were attached to their principals. Out of this figure, Public Mutual has the largest number of UTC, making it the largest private fund management company in Malaysia. It has 47,862 registered UTC, which is 73.9 per cent of the total UTC. Looking at the data gathered, it appears that 65.2 per cent of total respondents work with Public Mutual.

Table 5.36: Tabulation of UTC according to their principals

Company	Frequency	%	Valid %
CIMB	37	6.6	7.3
Public Mutual	332	59.2	65.2
OSK-OUB	8	1.4	1.6
ING	14	2.5	2.8
EON Bank	1	.2	.2
PNB	10	1.8	2.0
ECM	2	.4	.4
Citibank	1	.2	.2
MAAKL	20	3.6	3.9
ASNB	2	.4	.4
Bank Islam	2	.4	.4
Apex	3	.5	.6
Prudential	13	2.3	2.6
Avenue	2	.4	.4
Pacific	7	1.2	1.4
Hong Leong	15	2.7	2.9
Affin Fund Mngt	13	2.3	2.6
Kuwait Finance	3	.5	.6
Alliance	5	.9	1.0
Kenanga	9	1.6	1.8
AmBank	6	1.1	1.2
ASM Investment	1	.2	.2
MIDF	1	.2	.2
AIA	2	.4	.4
Total	509	90.7	100.0
Missing	52	9.3	
Total	561	100.0	

5.9.2 EPF Members Investment Scheme (MIS)

As presented in Table 5.37, nearly 90 per cent of total participating unit trust consultants had clients under the EPF Members Investment Scheme. According to their view, the clients rated “attractive returns” as an extremely important reason for withdrawing part of their retirement savings to invest in the unit trusts. The next most important reason was “to have better control over the type of investment vehicles” they put their money in, as indicated by the mean analysis in Table 5.38. Religious belief was rated the least important reason for withdrawing savings to invest in the unit trusts (Mean = 3.18, SD = 1.15).

Table 5.37: Statistics on clients under MIS

Question 1	Frequency	Valid Percent
Yes	500	89.1
No	61	10.9
Total	561	100.0

**Question 1 stated: Do you have client(s) under this scheme?*

Table 5.38: Clients’ perceived importance of investing in the unit trusts under the MIS (Based on Consultants’ View)

Possible reasons	Mean score	SD
To get more attractive returns	4.55	.59
To have better control over the type of investment vehicles I want to put my money in	3.89	.81
To change the level of risk	3.54	.87
To invest according to religious principle/guidance	3.18	1.15

**Likert scale: 1 = Not at all important, 5 = Extremely important*

Figure 5.6 outlined the responses related to perceived plan design in terms of level of investment choice. A majority of the respondents (49.7%) thought that an EPF member should be given around 21 percent to 40 percent of the excess of their basic savings to be invested in approved unit trusts. About 23% of respondents thought the member should be given 20 percent of the excess of basic savings, which was then the current limit applicable to members.

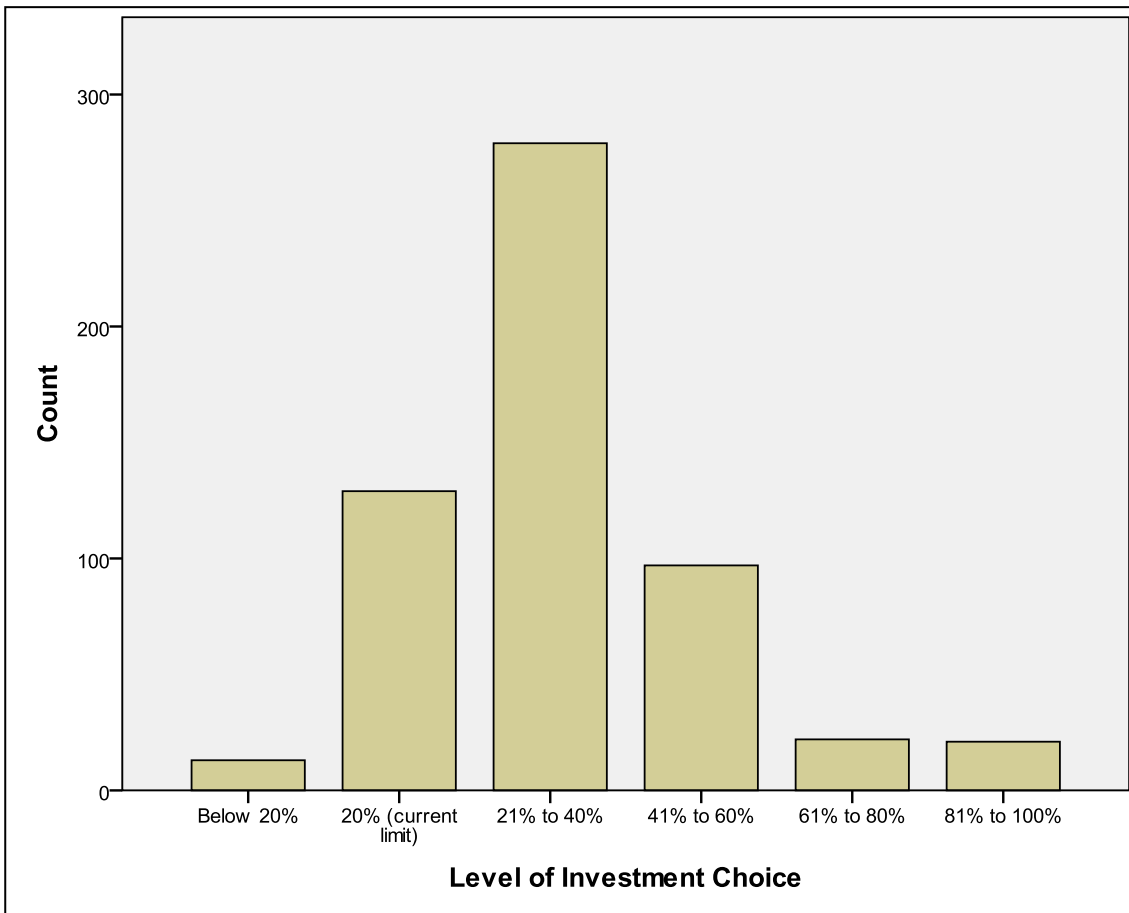


Figure 5.6: Perceived level of investment choice

Apart from the level of investment choice, respondents were also asked their view on the range of unit trust funds approved under the MIS. As per Table 5.39, 59.5% of respondents perceived the range of unit trusts funds available as about right. On the other hand, 27.5% of respondents thought that the range of funds was too narrow. It is interesting to note that nearly 10% of respondents did not know about the range of funds available under the MIS. This may reflect responses from those who were new to the unit trust industry, and in particular, to the scheme.

Table 5.39: Perceived range of unit trust funds

	Frequency	Valid Percent
Too narrow	154	27.5
About right	334	59.5
Too broad	22	3.9
Don't know	51	9.1
Total	561	100.0

5.9.3 Financial Information Sources

Table 5.40 presents the mean analysis of respondents' view of their clients' perceived importance of financial information sources. Unit trust consultants were found to be the first important source of financial information. This was followed by the recommendations of friends/family. Published performance ratings and recommendation of work colleagues were ranked in third and fourth places of importance respectively. The last important source of financial information as perceived by the clients was Internet/online resources.

Table 5.40: Mean analysis for importance of financial information source (N =561)

Sources of Information	Mean	Rank
Recommendation of friends/family	3.95	2
Unit trusts consultants (agent)	4.11	1
Published performance ratings	3.94	3
Recommendation of work colleagues	3.82	4
Internet/online resources	3.27	8
Advertising in the press	3.45	5
Books	3.29	7
Seminars	3.45	5
Catalogues/brochures	3.38	6

Considering the important role played by the unit trust consultant in their clients' investment decision, Table 5.41 presented the descriptive analysis of respondents' views of their clients' perceived importance of attributes related to them. The most important attribute considered was unit trust consultants' experience in the industry. Almost 90% of respondents rated this attribute as "important to extremely important". This was followed by the knowledge of conventional Investment Fund, whereby 86.6% of respondents rated this attribute as "important to extremely important". Consultants' knowledge of Islamic investment fund was the third attribute of importance (51.7% important, 25.7% extremely important). Consultants' religious belief appeared to matter less as 38.5% of respondents thought their clients considered this attribute as: "not at all important to not important".

Table 5.41: Respondents' view on clients' perceived importance of consultants' attributes (N = 561)

UTC Attributes		NAAI	NI	N	I	EI	Mean (SD)
Your experience in unit trust industry	Frequency	-	4	54	312	191	4.23 (.64)
	Percent	-	.7	9.6	55.6	34.0	
Your personal performance track record (e.g.: number of clients, total sales)	Frequency	5	34	168	249	105	3.74 (.86)
	Percent	.9	6.1	29.9	44.4	18.7	
Your knowledge of Conventional Investment Fund	Frequency	4	14	109	290	144	4.17 (.70)
	Percent	.7	2.5	19.4	51.7	25.7	
Your knowledge of Islamic Investment Fund	Frequency	4	14	109	290	144	3.99 (.78)
	Percent	.7	2.5	19.4	51.7	25.7	
Your religious belief	Frequency	94	122	212	95	38	2.75 (1.13)
	Percent	16.8	21.7	37.8	16.9	6.8	

Legend: NAAI= Not at all important, NI= Not important, N= Neutral, I= Important, EI= Extremely important

Likewise, the respondents were also asked to indicate their own perceived level of importance pertaining to the same five attributes. Table 5.42 presents the findings. A similar pattern of responses emerged in comparison with Table 5.41. As per Table 5.42, respondents perceived their experience in the unit trust industry as the most important attribute; 92.4% of them rated this attribute as “Important to extremely important”. The next most important attribute considered was the knowledge of Conventional Investment Fund (53.5% Important, 35.1% extremely important). Consultants’ knowledge of Islamic Investment Fund was the third attribute of importance. Nearly 82% of respondents rated this attribute as “Important to extremely important”. It seems that religious belief was considered less important in dealing with their clients as

statistics showed 36.5% of respondents rated: “Not at all important to not important” for this attribute.

