

**KNOWLEDGE AND ATTITUDINAL FACTORS
INFLUENCING MALAYSIAN INDIVIDUAL INVESTORS'
ANNUAL REPORT FINANCIAL STATEMENTS USAGE**

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**FACULTY OF BUSINESS AND ACCOUNTANCY
UNIVERSITY OF MALAYA
KUALA LUMPUR**

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**KNOWLEDGE AND ATTITUDINAL FACTORS INFLUENCING MALAYSIAN
INDIVIDUAL INVESTORS' ANNUAL REPORT FINANCIAL STATEMENTS
USAGE**

ABSTRACT

Financial statements are important sources of information about entities for stock investment decision-making. Yet, reliance on them is not universal among individual investors and it is unclear what affects their financial statements usage. The purpose of this thesis is to examine the influence of financial statement knowledge and attitudinal factors on Malaysian individual investors' annual report financial statement usage. Underpinned by human capital theory and the theory of planned behaviour, this quantitative study involves a survey of 399 individual investors in Malaysia. The research instrument is a self-administered questionnaire answered by individual investors who attended investment talks conducted by a major Malaysian stockbrokerage firm. Findings indicate that annual report financial statements usage is positively influenced by subjective norm, financial statement knowledge, financial statements usage attitude, perceived behavioural control and investment horizon attitude while negatively influenced by trading attitude and investing luck attitude. Diligence acts as a moderator on the relationship between financial statement knowledge and annual report financial statements usage. Statistically significant differences in financial statements usage were identified for gender, age group, education level, employment sector and investing experience, though not for ethnicity. It is hoped that findings of this study will be useful in the development of more effective investor education programmes that not only endow investors with greater financial knowledge but also shape attitudes that elicit positive long-term stock investing behavior.

Keywords: Financial knowledge, investor attitudes, financial statements usage

KNOWLEDGE AND ATTITUDINAL FACTORS INFLUENCING MALAYSIAN INDIVIDUAL INVESTORS' ANNUAL REPORT FINANCIAL STATEMENTS

USAGE

ABSTRAK

Penyata kewangan memberikan maklumat kewangan mengenai entiti untuk penggunaan pelabur membuat keputusan pelaburan. Walau bagaimanapun, sejauh mana pelabur individu mempunyai pengetahuan kewangan yang mencukupi dan faktor-faktor yang mempengaruhi mereka untuk menggunakan penyata kewangan masih belum jelas. Tujuan kajian ini adalah untuk mengkaji pengaruh pengetahuan penyata kewangan dan faktor sikap mengenai penggunaan penyata kewangan dalam laporan tahunan di kalangan pelabur individu di Malaysia. Ia disokong oleh dua teori iaitu teori modal manusia dan teori perilaku yang direncanakan. Ini adalah kajian kuantitatif yang melibatkan kaji selidik pelabur individu di Malaysia. Saiz sampel berjumlah 399 pelabur individu. Instrumen kajian adalah soal selidik yang diberikan kepada pelabur individu yang menghadiri siri ceramah pelaburan yang dijalankan oleh sebuah firma broker saham utama di Malaysia. Keputusan menunjukkan bahawa penggunaan penyata kewangan dipengaruhi secara positif oleh norma subjektif, pengetahuan penyata kewangan, sikap terhadap penggunaan penyata kewangan dan kontrol perilaku, manakala sikap dagangan dan sikap terhadap nasib mempunyai kesan negatif ke atas penggunaan penyata kewangan. Diharapkan kajian ini akan membantu dalam pembinaan program pendidikan pelabur yang lebih berkesan.