Table 5.42: Respondents’ own perceived importance of consultants’ attributes
(N = 561)

UTC attributes		NAAI	NI	N	I	EI	Mean (SD)
Your experience in unit trust industry	Frequency	1	5	37	301	217	4.30 (.65)
	Percent	.2	.9	6.6	53.7	38.7	
Your personal performance track record (e.g.: number of clients, total sales)	Frequency	7	22	125	283	124	3.88 (.84)
	Percent	1.2	3.9	22.3	50.4	22.1	
Your knowledge of Conventional Investment Fund	Frequency	2	6	56	300	197	4.22 (.69)
	Percent	.4	1.1	10.0	53.5	35.1	
Your knowledge of Islamic Investment Fund	Frequency	4	14	84	288	171	4.08 (.78)
	Percent	.7	2.5	15.0	51.3	30.5	
Your religious belief	Frequency	100	105	195	101	60	2.85 (1.22)
	Percent	17.8	18.7	34.8	18.0	10.7	

Legend: NAAI= Not at all important, NI= Not important, N= Neutral, I= Important, EI= Extremely important

5.9.4 Mutual Fund Selection Criteria

Earlier analysis of mutual fund selection criteria (see section 5.7) revealed that the fund’s commitment to Islamic principles, past performance of fund and overall reputation of fund were the top three criteria considered important by the EPF members. Using the same criteria, the unit trust consultants were approached to indicate their view of their clients’ perceived importance of fund selection criteria. As shown in Table 5.43, unit trust consultants thought that their clients perceived the overall reputation of the

fund as the most important criterion in selecting a fund. Past performance of fund was of secondary importance. It is interesting to note that fund's commitment to Islamic principles was not considered to be important, being ranked eighth out of eleven factors. This could be partly attributable to the majority of respondents being non-Muslim.

Table 5.43: Ranking importance of fund selection criteria: Unit trust consultants' view of their clients' perception (N = 561)

Fund criteria	Mean	SD	Rank
The fund's commitment to Islamic principles	3.54	.95	8
Past performance of fund	4.20	.62	2
Overall reputation of the fund	4.23	.65	1
Experience of fund manager	4.04	.82	4
Fund ratings	4.13	.71	3
Investment style of fund manager	3.77	.81	7
Qualification of fund manager	3.79	.84	6
Cost of transaction	3.81	.75	5
Government-linked fund	3.25	.85	11
Size of fund	3.48	.80	9
Bank-owned fund	3.29	.83	10

Table 5.44 illustrated the respondents' own perceived importance of fund selection criteria. Consultants considered past performance of fund to be the most important selection criteria. With a slight mean difference, overall reputation of fund was the second criterion considered important. Experience of fund manager and fund ratings were both ranked third in importance. Overall, the results were similar to those of Table 5.43.

Table 5.44: Ranking importance of fund selection criteria: Unit trust consultants' view (N = 561)

Fund criteria	Mean	SD	Rank
The fund's commitment to Islamic principles	3.55	.98	9
Past performance of fund	4.20	.64	1
Overall reputation of the fund	4.18	.63	2
Experience of fund manager	4.14	.69	3
Fund ratings	4.14	.74	4
Investment style of fund manager	3.96	.72	5
Qualification of fund manager	3.94	.75	6
Cost of transaction	3.72	.82	7
Government-linked fund	3.30	.86	11
Size of fund	3.66	.75	8
Bank-owned fund	3.33	.88	10

To test the hypothesis whether there are differences in the ranking of fund selection criteria between Muslim and non-Muslim consultants, an independent- samples t-test was performed. The results of the t-test were shown in Table 5.45. As can be seen, 6 out of 11 criteria had significant mean differences, thereby rejecting the hypothesis. Clearly past performance, overall reputation of the fund and fund ratings were the top criteria considered important in both groups of consultants. It appeared that Muslims consultants perceived the fund's commitment to Islamic principles as the most important criteria, however, this factor was considered less important by their non-Muslim counterparts.

Table 5.45 Perceived Importance of fund selection criteria between Muslims and non-Muslims consultants

Fund criteria	Muslim (n = 145)		Non-Muslim (n = 401)		t
	Mean	Rank	Mean	Rank	
Past performance of fund	4.30	2	4.16	1	2.234*
Qualification of fund manager	4.00	7	3.92	6	.879
Experience of fund manager	4.22	5	4.10	4	1.729
Investment style of fund manager	4.01	6	3.94	5	1.092
Size of fund	3.77	9	3.63	8	1.908
Government-linked fund	3.63	10	3.19	11	5.487*
Bank-owned fund	3.58	11	3.26	10	3.858*
Cost of transaction	3.92	8	3.66	7	3.273*
Overall reputation of the fund	4.26	3	4.16	2	1.611
The fund's commitment to Islamic principles	4.31	1	3.31	9	13.557*
Fund ratings	4.26	4	4.11	3	1.977*

* Significance at the $p < .05$ level.

Given the availability of Islamic funds in the Malaysian capital market, the respondents were asked to indicate their level of agreement with four statements related to Islamic funds. The t-test results outlined in Table 5.46 showed that there were significant mean differences in the views on Islamic funds among the Muslim and non-Muslim consultants. It is interesting to note that the perception pertaining to investment in an Islamic fund is more or less was driven by the religious belief, rather than by the performance of investment.

Table 5.46: Perception of Investment in Islamic Fund between Muslims and non-Muslims Consultants

Statements	Muslims (n = 145)		Non-Muslims (n = 401)		t
	Mean	Rank	Mean	Rank	
Investing in an Islamic fund allows complying with religious beliefs.	4.49	1	3.72	1	9.410*
Investing in an Islamic fund allows complying with ethical beliefs.	4.13	2	3.56	2	6.838*
Islamic fund will more likely provide a higher return than Conventional fund	3.50	4	2.79	4	8.819*
Islamic fund will more likely have a lower investment risk than Conventional fund	3.61	3	2.94	3	7.708*

* Significance at the $p < .05$ level.

Several questions were addressed regarding the knowledge of Islamic funds. As Table 5.47 demonstrated, a majority of respondents believed their knowledge of Islamic principles as “important” in recommending an Islamic fund to their client. Most of them acquired the knowledge through in-house training.

Table 5.47: Importance of knowledge of Islamic principles*Knowledge acquirement of Islamic fund Crosstabulation

	Personal religious background	In-house training	Secondary education	Other	Total
Not at all important	0	3	0	0	3
Not important	0	18	1	2	21
Neutral	4	112	7	9	132
Important	26	262	10	20	318
Extremely important	23	58	1	5	87
Total	53	453	19	36	561

As indicated in Table 5.48 more than half (60.2%) of respondents rated as “good” their understanding of the differences between Islamic fund and conventional fund. Less than 3% of respondents rated their understanding of the differences between the two types of fund as “Extremely poor to Poor”. This may result from the effective in-house training

received. As a result, 95% of respondents will recommend Islamic funds to their clients, as presented in Table 5.49.

Table 5.48: Responses to understanding the differences between Islamic fund and conventional fund

	Extremely poor	Poor	Neither Poor nor Good	Good	Extremely Good
Frequency	2	14	154	338	53
%	.4	2.5	27.5	60.2	9.4

Table 5.49: Recommendation of Islamic fund

	Frequency	%
YES	533	95.0
NO	28	5.0

5.9.5 Religious Commitment Inventory (RCI)

Using the instruments developed by Worthington et al. (2003), respondents indicated their level of religiosity on ten 5-point Likert-type items (from 1 = Strongly disagree to 5 = Strongly Agree). The total scores on those 10 items were summed and tabulated in Figure 5.7. For the purpose of group comparison, the respondents were classified into three groups based on the total mean scores. Following Worthington et al. (2003), respondents that scored at least one standard deviation higher than the mean score were classified as highly religious, those who scored one standard deviation below than the mean score were classified as low religiosity, and those scored in between were classified as medium religiosity. Table 5.51 tabulated the results. An additional Chi-square test results in Table 5.52 indicated no significant differences between levels of RCI and recommendation of Islamic fund to potential client.

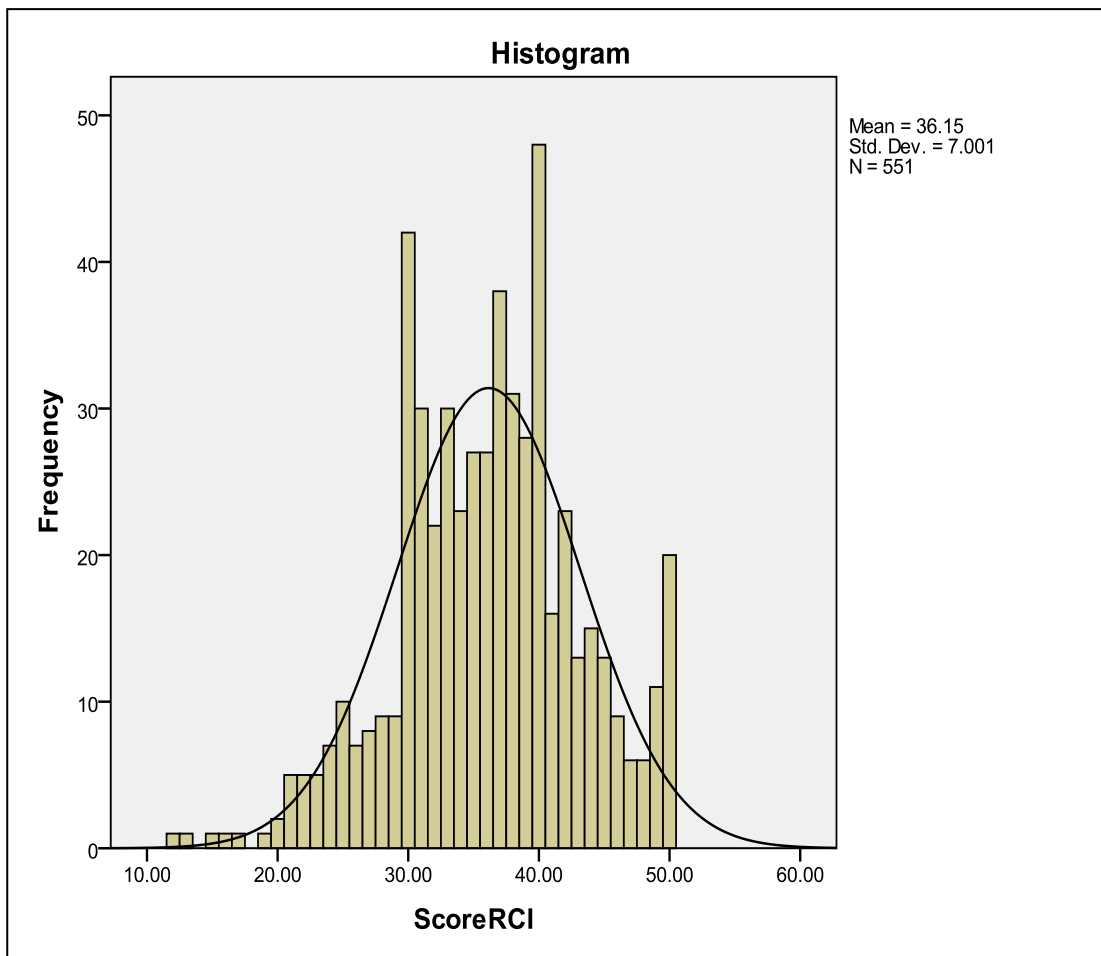


Figure 5.7: Tabulation of RCI -10 scores among UTC

Table 5.50: RCI group (N=551)

	Low	Medium	High
Frequency	73	398	80
%	13.2	72.2	14.5

Count

Table 5.51: RCI group*Recommendation of Islamic fund Crosstabulation

Recommendation of Islamic fund	RCI group			Total
	Low religiosity	Medium religiosity	High religiosity	
Yes	66	380	78	524
No	7	18	2	27
Total	73	398	80	551

Pearson Chi-Square tests value = 4.555^a, df = 2, Sig = .103 N = 551

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.15

5.9.6 Muslim Religiosity

In addition to RCI, Muslim respondents were also asked to complete a section on Muslim religiosity, using the instruments developed by Wan Ahmad et al. (2008). The scores on 22 items were computed and the respondents were divided into three groups based on total mean scores. Following Wan Ahmad et al. (2008), respondents who scored above 0.5 standard deviation of the mean were classified as devout, those who scored below 0.5 standard deviation of the mean were classified as casually religious and those who scored in between were classified as moderately religious. Figure 5.8 tabulated the scores on Muslim religiosity among the Muslim consultants. As Table 5.52 shows, 76.8 per cent of Muslim consultants are regarded as moderately religious and devout. A crosstabulation result in Table 5.53 demonstrated that majority of devout consultants acquired their knowledge of Islamic funds through in-house training.

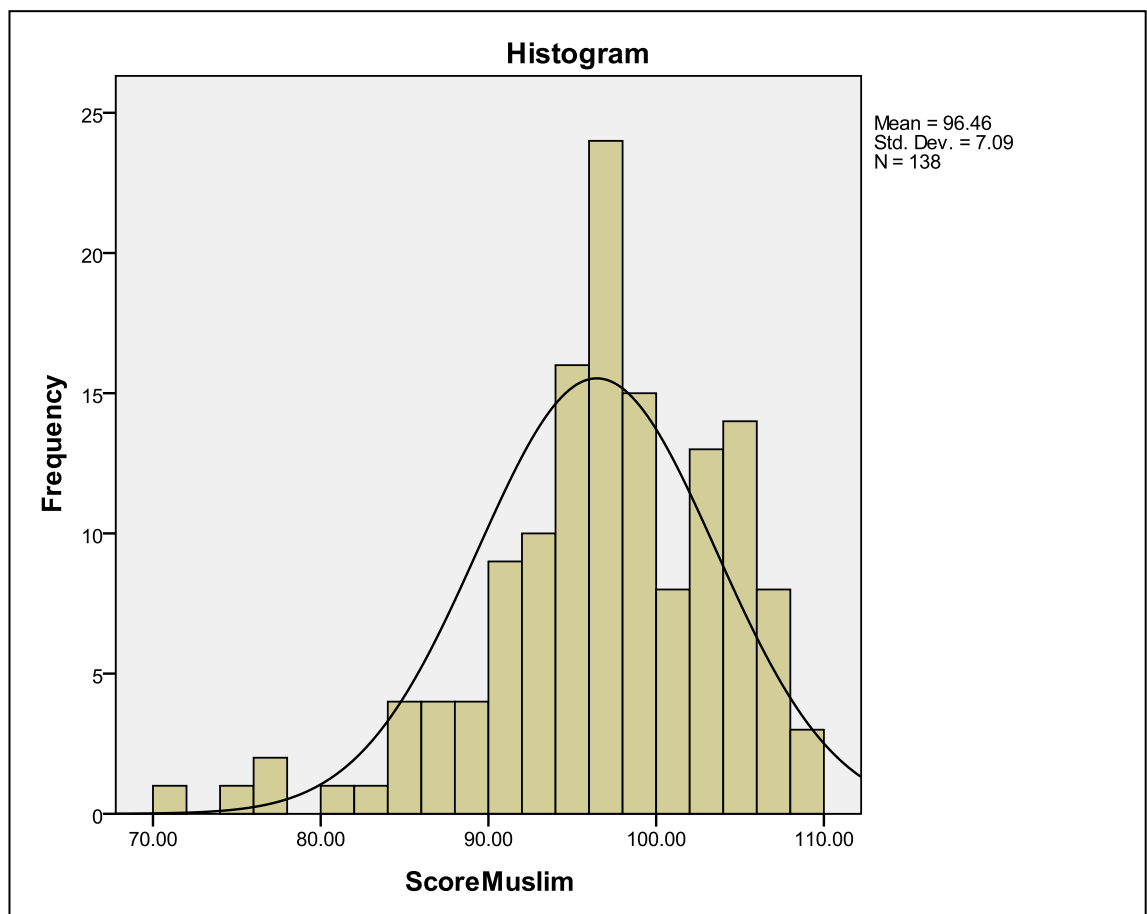


Figure 5.8: Tabulation of Muslim religiosity scores among the Muslims consultants

Table 5.52: Muslim religiosity (N=138)

	Casual	Moderate	Devout
Frequency	32	64	42
Valid %	23.2	46.4	30.4

Table 5.53 Islamic fund knowledge acquirement*Muslim_religiosity crosstabulation

Acquirement of Islamic fund knowledge	Muslim religiosity			Total
	Casual	Moderate	Devout	
Personal religious background	6	17	15	38
In-house training	21	39	24	84
Secondary education	5	8	3	16
Total	32	64	42	138

5.10 Summary

The main objective of this study was to examine individuals' investment choice decisions within the retirement savings context. In particular, the study sought to examine factors that influence the individuals' likelihood to invest part of their retirement savings in the unit trusts. In addition, the study also aimed to identify important factors in mutual fund selection. The effect of religion was also investigated on individuals' choice of fund. The data were gathered through two surveys conducted on 440 EPF members and 561 unit trust consultants. Fourteen hypotheses were developed and tested through binary logistic regression models and non-parametric Chi-Square tests. Table 5.54 displayed the summary of statistical analysis performed with regard to the research hypotheses.

Three hypotheses were tested to address the influence of religion on individuals' investment choice decision. The hypotheses proposed that religious affiliation, religious commitment inventory (RCI) and Muslim religiosity had no association with investment choice decision. Although chi-square test results indicated significant differences in investment choice decision among individuals affiliated with different religions, and bivariate correlation showed a significant positive association between these variables, ceteris paribus, logistic regression results revealed that religious affiliation had no influence on investment choice decision. Likewise, both chi-square and correlation

results showed no significant association between RCI and investment choice decision, as well as between Muslim religiosity and investment choice decision. The findings from logistic regression confirmed that both RCI and Muslim religiosity had no significant influence on individuals' investment choice decision.

One hypothesis was developed to test the effect of financial advisor, financial risk tolerance, and financial knowledge respectively on investment choice decision. Financial advisor was expected to have an effect with investment choice decision, and this (positive) effect was established through significant correlation results and logistic regression results. Meanwhile, financial risk tolerance was expected to have a positive association with investment choice decision. The correlation result was significant and in the expected direction. Further analysis of logistic regression supported this proposition. Financial knowledge was also expected to have a positive association with investment choice decision. The correlation results turned out as expected. However, the logistic regression findings indicated that financial knowledge had no significant influence on investment choice decision, *ceteris paribus*.

Two hypotheses were developed to investigate the effect of perceived plan design on investment choice decision. First, perceived level of investment choice was expected to have an association with investment choice decision. Second, perceived range of unit trust fund was expected to have an association with investment choice decision. The results of correlation analysis were significant, thus supporting these hypotheses. In addition, the findings of logistic regression analysis revealed that perceived plan design had significant and positive influence on investment choice decision.

To address the effect of demographics on investment choice decision, one hypothesis was put forward, such that demographics had associations with investment choice decision. The correlation analysis showed that all demographic variables had significant positive associations, except for gender, which was found to be negatively significant. Logistic regression analyses further revealed that gender, age and marital status were significant. Education, income, EPF membership, total EPF savings and total wealth were found to be not significant.

Turning to mutual fund selection criteria, the independent sample t-test results highlighted 7 out of 11 factors which had significant differences. Therefore, the null hypothesis was rejected, suggesting that Muslims and non-Muslims members differ significantly in their perceived importance of fund selection criteria. Similarly, there were differences in the ranking of fund selection criteria between Muslims and non-Muslims consultants as 6 out of 11 criteria had significant mean differences, thereby rejecting the hypothesis.

With regard to the effect of religious affiliation, RCI, and Muslim religiosity on the individuals' choice of fund, chi-square tests were performed to test these three hypotheses of independence. The results were significant, indicating the importance of religious affiliation, RCI, and Muslim religiosity on individuals' choice of fund. Therefore, the final three hypotheses were rejected.

The following chapter six presents a detailed discussion pertaining to the results of both surveys. In addition, practical implications and limitations of this study as well as recommendations for future research are discussed.

Table 5.54: Results of Hypotheses Tests

Research Hypotheses	Model	Findings	Decision
H1: There is no association between individuals' religious affiliation and their retirement savings investment choice decision.	1	$B_{\text{buddhism}} = -1.515, p = .412$ $B_{\text{hinduism}} = .140, p = .940$ $B_{\text{christianity}} = -2.753, p = .189$	Support H1
H2a: There is no association between individuals' religiosity and their retirement savings investment choice decision.	1	$B_{\text{RCI}} = .018, p = .530$	Support H2a
	2	$B_{\text{RCI}} = .044, p = .216$	
H2b: There is no association between Muslims' religiosity and their retirement savings investment choice decision.	2	$B_{\text{Muslim}} = -.022, p = .287$	Support H2b
H3: There is an association between individuals' perceived importance of financial advisors and their retirement savings investment choice decision.	1	$B_{\text{Advisor}} = .164, p = .001$	Support H3
	2	$B_{\text{Advisor}} = .178, p = .001$	
H4: There is a positive association between individuals' financial risk tolerance and their retirement savings investment choice decision.	1	$B_{\text{Tolerance}} = .132, p = .005$	Support H4
	2	$B_{\text{Tolerance}} = .102, p = .038$	
H5: There is a positive association between individuals' financial knowledge and their retirement savings investment choice decision.	1	$B_{\text{Knowledge}} = .001, p = .991$	Not Support H5
	2	$B_{\text{Knowledge}} = -.023, p = .655$	
H6a: There is an association between the perceived level of investment choice and retirement savings investment choice decision.	1	$B_{\text{level1}} = .470, p = .272$ $B_{\text{level2}} = 1.304, p = .003$ $B_{\text{level3}} = 1.508, p = .027$ $B_{\text{level4}} = -.975, p = .173$	Support H6a
	2	$B_{\text{level1}} = .276, p = .534$ $B_{\text{level2}} = .949, p = .035$ $B_{\text{level3}} = 1.387, p = .057$ $B_{\text{level4}} = -.937, p = .221$	
H6b: There is an association between the perceived range of funds and retirement savings investment choice decision.	1	$B_{\text{range1}} = .818, p = .098$ $B_{\text{range2}} = -.621, p = .346$ $B_{\text{range3}} = -.561, p = .234$	Support H6b
	2	$B_{\text{range1}} = .593, p = .252$ $B_{\text{range2}} = -.423, p = .540$ $B_{\text{range3}} = -.851, p = .084$	