Keywords: Financial knowledge, investor attitudes, financial statements usage

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TABLE OF CONTENTS

Abstract	iii
Abstrak	iv
Acknowledgements	v
Table of Contents	vii
List of Figures	xvii
List of Tables.....	xviii
List of Symbols and Abbreviations.....	xxi
List of Appendices	xxiii
CHAPTER 1: INTRODUCTION.....	1
1.1 Introduction	1
1.2 Background of the Study.....	3
1.3 Problem Statement	8
1.4 Research Objectives	14
1.5 Research Questions	15
1.6 Research Methodology.....	15
1.7 Research Motivations.....	16
1.8 Contributions of the Study	17
1.9 Organisation of Chapters.....	20
1.10 Chapter Summary.....	21
CHAPTER 2: FINANCIAL STATEMENTS FOR INVESTMENT DECISION- MAKING PURPOSES.....	22
2.1 Introduction	22
2.2 Philosophical Assumptions in Financial Reporting	22

2.3 Objective of Financial Reporting	25
2.4 Impact on Financial Reporting in Malaysia	29
2.4.1 Legal Requirements	31
2.4.2 Mandatory Requirements.....	33
2.5 Usefulness of Financial Statements for Investment Decision-Making	34
2.6 Chapter Summary.....	37
CHAPTER 3: LITERATURE REVIEW.....	38
3.1 Introduction	38
3.2 Research on Annual Reports	38
3.2.1 Evolution of Annual Reports	38
3.2.2 Research on Annual Report Contents.....	43
3.2.3 Narratives.....	43
3.2.3.1 Readability.....	44
3.2.3.2 Methods of Evaluating Readability	44
3.2.3.3 International Research on Annual Report Readability	45
3.2.3.4 Annual Report Readability in Malaysia	46
3.2.3.5 Annual Report Readability Issues	47
3.2.3.6 Format.....	50
3.2.3.7 Length.....	51
3.2.3.8 Alternative Methods of Assessing Annual Report Readability...	52
3.2.4 Images.....	53
3.2.4.1 Photographs and Pictures.....	53
3.2.4.2 Graphs and Charts	54
3.2.5 Quantitative: Financial Statements	55
3.3 Financial Literacy.....	58
3.3.1 Defining Financial Literacy.....	58

3.3.1.1 Financial Knowledge.....	62
3.3.1.2 Financial Attitudes.....	64
3.3.1.3 Financial Behaviour.....	64
3.3.2 Measuring Financial Literacy	65
3.3.3 Socio-Demographic and Psychographic Differences in Financial Literacy	72
3.3.3.1 Age.....	72
3.3.3.2 Gender... ..	72
3.3.3.3 Ethnicity.....	73
3.3.3.4 Income.....	73
3.3.3.5 Education Level.....	74
3.3.3.6 Financial Education	74
3.3.3.7 Employment Status.....	75
3.3.3.8 Marital Status.....	76
3.3.3.9 Religion	76
3.3.3.10 Family Background	76
3.3.3.11 Region/Area.....	77
3.3.3.12 Psychological Factors	78
3.3.4 Financial Literacy Worldwide	79
3.3.5 Financial Literacy in Asia.....	80
3.3.6 Financial Literacy in Southeast Asia	81
3.3.7 Financial Literacy in Malaysia	82
3.3.8 Importance of Financial Literacy.....	84
3.3.9 Financial Literacy of Individual Investors.....	87
3.4 Individual Investor Behaviour.....	88
3.4.1 Reasons for Studying Individual Investors.....	89
3.4.2 Investor Decision-Making Theories	91

3.4.2.1 Neoclassical Viewpoint	91
3.4.2.2 Behavioural Viewpoint.....	93
3.4.2.3 Limitations of Behavioural Viewpoint.....	96
3.4.2.4 Emerging Views	97
3.4.2.5 Why Investor Rationality Matters for Financial Statements Usage.....	98
3.4.3 Individual Investor Behavioural Shortcomings.....	98
3.4.3.1 Underperformance	99
3.4.3.2 Overtrading.....	99
3.4.3.3 Overconfidence.....	100
3.4.3.4 Disposition Effect.....	100
3.4.3.5 Limited Attention	102
3.4.3.6 Herding	102
3.4.3.7 Behavioural Biases	103
3.4.4 Investment Decision-Making Behaviour	105
3.4.4.1 Fundamental Analysis	106
3.4.4.2 Technical Analysis	108
3.4.4.3 Other Investment Appraisal Methods.....	109
3.4.5 Factors Influencing Individual Investor Behaviour	110
3.4.6 Individual Investor Behaviour in Malaysia	112
3.5 Discussion of Research Gaps	115
3.6 Chapter Summary.....	118
CHAPTER 4: RESEARCH FRAMEWORK AND HYPOTHESES DEVELOPMENT.....	120
4.1 Introduction	120
4.2 Theoretical Perspective	120

4.3 Theories to Support Research	121
4.3.1 Human Capital Theory.....	121
4.3.2 Theory of Planned Behavior (TPB).....	128
4.4 Theoretical Framework	134
4.4.1 Inclusion of Additional Predictor Variables	136
4.4.2 Omission of Variable for Behavioural Intention	139
4.5 Hypotheses Development.....	143
4.5.1 Financial Statement Knowledge	144
4.5.2 Diligence.....	145
4.5.3 Investment Horizon Attitude	147
4.5.4 Investing Luck Attitude	148
4.5.5 Trading Attitude.....	149
4.5.6 Financial Statements Usage Attitude.....	151
4.5.7 Subjective Norm	152
4.5.8 Perceived Behavioural Control.....	153
4.5.9 Demographic Differences in Variables.....	154
4.5.9.1 Financial Statement Knowledge Differences	154
4.5.9.2 Investment Horizon Attitude Differences.....	155
4.5.9.3 Investing Luck Attitude Differences	155
4.5.9.4 Trading Attitude Differences.....	155
4.5.9.5 Financial Statements Usage Attitude Differences	156
4.5.9.6 Subjective Norm Differences	156
4.5.9.7 Perceived Behavioural Control Differences	157
4.5.9.8 Annual Report Financial Statements Usage Differences	157
4.6 Research Framework.....	157
4.7 Summary of Research Objectives, Research Questions and Hypotheses	159

4.8 Chapter Summary.....	159
CHAPTER 5: RESEARCH METHODOLOGY.....	160
5.1 Introduction.....	160
5.2 Research Paradigm.....	160
5.3 Research Design.....	163
5.4 Sampling Method.....	164
5.4.1 Unit of Analysis.....	165
5.4.2 Sample Size.....	165
5.4.3 Sampling Technique.....	166
5.5 Data Collection Method.....	168
5.6 Research Instrument.....	170
5.7 Questionnaire Development.....	172
5.7.1 Preliminary Questionnaire Development.....	172
5.7.2 Pilot Study.....	175
5.7.3 Final Questionnaire Development.....	178
5.8 Operationalisation and Measurement of Instrument.....	178
5.8.1 Independent Variables.....	178
5.8.1.1 Financial Statement Knowledge.....	178
5.8.1.2 Investment Horizon Attitude.....	181
5.8.1.3 Investing Luck Attitude.....	182
5.8.1.4 Trading Attitude.....	182
5.8.1.5 Financial Statements Usage Attitude.....	183
5.8.1.6 Subjective Norm.....	184
5.8.1.7 Perceived Behavioural Control.....	185
5.8.2 Moderating Variable.....	186
5.8.3 Dependent Variable.....	186

5.8.4 Control Variables	188
5.8.4.1 Basic Financial Knowledge	188
5.8.4.2 Demographic Variables	189
5.9 Data Analysis Procedure	190
5.9.1 Data Screening and Cleaning.....	190
5.9.2 Tabulation of Mean Scores	191
5.9.3 Descriptive Statistics.....	191
5.9.4 Factor Analysis	192
5.9.5 Reliability Analysis.....	192
5.9.6 Tests for Statistical Assumptions.....	193
5.9.7 Preliminary Analysis.....	194
5.9.8 Multiple Regression Analysis.....	195
5.10 Chapter Summary.....	200
CHAPTER 6: FINDINGS	202
6.1 Introduction	202
6.2 Data Collection Results.....	202
6.3 Profile of Respondents	203
6.4 Financial Knowledge of Respondents.....	205
6.4.1 Basic Financial Knowledge	206
6.4.2 Financial Statement Knowledge	208
6.5 Annual Report Financial Statements Usage.....	210
6.6 Descriptive Statistics	211
6.7 Factor Analysis.....	212
6.8 Reliability Analysis	214
6.9 Tests for Statistical Assumptions	217
6.9.1 Normality	217