Research Hypotheses	Model	Findings	Decision
H7: Demographic variables such as gender, age, marital status, ethnicity, education level, income, and wealth have effects on individuals' retirement savings investment choice decision.	1	$B_{\text{gender}} = -1.037, p = .000$	Support H7
	2	$B_{\text{gender}} = -1.213, p = .000$	
	1	$B_{\text{age}} = -.027, p = .281$	Support H7
	2	$B_{\text{age}} = -.075, p = .012$	
	1	$B_{\text{marital}} = .733, p = .034$	Support H7
	2	$B_{\text{marital}} = .769, p = .035$	
	1	$B_{\text{chinese}} = 2.159, p = .234$ $B_{\text{indian}} = .123, p = .945$	Not Support H7
	1	$B_{\text{edu1}} = .428, p = .375$ $B_{\text{edu2}} = .392, p = .420$ $B_{\text{edu3}} = -.192, p = .758$ $B_{\text{edu4}} = -1.003, p = .424$	Not Support H7
	2	$B_{\text{edu1}} = .074, p = .887$ $B_{\text{edu2}} = .085, p = .869$ $B_{\text{edu3}} = -.227, p = .736$ $B_{\text{edu4}} = -.958, p = .448$	
	1	$B_{\text{EPF1}} = 1.254, p = .002$ $B_{\text{EPF2}} = .343, p = .516$ $B_{\text{EPF3}} = -.053, p = .948$	Not Support H7
	2	$B_{\text{EPF1}} = .910, p = .029$ $B_{\text{EPF2}} = .037, p = .945$ $B_{\text{EPF3}} = .025, p = .978$	
	1	$B_{\text{income1}} = .018, p = .963$ $B_{\text{income2}} = -1.252, p = .016$ $B_{\text{income3}} = 1.231, p = .154$ $B_{\text{income4}} = .612, p = .455$ $B_{\text{income5}} = 1.665, p = .069$ $B_{\text{income6}} = .148, p = .858$ $B_{\text{income7}} = .698, p = .272$	Not Support H7
	2	$B_{\text{income1}} = -.385, p = .365$ $B_{\text{income2}} = -1.507, p = .010$ $B_{\text{income3}} = 1.219, p = .175$ $B_{\text{income4}} = .850, p = .336$ $B_{\text{income5}} = 1.660, p = .119$ $B_{\text{income6}} = .052, p = .952$ $B_{\text{income7}} = .554, p = .434$	
	1	$B_{\text{savings1}} = .077, p = .855$ $B_{\text{savings2}} = .115, p = .828$ $B_{\text{savings3}} = .808, p = .236$ $B_{\text{savings4}} = -.695, p = .333$ $B_{\text{savings5}} = .758, p = .328$ $B_{\text{savings6}} = -.267, p = .811$ $B_{\text{savings7}} = 1.304, p = .131$	Not Support H7
	2	$B_{\text{savings1}} = .020, p = .964$ $B_{\text{savings2}} = .266, p = .633$ $B_{\text{savings3}} = .846, p = .265$	

Research Hypotheses	Model	Findings	Decision
		$B_{savings4} = -.489, p = .524$ $B_{savings5} = 1.150, p = .172$ $B_{savings6} = .552, p = .640$ $B_{savings7} = 1.761, p = .074$	
	1	$B_{wealth1} = .558, p = .270$ $B_{wealth2} = 1.151, p = .046$ $B_{wealth3} = .032, p = .965$ $B_{wealth4} = .202, p = .757$ $B_{wealth5} = -.698, p = .198$	Not Support H7
	2	$B_{wealth1} = .502, p = .360$ $B_{wealth2} = 1.739, p = .008$ $B_{wealth3} = -.142, p = .858$ $B_{wealth4} = .715, p = .296$ $B_{wealth5} = -.775, p = .210$	
H8: There is no significant difference in the ranking of mutual fund selection criteria as perceived by Malaysian EPF members.	t-test	$ta = -6.941, p = .000$ $tb = -2.798, p = .005$ $tc = -1.006, p = .315$ $td = -1.683, p = .093$ $te = -2.130, p = .034$ $tf = -.869, p = .386$ $tg = -2.258, p = .025$ $th = -3.616, p = .000$ $ti = -1.970, p = .050$ $tj = 2.966, p = .004$ $tk = -2.518, p = .012$	Not Support H8
H9: There is no significant difference in the ranking of mutual fund selection criteria as perceived by Malaysian unit trust consultants.	t-test	$ta = 2.234, p = .026$ $tb = .879, p = .380$ $tc = 1.729, p = .084$ $td = 1.092, p = .275$ $te = 1.908, p = .057$ $tf = 5.487, p = .000$ $tg = 3.858, p = .000$ $th = 3.273, p = .001$ $ti = 1.611, p = .108$ $tj = 13.557, p = .000$ $tk = 1.977, p = .048$	Not Support H9
H10: There is no significant relationship between religious affiliation and the choice of mutual fund.	Chi-square	Pearson Chi-Square tests value = 328.893, df = 2, Sig = .000, N = 439	Not Support H10
H11a: There is no significant difference between individuals' religiosity and their choice of fund.	Chi-square	Pearson Chi-Square tests value = 32.792, df = 4, Sig = .000, N = 439	Not Support H11a
H11b: There is no significant difference between Muslims' religiosity and their choice of fund.	Chi-square	Pearson Chi-Square tests value = 9.608, df = 2, Sig = .008 N = 346	Not Support H11b

CHAPTER SIX

DISCUSSION AND CONCLUSIONS

6.1 Introduction

The preceding chapter presented the results of descriptive analyses and the hypotheses testing. This final chapter provides a more detailed discussion of the findings and provides further insight into the factors that influence individuals' investment choice decisions within the context of retirement savings in Malaysia.

The chapter is organised as follows. Section 6.2 discusses the research findings. Section 6.3 presents the implications of the study. Section 6.4 describes the limitations of the study. Section 6.5 offers suggestions for future research. Section 6.6 ends the chapter with an overview of the study.

6.2 Discussion of Research Findings

6.2.1 Religion and Investment Choice Decision (H1, H2a, H2b)

Religion has been inferred as a potential determinant of savings and investment behaviour (Keister, 2003) because of the effect it has on the values, habits and attitudes of an individual (Delener, 1994). The current study explored the role of religion in individuals' retirement savings investment choice decisions. As such, a 'religion' construct was operationalised using religious affiliation and religiosity. The study hypothesised that there was no association between religious affiliation and the investment choice decision. The correlation analysis findings indicated a statistically significant, but weak relationship between the two variables ($r = .14$). The logistic regression results suggested that the association was not significant, thereby supporting the hypothesis. On the other hand, the Chi-square test results indicated significant differences in investment choice decisions between Muslim and non-Muslim respondents. There was an equal proportion of Muslims maintaining their savings in the default fund as well as investing part of their savings in a unit trust fund. In contrast, a majority of non-Muslims preferred to invest part of their savings in the unit trusts. In

Malaysia, Muslim is regarded as the majority religious group, while Buddhism, Hinduism and Christianity are regarded as the minority religious group. From the consumer behaviour point of view, the findings supported the results of Bailey and Sood (1993), suggesting that there were statistically significant differences in the consumer behaviour of the US minority religious groups (i.e. Buddhism, Hinduism and Islam) and the majority religious groups (i.e. Judaism, Catholic and Protestant). In a similar location to the present study, these findings supported those of Mokhlis (2009) who found an overall significant difference among Malaysian consumers affiliated to Islam, Buddhism, Hinduism and Christianity in the following aspects of consumer behaviour: lifestyle, perceived importance of store attributes and preference for store format. It is important to note that there has been no study conducted to examine religious affiliation and investment choice decisions within the retirement savings context; therefore these findings provide the first evidence to the background literature in retirement savings, particularly the investment choice decision.

The next hypothesis tested the influence of religiosity on the investment choice decision. Religiosity was viewed from a multidimensional approach and accordingly two sets of instruments were used: the Religious Commitment Inventory (RCI-10) developed by Worthington et al. (2003) and Muslim Religiosity developed by Wan Ahmad et al. (2008). The study hypothesised that there was no association between RCI and the investment choice decision. In addition, the study also hypothesised that there was no association between Muslim religiosity and investment choice decision. Although the logistic regression results demonstrated the expected positive relationship between religiosity and the likelihood of investing part of retirement savings in the unit trusts, the results however, were not significant, thereby supporting the hypotheses. In terms of significant differences, the Chi-square tests results indicated no significant differences in investment choice decision among individuals with different levels of RCI and Muslim religiosity respectively. These results suggest that religiosity does not significantly influence individuals' investment choice decisions, particularly when it comes to investing part of their retirement savings in a unit trust. This is consistent with earlier descriptive analysis as presented in Table 5.7(Chapter 5) whereby the most important reason for investing part of retirement savings in a unit trust was to achieve more attractive returns. Religious principle/guidance was ranked as the third reason being considered in relative importance. The results of this study support Vyvyan, Ng

and Brimble (2005) who demonstrated that financial performance was the most influential factor when it comes to investment decision making. They also found that religious beliefs do not influence the investment decision-making process, particularly with regard to socially responsible investing (SRI).

6.2.2 Financial Advisor and Investment Choice Decision (H3)

The study hypothesised that there is an association between individuals' perceived importance of financial advisors and their retirement savings investment choice decision. In line with the studies by Capon et al. (1996) and Alexander et al. (1998), descriptive results indicated that unit trust consultants were ranked as the second most important information source, after the recommendations of friends/family. The logistic regression results found a significant association between individuals' perceived importance of financial advisors and their retirement savings investment choice decision. This evidence suggests that individuals who placed higher perception towards unit trust consultants were more likely to invest part of their retirement savings in unit trusts.

6.2.3 Financial Risk Tolerance and Investment Choice Decision (H4)

It is hypothesised that there is a positive association between individuals' financial risk tolerance and their retirement savings investment choice decision. As predicted, the results of the logistic regression showed the significant association between the two variables. This finding is consistent with previous studies that financial risk tolerance was related to saving for retirement (Jacobs-Lawson & Hershey, 2005), and to the level of retirement savings (John E. Grable & Joo, 1997; Yuh & DeVaney, 1996). It implies that individuals who are willing to assume higher risk are more likely to invest part of their retirement savings in the unit trusts. On the flip side, Croy, Gerrans, and Speelman (2010) found that financial risk tolerance had little effect on intentions to save for retirement.