6.9.2 Homoscedasticity and Linearity	218
6.9.3 Multicollinearity	219
6.10 Demographic Differences Among Variables	219
6.10.1 Financial Statement Knowledge Differences	220
6.10.2 Investment Horizon Attitude Differences.....	221
6.10.3 Investing Luck Attitude Differences.....	222
6.10.4 Trading Attitude Differences	224
6.10.5 Financial Statements Usage Attitude Differences	225
6.10.6 Subjective Norm Differences.....	226
6.10.7 Perceived Behavioural Control Differences	227
6.10.8 Annual Report Financial Statements Usage Differences.....	229
6.11 Correlations	230
6.12 Multiple Regression Analysis	231
6.13 Results of Hypotheses Testing	241
6.14 Chapter Summary.....	248
CHAPTER 7: DISCUSSION AND CONCLUSION.....	250
7.1 Introduction	250
7.2 Discussion	250
7.2.1 Research Objective 1:	250
7.2.2 Research Objective 2:	252
7.2.3 Research Objective 3:	253
7.2.3.1 Investment Horizon Attitude and Annual Report Financial Statements Usage	254
7.2.3.2 Investing Luck Attitude and Annual Report Financial Statements Usage.	254

7.2.3.3 Trading Attitude and Annual Report Financial Statements Usage.....	255
7.2.3.4 Financial Statements Usage Attitude and Annual Report Financial Statements Usage	256
7.2.3.5 Subjective Norm and Annual Report Financial Statements Usage.....	257
7.2.3.6 Perceived Behavioural Control and Annual Report Financial Statements Usage	258
7.2.4 Research Objective 4:	259
7.2.4.1 Financial Statement Knowledge Differences	259
7.2.4.2 Investment Horizon Attitude Differences.....	260
7.2.4.3 Investing Luck Attitude Differences	261
7.2.4.4 Trading Attitude Differences.....	261
7.2.4.5 Financial Statement Usage Attitude Differences.....	262
7.2.4.6 Subjective Norm Differences	263
7.2.4.7 Perceived Behavioural Control Differences.....	263
7.2.4.8 Annual Report Financial Statements Usage Differences	264
7.3 Implications of the Findings.....	266
7.3.1 Implications for Regulators and Preparers.....	271
7.3.2 Implications for Investor Education Programmes	272
7.4 Contributions of the Study	274
7.4.1 Theoretical Contributions	274
7.4.2 Methodological Contributions	278
7.4.3 Practical Contributions	279
7.5 Limitations and Suggestions for Future Research.....	280
7.6 Conclusion.....	285

References	289
List of Publications and Papers Presented.....	333
Appendices	334

Universiti Malaya

LIST OF FIGURES

Figure 3.1: OECD Dimensions of Financial Literacy.....	61
Figure 4.1: Theory of Planned Behaviour.....	130
Figure 4.2: Theoretical Framework.....	142
Figure 4.3: Research Framework	158
Figure 5.1: Research Process	201