6.2.4 Financial Knowledge and Investment Choice Decision (H5)

A number of studies have examined, and consistently provided evidence, that financial knowledge is positively related to saving behaviours (Agnew & Szykman, 2005; John E. Grable & Lytton, 1997), and financial saving practices (Al-Tamimi & Kalli, 2009; Hershey & Mowen, 2000; Jacobs-Lawson & Hershey, 2005; Yuh & DeVaney, 1996). The logistic regression results presented mixed evidence with regard to the effect of financial knowledge on investment choice decision. In the first model, the direction of the relationship found in the current study is consistent with the above evidence but was not found to be significant. The second model suggested a reverse relationship, but also was not significant. This finding supports Fry, Heaney and McKeown (2007) who noted that Australian individuals who were more knowledgeable of their existing superannuation, were more likely to remain with the default fund. Their findings support the concept of inertia. However, it is possible that the non-significant findings regarding financial knowledge may be due to measurement issues. In the present study, perceptions of financial knowledge were assessed (rather than actual financial knowledge), which may have led individuals to overestimate or underestimate how much they know about retirement planning. The use of objective measures such as knowledge tests or a quiz could provide different outcomes. Hence, the insignificant results from the study seem to suggest that financial knowledge does not increase the individuals' likelihood to invest part of their retirement savings in the unit trust.

6.2.5 Perceived Plan Design and Investment Choice Decision (H6a, H6b)

The current study focused on two aspects of plan design that are embedded within the EPF Members Investment Scheme: the level of investment choice, and the range of approved unit trust funds. The results of logistic regression demonstrated that both the perceived level of investment choice and perceived range of fund were significantly associated with individuals' investment choice decisions, thus supporting the hypotheses. In terms of perceived level of investment choice, those who perceived that they should be given a higher level of investment choice (between 20% and 60% of excess savings in Account 1) were more likely to invest part of their retirement savings in the unit trusts. Similarly, those who perceived the range of approved unit trust funds as 'about right' were more likely to invest in the unit trusts. In contrast, those who did

not know the range of approved funds were more likely to resort to default fund. The latter finding seems to support those of Agnew and Szykman (2005) who noted that participants experienced ‘information overload’ and were more likely to stay with the default as they ‘choose not to choose’.

6.2.6 Demographics and Investment Choice Decision (H7)

This study examined the effect of the following demographic variables on the investment choice decision: gender, age, marital status, ethnicity, education level, EPF membership, total EPF savings, income and total wealth. A review of previous studies on retirement savings decisions suggest that these variables have provided consistently mixed results when being tested. The results of logistic regression revealed that gender, age, and marital status were significant in predicting individuals’ likelihood to invest part of their retirement savings in unit trusts. Ethnicity, education level, EPF membership, total EPF savings, income and total wealth were all found to be insignificant in determining individuals’ likelihood to invest part of their retirement savings in the unit trusts.

With regard to gender, the study showed that women were less likely than men to invest part of their retirement savings in the unit trusts. This evidence is consistent with other studies (Bajtelsmit et al., 1999; Bernasek & Shwiff, 2001; G. L. Clark & Strauss, 2008; Koh et al., 2008; Speelman et al., 2007).

With regard to age, the study found that the higher the age of an individual, the less likely he/she will invest part of retirement savings in the unit trusts. One possible explanation for this finding is that a younger investor can use their salary to cover potential losses from risky investments, while an older investor cannot (Jagannathan & Kocherlakota, 1996). The life-cycle hypothesis developed by Modigliani (1976) suggests that wealth tends to be accumulated at a younger age. The findings of the present study are supported by other studies (Engstrom & Westerberg, 2003).

With regard to marital status, the study found that married individuals were more likely to invest part of their retirement savings in the unit trusts. One possible explanation for

this finding is taken from Clark and Strauss (2008) who conjectured that individuals whose spouses also had pension entitlements tended to be less risk averse.

6.2.7 Mutual fund selection criteria – Members’ perspective (H8)

This study hypothesised that there is no significant difference in the ranking of mutual fund selection criteria among the EPF members. The t-test results indicated significant differences in the ranking of seven out of eleven fund criteria among Muslim and non-Muslim members, therefore rejecting the hypothesis. This study supports the evidence from Ramasamy and Yeung (2003) and Capon et al. (1994) that past performance was considered amongst the most important criteria in fund selection. On the other hand, as Capon et al. (1996) argued that attributes other than risk and return are also valued by investors, this study supports their findings by showing that a fund’s commitment to Islamic principles was the most important criteria considered by Muslim EPF members.

6.2.8 Mutual fund selection criteria – Advisors’ perspective (H9)

This study hypothesised that there is no significant difference in the ranking of mutual fund selection criteria among the unit trust consultants. The t-test results indicated significant differences in the ranking of six out of eleven fund criteria among Muslim and non-Muslim consultants, thereby rejecting the hypothesis. This study supports the evidence from Ramasamy and Yeung (2003) and Capon et al. (1994) that past performance was considered amongst the most important criteria in fund selection. On the other hand, as Capon et al. (1996) argued that attributes other than risk and return are also valued by investors, this study supports their findings by showing that consultants are also considered the overall reputation of the fund, and the fund ratings as important criteria. The evidence presented in the consultants’ survey seem to corroborate with the findings in the members’ survey that past performance is still considered as main choice criteria in mutual fund selection.

6.2.9 Religion and Choice of Fund (H10, H11a, H11b)

Earlier discussion has focussed on the role of religion on individuals’ decision to invest part of their retirement savings in the unit trusts. This study further determined the role

of religion on individuals' choice of unit trust fund. Religious affiliation was found to be significantly related to the choice of fund, thereby rejecting the hypothesis. The findings showed that Muslims members chose to invest in an Islamic fund, whereas non-Muslim members chose to invest in a conventional fund. Turning to the religiosity effect on the choice of fund, the chi-square test results revealed significant differences in the choice of fund among individuals with different levels of religiosity. Individuals with lower RCI prefer to invest in conventional funds whereas individuals with high RCI prefer to invest in Islamic funds. The results among Muslims individuals appear to be the same: Casual Muslims prefer to invest in conventional funds whereas devout Muslims prefer to invest in an Islamic fund. These findings seem to suggest that religion has an influence on individuals' choice of unit trust fund.

6.3 Implications of the Study

This study provides several theoretical and practical implications:

6.3.1 Theoretical implications

- (i) Research focusing on an individual's choice within the retirement savings context is relatively sparse in emerging and newly industrialised countries (NICs), since most of the relevant literature is derived from developed countries. Therefore, this study provides the first evidence on the factors that influence individuals' retirement savings behaviour in Malaysia. Looking from a cultural perspective, this study adds to the existing literature on retirement savings by exploring the role of religious affiliation and religiosity on the individuals' likelihood to invest part of their retirement savings in the unit trusts.
- (ii) By extending the work of Ramasamy and Yeung (2003), this study adds new evidence to existing behavioural research on mutual fund selection criteria by looking at the perspectives of both the clients, and the unit trust consultants.

6.3.2 Practical implications

- (i) The findings from this study provide useful information to the EPF as the policy maker, on the retirement savings behaviour of its members. A meeting with the officers from the EPF suggests that there is no comparable study currently being undertaken with regard to the Members Investment Scheme, therefore, this study provides initial feedback from members, as well as from the unit trust consultants, on several aspects related to the scheme. The findings from the study showed that perceived plan design is significantly related to individuals' likelihood to invest part of their retirement savings in the unit trusts. It is worth mentioning that the features embedded within the EPF Members Investment Scheme are unique, in that they only permit members to invest 20 per cent of the excess of basic savings in the approved unit trusts. This shows the initial effort of the EPF in allowing its members to exercise their investment choice, but at the same time, still maintaining the other 80 per cent of their savings in the default fund. The significant findings of this study seem to suggest that this policy is viewed as helpful towards enhancing an individuals' retirement pot. Nevertheless, the extent to which individuals have accumulated better savings is beyond the scope of this study.
- (ii) Given the higher perceived importance placed on financial advisors (i.e. the unit trust consultants) on individuals' investment choice decisions, it is important for fund management companies to ensure that their unit trust consultants are equipped with both 'Conventional' investment knowledge and 'Islamic' investment principles. A regular in-house training workshop may enhance consultants' knowledge about a particular fund and in return they will be able to help investors making more informed investment decisions.
- (iii) The findings of this study can also help fund management companies to better promote their funds to the most appropriate investors. For example, the findings indicated that past performance was still considered the main criterion in selecting a fund among non-Muslim investors. Therefore, fund

management companies that offer an Islamic fund with attractive past returns may also reach this group of investors as well as prospective Muslim investors.

6.4 Limitations of the Study

As with any research, some potential limitations should be considered when interpreting the results from this study:

- (i) The use of a self-reported survey in this study could have introduced bias to the data. Personal perceptions may not reflect the actual decisions made. However, considering the confidentiality issues raised by the Employees Provident Fund (EPF) and Unit Trust Management Companies (UTMCs) in disclosing actual members' choice of investment, this study considers the survey as the most appropriate, and only realistic, method, to gather reported behaviour, such as members' attitudes towards their retirement savings.
- (ii) The sample in this study consisted of employees working in four private universities and four listed firms operating in the oil and gas industry, telecommunications, and commercial business respectively. For the advisors' survey, the sample consists of participants at an annual convention for unit trust consultants. It is not possible to demonstrate that these respondents are representative or typical of the population as a whole; therefore caution must be exercised in generalizing conclusions beyond the current population. Nevertheless, the large sample size insulates the present study from issues of non-representativeness to a certain degree.
- (iii) Although validated in earlier studies, the religiosity items used in this study could suffer from social desirability biases due to the sensitive nature of the subject matter. Khraim, Mohamad, and Jantan (1999) highlighted that it is difficult to ask questions that some respondents (particularly religious Muslims) consider as sensitive matters, such as their religious behaviour.

- (iv) Apart from religiosity items, several other variables investigated in this study utilised subjective measurement, rather than objective measure. For example, although the perceptual knowledge measure may lead to certain biases, they are more efficient and easier to administer (Jacobs-Lawson & Hershey, 2005), and in the present study, this type of measurement is chosen because of the length of the questionnaire and the nature of this study is exploratory.

6.5 Suggestions for Future Research

In the light of the evidence presented in this study, there are several avenues for future research:

- (i) The present study applied logistic regression analysis to predict individual retirement savings choice decision. While the method used for testing the hypotheses is technically sound, it may not be the only way with which to test the model. Future research may consider the potential advantages of Structural Equation Modelling (SEM), which allows the inclusion of interrelated dependence relationships.
- (ii) It is interesting to note that financial knowledge, education, and income, which have been found to be significant in previous studies, were not found to be significant determinants of individuals' likelihood to invest part of their retirement savings in the unit trusts. Further research in this field, using a sample potentially more representative of the working population, may confirm whether these results are valid.