Universiti Malaya

LIST OF TABLES

Table 3.1: Measurement Attributes of Commonly Used Readability Formulae.....	45
Table 3.2: Measures Used to Evaluate Financial Literacy.....	67
Table 3.3: Research Methodologies Used in Financial Literacy Studies.....	70
Table 3.4: Trading Volume on Bursa Malaysia by Individual Investors.....	90
Table 4.1: Summary of TPB-related Studies with Additional Predictor Variables.....	137
Table 4.2: Summary of Research Objectives, Research Questions and Hypotheses....	159
Table 5.1: Research Questionnaire.....	171
Table 5.2: Reliability Test for Pilot Study.....	177
Table 5.3: Financial Statement Knowledge Questions.....	179
Table 5.4: Investment Horizon Attitude Items.....	181
Table 5.5: Investing Luck Attitude Items.....	182
Table 5.6: Trading Attitude Items.....	183
Table 5.7: Financial Statements Usage Attitude Items.....	183
Table 5.8: Subjective Norm Items.....	184
Table 5.9: Perceived Behavioural Control Items.....	185
Table 5.10: Diligence Items.....	186
Table 5.11: Annual Report Financial Statements Usage Items.....	187
Table 5.12: Basic Financial Knowledge Questions.....	188
Table 5.13: Measurement of Dummy Variables.....	189
Table 6.1: Profile of Respondents.....	205
Table 6.2: Correct Responses to Basic Financial Knowledge Questions.....	206
Table 6.3: Breakdown of Responses to Basic Financial Knowledge Questions.....	206
Table 6.4: Percentage of Correct Answers in Comparable Studies.....	207

Table 6.5: Correct Responses to Financial Statement Knowledge Questions	208
Table 6.6: Levels of Financial Statement Knowledge among Respondents	209
Table 6.7: Breakdown of Responses to Financial Statement Knowledge Questions....	209
Table 6.8: Annual Report Financial Statements Usage among Respondents	210
Table 6.9: Descriptive Statistics.....	211
Table 6.10: Factor Loadings for Exploratory Factor Analysis with Varimax Rotation	213
Table 6.11: Cronbach's Alpha of Variables.....	214
Table 6.12: Normality Tests for Variables.....	218
Table 6.13: Collinearity Diagnostics (Tolerance and VIF).....	219
Table 6.14: Gender Differences for Financial Statement Knowledge	220
Table 6.15: Other Demographic Differences for Financial Statement Knowledge	220
Table 6.16: Gender Differences for Investment Horizon Attitude.....	221
Table 6.17: Other Demographic Differences for Investment Horizon Attitude	222
Table 6.18: Gender Differences for Investing Luck Attitude	223
Table 6.19: Other Demographic Differences for Investing Luck Attitude	223
Table 6.20: Gender Differences for Trading Attitude.....	224
Table 6.21: Other Demographic Differences for Trading Attitude.....	224
Table 6.22: Gender Differences for Financial Statements Usage Attitude	225
Table 6.23: Other Demographic Differences for Financial Statements Usage Attitude	225
Table 6.24: Gender Differences for Subjective Norm	226
Table 6.25: Other Demographic Differences for Subjective Norm	227
Table 6.26: Gender Differences for Perceived Behavioural Control.....	227
Table 6.27: Other Demographic Differences for Perceived Behavioural Control.....	228
Table 6.28: Gender Differences for Annual Report Financial Statements Usage	229

Table 6.29: Other Demographic Differences for Annual Report Financial Statements Usage.....	229
Table 6.30: Pearson’s Correlations among Variables	231
Table 6.31: Multiple Regression Analysis for Model 1	232
Table 6.32: Multiple Regression Analysis for Model 2	234
Table 6.33: Multiple Regression Analysis for Model 3	237
Table 6.34: Multiple Regression Analysis for Model 4	240
Table 6.35: Summary of Hypothesis Testing Results	249

Universiti Malaysia

LIST OF SYMBOLS AND ABBREVIATIONS

11MP	:	Eleventh Malaysia Plan
ANOVA	:	Analysis of Variance
APT	:	Arbitrage Pricing Theory
Bursa	:	Bursa Malaysia
CAPM	:	Capital Asset Pricing Model
CCM	:	Companies Commission of Malaysia
CDS	:	Central Depository System
CEO	:	Chief Executive Officer
CFA	:	Certified Financial Analyst
CPA	:	Certified Public Accountant
CSR	:	Corporate Social Responsibility
EMH	:	Efficient Market Hypothesis
EFA	:	Exploratory Factor Analysis
EPF	:	Employees Provident Fund
FASB	:	Financial Accounting Standards Board
FDI	:	Foreign direct investment
FPAM	:	Financial Planning Association of Malaysia
GAAP	:	Generally Accepted Accounting Principles
GASB	:	Government Accounting Standards Board
HRS	:	Health and Retirement Study
IASB	:	International Accounting Standards Board
IAS	:	International Accounting Standards
IPO	:	Initial Public Offering
KMO	:	Kaiser-Meyer-Olkin Measure of Sampling Adequacy

LDE	:	Left-digit effect
MASB	:	Malaysian Accounting Standards Board
MFRS	:	Malaysian Financial Reporting Standards
MIA	:	Malaysian Institute of Accountants
MICPA	:	Malaysian Institute of Certified Public Accountants
MPERS	:	Malaysian Private Entities Reporting Standard
NGO	:	Non-Governmental Organisation
NRM	:	New Reporting Model
OECD	:	Organisation for Economic Co-operation and Development
PCA	:	Principal component analysis
PCB	:	Perceived behavioural control
PDPA	:	Personal Data Protection Act 2010
PRS	:	Private Retirement Scheme
SCM	:	Securities Commission Malaysia
SEC	:	Securities and Exchange Commission
SEM	:	Structural Equation Modeling
SPM	:	Sijil Pelajaran Malaysia (Malaysian Certificate of Education)
SPSS	:	Statistical Package for the Social Sciences
TPB	:	Theory of Planned Behaviour
TRA	:	Theory of Reasoned Action
TV	:	Television
UAE	:	United Arab Emirates
UK	:	United Kingdom
US	:	United States (of America)
VIF	:	Variance Inflation Factor

LIST OF APPENDICES

Appendix A: Expert Panel Particulars.....	334
Appendix B: Summary of Feedback from Expert Panel	335
Appendix C: Research Questionnaire.....	336
Appendix D: Exploratory Factor Analysis Results.....	343
Appendix E: Normal P-P Plot of Variables.....	347
Appendix F: Scatterplots of Regression Standardised Residuals.....	352
Appendix G: Normal P-P Plots of Regression Standardised Residuals.....	354

Universiti Malaysia

CHAPTER 1: INTRODUCTION

1.1 Introduction

Financial statements in corporate annual reports are prepared primarily for the use of investors. However, research has shown that they are not universally used by individual investors (for example, Callen, Lai, & Wei, 2016; De Zoysa & Rudkin, 2010; Johansen & Plenborg, 2013). This is unfortunate because the information in financial statements is value-relevant and useful for investment decision-making (Brimble & Hodgson, 2007; Francis & Schipper, 1999; Graham & Dodd, 2009). Financial statement usage matters because in its absence, individual investors tend to make investment decisions based on emotions rather than on sound financial reasoning and speculate in the stock market. These usually end in long-term wealth destruction (Barber & Odean, 2000). To optimise utilisation by individual investors we need to first understand what influences their financial statements usage or the lack thereof. Unfortunately, there is a paucity of research on the subject.

The literature demonstrates that financial behaviour is influenced by financial knowledge (for instance, Asaad, 2015; Lusardi, 2017; Robb & Woodyard, 2011). Therefore, it is postulated the financial statement knowledge¹ of individual investors influences their annual report financial statements usage. In addition, the extant literature shows that attitudes affect the financial behaviour of different segments of society (Atkinson & Messy, 2012; Ibrahim, Harun, & Isa, 2009; Loke, 2016) including individual investors (Kannadhasan, 2015; Wood & Zaichkowsky, 2004) suggesting that

¹ Defined in this thesis as the knowledge of terms and concepts in financial statements such as the income statement, balance sheet and cash flow statement.

² Also referred to as equities or ordinary shares.

attitudinal factors could possibly influence annual report financial statements usage among individual investors. Hence, research is needed to determine whether this is so and what these factors are.