6.6 Summary

This study investigates the factors that influence individual retirement savings behaviour in Malaysia. Two behaviours of interest are the decision to invest part of retirement savings in the unit trusts, and the decision to choose a unit trust fund. Mutual fund selection criteria are also considered. Two surveys were conducted among a sample of 440 working individuals in the private firms and universities, and among 561 unit trust consultants.

The results of logistic regression indicated the perceived importance of financial advisor, perceived financial risk tolerance, perceived plan design, age, gender, and marital status as the significant predictors of individuals' likelihood to invest part of their retirement savings in the unit trusts. Perceived financial knowledge and religion had little effect on an individuals' decision to invest the retirement savings in the unit trust. On the other hand, the findings showed that religion can have a significant impact on individuals' choice of fund. As far as mutual fund selection is concerned, past performance was considered as the most important criterion by both the members and the consultants. Consistent with the notion that attributes other than risk and return are of consideration in selecting a fund, the findings highlighted the fund's commitment to Islamic principles as another important criterion considered by Muslim members.

The findings of this study provide useful information to the EPF as the policy maker and to the fund management companies in their efforts to enhance individuals' retirement savings. Future research may be warranted by incorporating other factors that affect individuals' investment choice decisions within the domain of retirement savings.

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APPENDICES

Appendix 1

Appendix 1.1: Required Basic Savings of EPF Member Account

Age (Years)	Basic Savings (RM)	Age (Years)	Basic Saving (RM)
18	1,000	37	34,000
19	2,000	38	37,000
20	3,000	39	41,000
21	4,000	40	44,000
22	5,000	41	48,000
23	7,000	42	51,000
24	8,000	43	55,000
25	9,000	44	59,000
26	11,000	45	64,000
27	12,000	46	68,000
28	14,000	47	73,000
29	16,000	48	78,000
30	18,000	49	84,000
31	20,000	50	90,000
32	22,000	51	96,000
33	24,000	52	102,000
34	26,000	53	109,000
35	29,000	54	116,000
36	32,000	55	120,000

Appendix 1.2 Examples to Compute the Allowable Investment Amount

Member	Age	Savings In Account 1 (RM)	Basic Savings (RM)	Computation: Savings In Account 1 - Basic Savings x 20%	Member's Eligibility
A	22	4,000	5,000	-	Not qualified as the savings is lesser than the basic savings required.
B	22	8,000	5,000	$(8,000 - 5,000) \times 20\% = \text{RM}600$	Not qualified as the savings is lesser than required minimum investment amount of RM 1,000.
C	25	20,000	9,000	$(20,000 - 9,000) \times 20\% = \text{RM}2,200$	Qualified as the savings is more than the basic savings and minimum limit.

Source: EPF Website

Appendix 2

Information Letter and Member Survey

EPF Members' Survey

Information Letter

Dear EPF member,

I am conducting research on retirement savings behaviour in Malaysia, as part of my Doctor of Philosophy (Business) degree at Edith Cowan University, Perth, Western Australia. This research aims to examine factors that influence members in their investment choice decision. In particular, this study will focus on the Members Investment Scheme (**MIS**), initiated by the Employees Provident Fund (**EPF**). Apart from the MIS, this study will also explore members' opinion towards other aspects of retirement savings. This area of research is important in terms of welfare of people in retirement and of growing concern for most governments worldwide.

I am inviting you to participate and share your opinion with respect to this research. I would be very grateful if you could spare 15-20 minutes of your time to complete the questionnaire enclosed. Please read the instructions for each section carefully. It is very important that all questions are completed.

This is an anonymous questionnaire. Participation in this study is entirely voluntary. All responses are completely confidential and will only be used for the purposes of this study. If the information you provide is published, you will not be identified in any written work as presentation of the data will be aggregated. The rationale and design of this study has satisfied the strict guidelines laid down by the Ethics Committee of ECU.

If you have any questions regarding any aspects of this research, please contact me:

Nurasyikin Jamaludin

PhD student,

Faculty of Business and Law, or

Edith Cowan University

Joondalup, WA 6027

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Email: m.clarkmurphy@ecu.edu.au

If you have any concerns or complaints about this study and wish to speak to an independent person, you may contact:

Research Ethics Officer,

Edith Cowan University,

Phone: +61 (0)8 6304 2170

Email: research.ethics@ecu.edu.au

Please return the completed questionnaire at your earliest convenience to:

The survey close date is Wednesday, 10th November 2010.

Once again, thank you very much for your kind participation.

SURVEY ON: RETIREMENT SAVINGS BEHAVIOUR

SECTION A: DEMOGRAPHIC AND SOCIO-ECONOMIC BACKGROUND

Please tell us about yourself by **ticking one** answer for each question. Please complete all questions – **this is very important for the research.**

1. Gender: Male Female
2. Age: _____ years
3. Marital Status: Single Married
 Other (please specify: _____)
4. Ethnicity: Malay Chinese Indian
 Other (please specify: _____)
5. Religion affiliation: Islam Buddhism Hinduism
 Christianity None
 Other (please specify: _____)
6. Highest Education Achievement:
 Secondary school Diploma First Degree
 Masters Degree PhD Other (please specify:)
7. Your before-tax monthly income (for single); your combined incomes (for married):
- | | |
|---|--|
| <input type="checkbox"/> Less than or equal to RM4, 000 | <input type="checkbox"/> Between RM4,001 and RM5,000 |
| <input type="checkbox"/> Between RM5,001 and RM6,000 | <input type="checkbox"/> Between RM6,001 and RM7,000 |
| <input type="checkbox"/> Between RM7,001 and RM8,000 | <input type="checkbox"/> Between RM8,001 and RM9,000 |
| <input type="checkbox"/> Between RM9,001 and RM10,000 | <input type="checkbox"/> RM10,001 and above |
8. How long have you been an Employees Provident Fund (EPF) member?
 Less than 5 years 5-10 years 11-20 years More than 20 years
9. Your total savings in the EPF as at 31 December 2009.
- | | |
|--|--|
| <input type="checkbox"/> Less than or equal to RM20, 000 | <input type="checkbox"/> Between RM20,001 and RM40,000 |
| <input type="checkbox"/> Between RM40,001 and RM60,000 | <input type="checkbox"/> Between RM60,001 and RM80,000 |
| <input type="checkbox"/> Between RM80,001 and RM100,000 | <input type="checkbox"/> Between RM100,001 and RM120,000 |
| <input type="checkbox"/> Between RM120,001 and RM140,000 | <input type="checkbox"/> RM140,001 and above |
10. Your total financial wealth outside EPF for 2009. (e.g: bank deposits, shares, bonds, investment-linked insurance)
- | | |
|--|--|
| <input type="checkbox"/> Less than or equal to RM10, 000 | <input type="checkbox"/> Between RM10,001 and RM20,000 |
| <input type="checkbox"/> Between RM20,001 and RM30,000 | <input type="checkbox"/> Between RM30,001 and RM40,000 |
| <input type="checkbox"/> Between RM40,001 and RM50,000 | <input type="checkbox"/> RM50,001 and above |

SECTION B: RETIREMENT SAVINGS BEHAVIOUR

This section seeks your opinion about retirement savings in the EPF. Please circle/tick one answer for each question.

1. Until December 2010, your contribution towards EPF is 8% of your monthly salary and your employer contribution is 12% of your monthly salary, making total contribution of 20%. Given this level of savings for retirement, do you think: **(Please circle)**

a.	You are saving too much
b.	You are saving the correct amount
c.	You are saving too little.
d.	You don't know if you are saving enough

1. How would you perceive the level of investment risk in the overall EPF?
(Please circle)

Not at all risky	Not risky	Neutral	Risky	Extremely risky
1	2	3	4	5

3. Over the past three years, the EPF has provided the following returns:

Year	2007	2008	2009
Dividend	5.80%	4.50%	5.65%

Please indicate your agreement/disagreement to the following statement:
(Please circle)

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
For the past three years (2007-2009), I am satisfied with the dividends provided by the EPF.	1	2	3	4	5

The next three questions relate to your knowledge of the EPF investment philosophy/policy.

4. First, how would you rate your knowledge of EPF's investment philosophy/policy?
(Please circle)

Extremely Poor	Poor	Neither Poor nor Good	Good	Extremely Good
1	2	3	4	5

5. Which of the following does the EPF consider when making investments?
(Please tick)

	Yes	No	Don't Know
a. Exposure to domestic market risks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Exposure to international market risks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Syariah principles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Environmental issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Please indicate your level of agreement/disagreement to the following statement about EPF's investment philosophy/policy: **(Please circle)**

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree	Don't Know
a. EPF is willing to invest its assets in companies that deal with riba-based banks	1	2	3	4	5	
b. EPF is willing to invest its assets in companies that are involved in alcohol production	1	2	3	4	5	
c. EPF is willing to invest its assets in companies that support the environment	1	2	3	4	5	
d. EPF is willing to invest its assets in companies that engage in tobacco production or distribution	1	2	3	4	5	
e. EPF is transparent in reporting its investment performance	1	2	3	4	5	

The Employees Provident Fund (EPF) introduced "Basic Savings" in 2008. Basic Savings is an amount of savings to be put aside in Account 1 at various age levels to enable members to accumulate a minimum savings of RM120,000 upon reaching retirement age of 55. Under the Members Investment Scheme (MIS), the EPF allows its members to withdraw up to 20% of the amount in excess of the "Basic Savings" for investment in unit trusts through approved external fund managers. The minimum initial investment for each fund is RM1,000.

7. Were you previously aware of the Members Investment Scheme (MIS)? **(Please tick)**

Yes (please proceed to Question 8 and 9) No (please proceed to Question 9)

8. How did you first become aware of this scheme? Please tick **only one** option.

- Through EPF
 Through unit trust consultant
 Through family/friends
 Other (please specify: _____)

9. Given the rules above, are you currently eligible to withdraw part of your savings under the MIS? Please tick **only one** option

Yes (please go to Question 10) No (please go to Question 13)
 Don't Know (please go to Question 13)

10. Have you been investing part of your savings under MIS in external unit trusts? Please tick **only one** option

Yes. I have invested RM_____ in external unit trusts (please go to Q.11, 12 and 13)
 No (please go to Question 13)

11. How important were each of the following reasons for withdrawing savings from the EPF to invest in unit trusts? **(Please circle)**

	Not at all important	Not important	Neutral	Important	Extremely important
a. To get more attractive returns	1	2	3	4	5
b. To change the level of risk	1	2	3	4	5
c. To have better control over the type of investment vehicles I want to put my money in	1	2	3	4	5
d. To invest according to religious principle/guidance	1	2	3	4	5
e. Other (please specify: _____)	1	2	3	4	5

12. How satisfied are you with the performance of the unit trust fund you purchased under the MIS (your **main** fund if you have more than one) over the last three years?

Very dissatisfied Dissatisfied Neutral Satisfied Very Satisfied

13. Please rate your level of agreement/disagreement for each of the following statements with regard to investing in external unit trusts. **(Please circle)**

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
a. I do not have enough confidence to choose an external unit trust	1	2	3	4	5
b. I have little interest in financial matters	1	2	3	4	5
c. The cost of investing in external unit trusts is high	1	2	3	4	5
d. I might lose some savings if I invest in an external unit trust	1	2	3	4	5
e. I do not want to take the extra risk of investing in an external unit trust	1	2	3	4	5
f. I want to earn a higher rate of return by investing in an external unit trust	1	2	3	4	5
g. Investing in an external unit trust will provide asset diversification	1	2	3	4	5

14. What percentage of the excess of savings investment choice do you think should be given to an EPF member? **(Please tick)**

Below 20% 20% (current limit) 21% to 40%
 41% to 60% 61% to 80% 81% to 100%

15. What do you think of the range of unit trust funds approved under the MIS? **(Please tick)**

Too narrow About right Too broad Don't Know

16. When you are next eligible to invest part of your EPF savings in the unit trusts, would you: (Please tick **only one** option)

Invest part of your savings in the unit trusts
 Maintain all the savings with the EPF

SECTION C: FINANCIAL INFORMATION SOURCES

1. Please indicate whether you have used each of the following as sources of financial or investment information. Would you please also rate the importance of the information, whether you have used the information source or not.
For example:

Yes, I have used this	No, I have not use this		Not at all important	Not important	Neutral	Important	Extremely important
✓		a. Recommendations of Friends/Family	1	2	3	4	5

Yes, I have used this	No, I have not use this		Not at all important	Not important	Neutral	Important	Extremely important
		a. Recommendations of Friends/Family	1	2	3	4	5
		b. Recommendations of Work Colleagues	1	2	3	4	5
		c. Unit trusts consultant (agent)	1	2	3	4	5
		d. Internet/ Online resource	1	2	3	4	5
		e. Advertising in the press	1	2	3	4	5
		f. Seminars	1	2	3	4	5
		g. Books	1	2	3	4	5
		h. Catalogues/ brochures	1	2	3	4	5
		i. Published performance ratings	1	2	3	4	5

2. This section seeks your opinion about unit trust consultants (agent) that you may consult in purchasing unit trusts. How important would the following be when you make your investment decision? **(Please circle)**

	Not at all Important	Not Important	Neutral	Important	Extremely Important
a. Years involved in unit trust industry	1	2	3	4	5
b. Personal Performance track record (e.g.: number of clients, total sales)	1	2	3	4	5
c. Knowledge of Conventional Investment Fund	1	2	3	4	5
d. Knowledge of Islamic Investment Fund	1	2	3	4	5
e. Personal religious belief	1	2	3	4	5

SECTION D: FUND SELECTION CRITERIA

1. How important are each of the following factors in selecting a unit trust fund?
(Please circle)

	Not at all Important	Not Important	Neutral	Important	Extremely Important
a. Past performance of fund	1	2	3	4	5
b. Qualification of fund manager	1	2	3	4	5
c. Experience of fund manager	1	2	3	4	5
d. Investment style of fund manager	1	2	3	4	5
e. Size of fund	1	2	3	4	5
f. Government-linked fund	1	2	3	4	5
g. Bank-owned fund	1	2	3	4	5
h. Cost of transaction	1	2	3	4	5
i. Overall reputation of the fund	1	2	3	4	5
j. The fund's commitment to Islamic principles	1	2	3	4	5
k. Fund ratings	1	2	3	4	5

2. If you chose to invest part of your savings in the unit trusts, which category of fund would you choose to invest in? Please tick **only one** option.

Conventional Fund Islamic Fund Does not matter

3. The following statements are related to views that people might have with regards to investment in an Islamic Fund. Please rate your level of agreement for each of the following statements: (Please circle)

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
a. I invest in an Islamic Fund merely to comply with my religious beliefs	1	2	3	4	5
b. I invest in Islamic Fund because of my ethical belief	1	2	3	4	5
c. Islamic Fund will more likely to provide a higher return than Conventional Fund	1	2	3	4	5
d. Islamic Fund will more likely to have a lower investment risk than Conventional Fund	1	2	3	4	5

If you have any other reasons for investing in an Islamic Fund, please specify:

SECTION E: FINANCIAL AND INVESTMENT KNOWLEDGE

Please indicate your agreement/disagreement to the following statement: **(Please circle)**

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
1. I am knowledgeable about how the EPF system works	1	2	3	4	5
2. I am knowledgeable about financial planning for retirement	1	2	3	4	5
3. I am confident in my ability to do retirement planning.	1	2	3	4	5
4. When I have a need for financial services, I know where to obtain information on what to do.	1	2	3	4	5
5. I am knowledgeable about Syariah principles related to investment	1	2	3	4	5

SECTION F: FINANCIAL RISK TOLERANCE

This section seeks your financial risk tolerance. Please indicate your agreement/disagreement to the following statement: **(Please circle)**

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
1. I am willing to risk financial losses	1	2	3	4	5
2. I prefer investments that have higher returns even though they are riskier	1	2	3	4	5
3. The overall growth potential of a retirement investment is more important than the level of risk of the investment	1	2	3	4	5
4. I am willing to make risky investments to ensure financial stability in retirement	1	2	3	4	5
5. As a rule, I would never choose the safest investment when planning for retirement.	1	2	3	4	5

SECTION G: RELIGIOUS COMMITMENT INVENTORY

This section seeks your perception towards your religious commitment, **if you have one**.

I recognise that questions about your religion and faith are very personal. They are very important to my survey and thesis. Please be assured of the anonymity of the survey.

Please indicate your agreement/disagreement to the following statement: **(Please circle)**

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
1. Religion is especially important to me because it answers many questions about the meaning of life	1	2	3	4	5
2. I often read books and magazines about my faith	1	2	3	4	5
3. I spend time trying to grow in understanding of my faith	1	2	3	4	5
4. My religious beliefs lie behind my whole approach to life	1	2	3	4	5
5. I make financial contributions to my religious organisation	1	2	3	4	5
6. Religious beliefs influence all my dealings in life.	1	2	3	4	5
7. I enjoy spending time with others of my religious affiliation	1	2	3	4	5
8. I enjoy taking part in the activities of my religious organisation.	1	2	3	4	5
9. I keep well informed about my local religious group and have some influence in its decisions.	1	2	3	4	5
10. It is important to me to spend periods of time in private religious thought and prayer.	1	2	3	4	5

If your religious affiliation is to Islam, please complete the final **Section H** in the next page.

If your religious affiliation is **not** to Islam, this completes the survey. Thank you for your time in completing this questionnaire. Your opinions are valuable and important to the success of this study. Please ensure that you have answered **ALL** questions.

THANK YOU

SECTION H: MUSLIM RELIGIOSITY

If your religious affiliation is to Islam, please complete this section. I recognise that questions about your religion and faith are very personal. They are very important to my survey and thesis. Please be assured of the anonymity of the survey.

How often do you comply with the following statements related to Islamic law and akhlaq?

(Please Circle)

	Never	Rarely	Sometimes	Very Often	Always
1. I pray five times a day.	1	2	3	4	5
2. I fast the whole of Ramadhan.	1	2	3	4	5
3. I pay zakat fitrah every year.	1	2	3	4	5
4. I make sure that my dress/cloth covers my aurat.	1	2	3	4	5
5. I make sure the food and drink I consumed are halal.	1	2	3	4	5
6. I go to the mosque to pray 'solat fardh'.	1	2	3	4	5
7. I perform 'solat fardh' in congregation.	1	2	3	4	5
8. I give charity to the poor and needy.	1	2	3	4	5
9. I read Quran and perform zikir.	1	2	3	4	5
10. I have taken or given bribes.	1	2	3	4	5
11. I have taken interest (riba).	1	2	3	4	5
12. I visit my family/friends when they are bedridden.	1	2	3	4	5
13. I thank Allah for my food and drink.	1	2	3	4	5
14. I fulfill all that I promise.	1	2	3	4	5
15. I am honest at all times.	1	2	3	4	5

Please indicate your agreement/disagreement to the following statement about faith: **(Please circle)**

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
16. Islam is a way of life.	1	2	3	4	5
17. Quranic teachings are suitable and practicable in today's life.	1	2	3	4	5
18. Rasulullah's traditions are suitable and practicable throughout all times.	1	2	3	4	5
19. All mankind's deeds will be judged and rewarded accordingly after death.	1	2	3	4	5
20. My earnings are from own effort and not Allah's will.	1	2	3	4	5
21. Death and destiny are determined by Allah alone.	1	2	3	4	5
22. Man's wealth depends on their own effort.	1	2	3	4	5

END OF QUESTIONNAIRE

Thank you for your time in completing this questionnaire. Your opinions are valuable and important to the success of this study. Please ensure that you have answered **ALL** questions.

THANK YOU

Appendix 3 Information Letter and Consultant Survey

Unit Trust Consultants' Survey

Information Letter

Dear Unit Trust Consultant,

I am conducting research on retirement savings behaviour in Malaysia, as part of my Doctor of Philosophy (Business) degree at Edith Cowan University, Perth, Western Australia. This research aims to examine factors that influence individual Employees Provident Fund (EPF) members in their investment choice decision. In particular, this study will focus on the Members Investment Scheme (MIS), initiated by the EPF. Given the members may invest part of their savings in approved external funds such as the unit trusts, this study seeks to explore the role of unit trust consultant in influencing members' decision.

I am inviting you to participate and share your opinion with respect to this research. I would be very grateful if you could spare 10-15 minutes of your time to complete the questionnaire enclosed. Please read the instructions for each section carefully. It is very important that all questions are completed.

This is an anonymous questionnaire. Participation in this study is entirely voluntary. All responses are completely confidential and will only be used for the purposes of this study. If the information you provide is published, you will not be identified in any written work as presentation of the data will be aggregated. The rationale and design of this study has satisfied the strict guidelines laid down by the Ethics Committee of ECU.

If you have any questions regarding any aspects of this research, please contact me:

Nurasyikin Jamaludin
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Phone: +61449798456
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Joondalup, WA 6027
Phone: +61 (0)8 6304 5565 Email:
Email: m.clarkmurphy@ecu.edu.au

If you have any concerns or complaints about this study and wish to speak to an independent person, you may contact:

Research Ethics Officer,
Edith Cowan University,
Phone: +61 (0)8 6304 2170
Email: research.ethics@ecu.edu.au

I really appreciate if you can complete this survey TODAY and return it to the box provided at the entrance.