The focus of this thesis is the influence of financial knowledge and attitudinal factors on Malaysian individual investors' annual report financial statements usage. Nonetheless, it also examines related issues such as evaluating the level of financial statement knowledge among Malaysian individual investors and the extent to which they rely on financial statements. Although Malaysia has a large population of individual investors relative to its size (Hermanus, 2015) and common stocks have been publicly traded in the Malaysian stock market since 1960 (Bursa Malaysia, 2017), these issues have not been adequately researched. Prior studies reported that Malaysian individual investors rely on financial analysis (Lai, Low, & Lai, 2001; Nik Muhammad & Abdullah, 2009) but published research on their understanding and usage of financial statements are both lacking. Therefore, this study seeks to address these longstanding matters in Malaysian financial reporting.

The rest of this chapter is organised as follows. Section 1.2 describes the background of the study and Section 1.3 is on the problem statement. The research objectives and research questions comprise Section 1.4 and Section 1.5 respectively while Section 1.6 discusses the research methodology. Section 1.7 explains the motivations for the study and Section 1.8 elaborates on the contributions of the study. Section 1.9 outlines the organisation of the thesis whereas Section 1.10 is a chapter summary.

1.2 Background of the Study

Common stocks² are a popular class of investments because they require relatively smaller initial investments, have greater liquidity and promise attractive returns over the long-term. Stock investors can be classified into two categories; institutional investors and individual investors. According to Çelik and Isaksson (2013, p. 95), institutional investors are legal entities and not physical persons. Institutional investors range from limited liability partnerships, joint-stock companies such as unit trust firms, pension funds to sovereign wealth funds. In contrast, individual investors or retail investors are people “who buy and sell securities for their personal account, and not for another company or organization” (Investopedia.com, n.d.). These so-called “small” investors comprise doctors, salaried employees, retirees and even housewives, among others.

In recent decades, institutional investors have come to dominate stock markets worldwide (Çelik & Isaksson, 2013; Davis, 2009; Foroohar, 2016). Despite this phenomenon, there is still a significant population of individual investors³. For example, China has the world’s largest population of individual investors with 200 million, and is the only major country where over 80% of stock trades are accounted for by individual investors (Fahey & Chemi, 2015). In a similar vein, in the United States of America (with a population of around 320 million), 48% of the adult population invests in the stock market (Long, 2015), while in India there are around 27 million individual investors (Singh, 2015). Hence, individual investors total a few hundred million globally.

² Also referred to as equities or ordinary shares.

³ Graham and Dodd (1934) made a distinction between stock investors and speculators. They noted that investments are those which are selected after thorough analysis that “promises safety of principal and adequate return,” whereas those to the contrary are speculation. However, Graham and Zweig (2006) observed that subsequently, the term investor became widely used to refer to “anybody and everybody in the stock market”. Such terminology is evident also in the academic literature, though it must be stressed that individuals invest in some stocks for the long-term while also dabbling in stock speculation. This study endeavours to examine individuals with investor traits, which is reflected in the sampling method and research instrument.

Investing in shares can be lucrative but risky. Incidents such as the Vienna Stock Exchange crash in 1873⁴, the 1929 stock market crash⁵, the US dot-com bubble in the early 2000s,⁶ the global financial crisis of 2007-2008⁷ and China's stock market turbulence in 2015-2016⁸ illustrate the uncertainty and volatility that have always characterised stock markets. While many incur losses during such crashes, there are those who suffer losses even when the market is doing well simply because of poor investment decisions. While the actual stock investment decision itself is incumbent on an assessment of many factors, information is vital to good investment decision-making so investors should strive to obtain as much information as possible about prospective investments from a multitude of sources before reaching an investment decision (Fisher, 2003; Graham & Zweig, 2006). Important sources of information include corporate annual reports.