If you were not able to complete this survey today, please email me at nurasyij@our.ecu.edu.au for online version.

Once again, thank you very much for your kind participation.

SECTION A: DEMOGRAPHIC

Please tell us about yourself by **ticking one** answer for each question. Please complete all questions – **this is very important for the research.**

- 1. Gender: Male Female
- 2. Age: _____ years
- 3. Ethnicity: Malay Chinese Indian
 Other (please specify: _____)
- 4. Religion affiliation: Islam Buddhism Hinduism
 Christianity None Other (please specify: _____)
- 5. Highest Education Achievement: Secondary school Diploma
 First Degree Masters Degree PhD
 Other (please specify: _____)

SECTION B: EMPLOYMENT

- 1. How long have you been employed as a unit trust consultant? _____ Years
- 2. Which company are you currently working for?

- 3. For each of the following category of funds, what was your total fund sales placed for clients for the year ended 31 December 2009?

Conventional Fund (RM)	Islamic Fund (RM)

SECTION C: EPF MEMBERS INVESTMENT SCHEME (MIS)

The Employees Provident Fund (EPF) introduced “Basic Savings” in 2008. Basic Savings is an amount of savings to be put aside in Account 1 progressively at various age levels to enable members to accumulate a minimum savings of RM120,000 upon reaching retirement age of 55. Under the (MIS), the EPF allows its members to withdraw up to 20% of the amount in excess of the “Basic Savings” for investment in unit trusts through approved external fund managers. The minimum initial investment for each fund is RM1,000.

- 1. Do you have client(s) under this scheme?
 Yes No

2. In your view, what level of importance **your clients** rate the following reasons for withdrawing savings from the EPF to invest in unit trusts? **(Please circle)**

	Not at all important	Not important	Neutral	Important	Extremely important
a. To get more attractive returns	1	2	3	4	5
b. To change the level of risk	1	2	3	4	5
c. To have better control over the type of investment vehicles I want to put my money in	1	2	3	4	5
d. To invest according to religious principle/guidance	1	2	3	4	5
e. Others (please specify: _____)	1	2	3	4	5

3. What percentage of the excess of savings investment choice do you think should be given to an EPF member?

Below 20% 20% (current limit) 21% to 40%
 41% to 60% 61% to 80% 81% to 100%

4. What do you think of the range of unit trust funds approved under the MIS?
 Too narrow About right Too broad Don't Know

5. For each of the following category of funds, what was your total fund sales placed for clients under this scheme for the year ended 31 December 2009?

Conventional Fund (RM)	Islamic Fund (RM)

6. What was the average balance of your clients' funds for the year ended 31 December 2009? RM _____

SECTION D: FINANCIAL INFORMATION SOURCES

1. Overall, what importance do you believe **your clients** place on the following as sources of financial or investment information? **(Please circle)**

	Not at all important	Not important	Neutral	Important	Extremely important
a. Recommendations of Friends/Family	1	2	3	4	5
b. Recommendations of Work Colleagues	1	2	3	4	5
c. Unit trusts consultant (agent)	1	2	3	4	5
d. Internet/ Online resource	1	2	3	4	5
e. Advertising in the press	1	2	3	4	5
f. Seminars	1	2	3	4	5
g. Books	1	2	3	4	5
h. Catalogues/ brochures	1	2	3	4	5
i. Published performance ratings	1	2	3	4	5

2. In consultation with you when making their investment decision, how important do **your clients** consider the following about you? **(Please circle)**

	Not at all important	Not important	Neutral	Important	Extremely important
a. Your experience in unit trust industry	1	2	3	4	5
b. Your personal performance track record (e.g.: number of clients, total sales)	1	2	3	4	5
c. Your knowledge of Conventional Investment Fund	1	2	3	4	5
d. Your knowledge of Islamic Investment Fund	1	2	3	4	5
e. Your religious belief	1	2	3	4	5

3. What level of importance **do you** place on the following in dealing with your clients? **(Please circle)**

	Not at all important	Not important	Neutral	Important	Extremely important
a. Your experience in unit trust industry	1	2	3	4	5
b. Your personal performance track record (e.g.: number of clients, total sales)	1	2	3	4	5
c. Your knowledge of Conventional Investment Fund	1	2	3	4	5
d. Your knowledge of Islamic Investment Fund	1	2	3	4	5
e. Your religious belief	1	2	3	4	5

SECTION E: FUND SELECTION CRITERIA

1. In your view, what importance do **your clients** place on the following factors in selecting a unit trust fund?

	Not at all important	Not important	Neutral	Important	Extremely important
a. Past performance of fund	1	2	3	4	5
b. Qualification of fund manager	1	2	3	4	5
c. Experience of fund manager	1	2	3	4	5
d. Investment style of fund manager	1	2	3	4	5
e. Size of fund	1	2	3	4	5
f. Government-linked fund	1	2	3	4	5
g. Bank-owned fund	1	2	3	4	5
h. Cost of transaction	1	2	3	4	5
i. Overall reputation of the fund	1	2	3	4	5
j. The fund's commitment to Islamic principles	1	2	3	4	5
k. Fund ratings	1	2	3	4	5

2. In your view, what importance **do you** place on the following factors in recommending a unit trust fund? **(Please circle)**

	Not at all important	Not important	Neutral	Important	Extremely important
a. Past performance of fund	1	2	3	4	5
b. Qualification of fund manager	1	2	3	4	5
c. Experience of fund manager	1	2	3	4	5
d. Investment style of fund manager	1	2	3	4	5
e. Size of fund	1	2	3	4	5
f. Government-linked fund	1	2	3	4	5
g. Bank-owned fund	1	2	3	4	5
h. Cost of transaction	1	2	3	4	5
i. Overall reputation of the fund	1	2	3	4	5
j. The fund's commitment to Islamic principles	1	2	3	4	5
k. Fund ratings	1	2	3	4	5

3. The following statements are views about investment in an Islamic Fund. Please rate **your own** level of agreement for each of the following statements: **(Please circle)**

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
a. Investing in an Islamic Fund allows complying with religious beliefs	1	2	3	4	5
b. Investing in an Islamic Fund allows complying with ethical belief	1	2	3	4	5
c. Islamic Fund will more likely to provide a higher return than Conventional Fund	1	2	3	4	5
d. Islamic Fund will more likely to have a lower investment risk than Conventional Fund	1	2	3	4	5

If you have any other reasons for investing in an Islamic Fund, please specify:

4. Given the availability of Islamic Fund in the capital market, to what extent **do you** believe your knowledge of Islamic principles is important in recommending to your client an Islamic Fund? **(Please circle)**

Not at all Important	Not Important	Neutral	Important	Extremely Important
1	2	3	4	5

5. How did you acquire knowledge of Islamic Funds? Please tick **only one** source.

- Personal religious background
 In-house training
 Secondary education
 Other (please specify: _____)

6. Please rate your understanding of the differences between Islamic Fund and Conventional Fund: **(Please circle)**

Extremely Poor	Poor	Neither Poor nor Good	Good	Extremely Good
1	2	3	4	5

7. Given your level of understanding of Islamic Fund, would you recommend this category of fund to your potential client? Yes No

SECTION F: RELIGIOUS COMMITMENT INVENTORY

This section seeks your perception towards your religious commitment, **if you have one**. I recognise that questions about your religion and faith are very personal. They are very important to my survey and thesis. Please be assured of the anonymity of the survey.

To what extent do you agree/disagree with the following statements: **(Please Circle)**

	Strongly Disagree	Dis-agree	Neither Disagree nor Agree	Agree	Strongly Agree
1. Religion is especially important to me because it answers many questions about the meaning of life	1	2	3	4	5
2. I often read books and magazines about my faith	1	2	3	4	5
3. I spend time trying to grow in understanding of my faith	1	2	3	4	5
4. My religious beliefs lie behind my whole approach to life	1	2	3	4	5
5. I make financial contributions to my religious organisation	1	2	3	4	5
6. Religious beliefs influence all my dealings in life.	1	2	3	4	5
7. I enjoy spending time with others of my religious affiliation	1	2	3	4	5
8. I enjoy taking part in the activities of my religious organisation.	1	2	3	4	5
9. I keep well informed about my local religious group and have some influence in its decisions.	1	2	3	4	5
10. It is important to me to spend periods of time in private religious thought and prayer.	1	2	3	4	5

If your religious affiliation is to Islam, please complete the final **Section G** in the next page.

If your religious affiliation is **not** to Islam, this completes the survey. Thank you for your time in completing this questionnaire. Your opinions are valuable and important to the success of this study. Please ensure that you have answered **ALL** questions.

THANK YOU

SECTION G: MUSLIM RELIGIOSITY

If your religious affiliation is to Islam, please complete this section. I recognise that questions about your religion and faith are very personal. They are very important to my survey and thesis. Please be assured of the anonymity of the survey.

How often do you comply with the following statements related to Islamic law and akhlaq?
(Please Circle)

	Never	Rarely	Sometimes	Very Often	Always
1. I pray five times a day.	1	2	3	4	5
2. I fast the whole of Ramadhan.	1	2	3	4	5
3. I pay zakat fitrah every year.	1	2	3	4	5
4. I make sure that my dress/cloth covers my aurat.	1	2	3	4	5
5. I make sure the food and drink I consumed are halal.	1	2	3	4	5
6. I go to the mosque to pray 'solat fardh'.	1	2	3	4	5
7. I perform 'solat fardh' in congregation.	1	2	3	4	5
8. I give charity to the poor and needy.	1	2	3	4	5
9. I read Quran and perform zikir.	1	2	3	4	5
10. I have taken or given bribes.	1	2	3	4	5
11. I have taken interest (riba).	1	2	3	4	5
12. I visit my family/friends when they are bedridden.	1	2	3	4	5
13. I thank Allah for my food and drink.	1	2	3	4	5
14. I fulfil all that I promise.	1	2	3	4	5
15. I am honest at all times.	1	2	3	4	5

Please indicate your agreement/disagreement to the following statement about faith: (Please circle)

	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
16. Islam is a way of life.	1	2	3	4	5
17. Quranic teachings are suitable and practicable in today's life.	1	2	3	4	5
18. Rasulullah's traditions are suitable and practicable throughout all times.	1	2	3	4	5
19. All mankind's deeds will be judged and rewarded accordingly after death.	1	2	3	4	5
20. My earnings are from own effort and not Allah's will.	1	2	3	4	5
21. Death and destiny are determined by Allah alone.	1	2	3	4	5
22. Man's wealth depends on their own effort.	1	2	3	4	5

END OF QUESTIONNAIRE

Thank you for your time in completing this questionnaire. Your opinions are valuable and important to the success of this study. Please ensure that you have answered **ALL** questions.

THANK YOU