The *raison d'être* of annual reports is to reduce information asymmetry between management and stakeholders, primarily investors of the firm, by communicating corporate information. At the heart of annual reports are the financial statements, which in the absence of fraud, misstatements, undue errors and creative accounting, embody the true financial position of an entity. These are valuable sources of information about the underlying fundamentals of a company and the "true and fair" view is a core characteristic of financial reporting. Indeed, the objective of financial reporting is to provide financial information about the reporting entity that is useful to existing and

⁴The crash originated with a property speculation bubble precipitated by the Vienna World Fair, an ambitious prestige project for the then Austro-Hungarian Empire. A construction boom fuelled by credit occurred due to expectations of considerable revenues. When the Fair opened on May 1, 1873, visitor turnout was vastly below expectations and hundreds of firms became insolvent. A week later, the Vienna Stock Market crashed. May 9, 1873 became known as "Black Friday" (Fischer, 2011).

⁵Which triggered the Great Depression of 1929 to 1939 (Reinhart & Rogoff, 2009).

⁶ Due to overinflated expectations about the earnings potential of technology companies (Ferguson, 2009), a situation that seems to be repeated now especially regarding social media companies.

⁷ Which originated as a banking and insurance crisis in the US but panic spread to global stock markets (Blinder, 2014).

⁸ The cooling of China's economy and the bankruptcy of several State-Owned Enterprises (SOEs) caused stock prices to tumble, fuelling panic among China's vast population of individual investors, many of whom never experienced a bear market and purchased shares on margin with borrowed funds with the naïve belief that stock prices would never fall (Bradsher & Tsang, 2016; Shen & Goh, 2015).

potential investors, lenders and other creditors in making decisions about providing resources to the entity” (Malaysian Accounting Standards Board, 2011). Even though it is repeatedly emphasised that past performance is no indicator of future performance, the performance of a company that is gleaned from its stock price, dividend payout and financial statements over a reasonable period should provide sufficient evidence to help investors evaluate their strategy regarding that security.

While investors may rely on financial statements as part of their due diligence, financial statement analysis is sometimes an element of broader strategies such as value investing⁹ or growth investing¹⁰. In particular, value investing has been empirically proven to be successful (Piotroski, 2000) and in the United States (US), investors are reliant on historical financial statements when making stock investment decisions (Drake, Roulstone, & Thornock, 2016). The phenomenal success of Warren Buffett¹¹ is partly attributed to his ability to analyse and interpret financial statements (Buffett & Clark, 2011).

Despite these clear benefits of financial statements usage, it must be acknowledged that financial statements are by no means easy to understand. Added to that is the problem of growing annual report complexity (ACCA, 2012; Deloitte, 2010). While large institutional investors are endowed with sufficient resources to analyse complex annual reports, individual investors are disadvantaged due to time, money and knowledge constraints (Miller, 2010). Such problems are evident worldwide, but they have special relevance to Malaysia.

⁹ Investing in underpriced stocks for the long-term (Graham & Zweig, 2006).

¹⁰ Investing in stocks with strong growth potential over a long-term horizon (Fisher, 2003).

¹¹ An American businessman who is chairman of the investment holding company Berkshire Hathaway, headquartered in Omaha, Nebraska. In a period of 24 years, the company achieved an annual average compounded return of 21% and a total return of 9,417% (Gandel, 2014).

Malaysia is poised to become an aging nation by 2030 due to increasing life expectancies and falling birth rates (The Sun Daily, 2015). This development, which is much more rapid than in developed nations, means that the country has a very short transition into an aging nation (Abdul Hamid, 2015). The disintegration of the extended family has led to the loss of traditional safety nets for the elderly, underscoring the importance of financial independence. Added to that is the problem of rising living costs, especially medical inflation which is at a staggering 23% per annum in Malaysia (The Star, 2014). These trends are expected to continue well into the foreseeable future and are especially perplexing for those without the luxury of a secure government pension. Even though most private sector Malaysian employees have Employees Provident Fund (EPF)¹² savings, 67% of them have not met the basic saving threshold to sustain their retirement (Ling, 2016) and need to augment their savings to spend their golden years in reasonable comfort.

The Government is cognizant of these challenges and has launched several initiatives to address the problem of insufficient retirement funds. One of them is the adoption of the World Bank Conceptual Framework (World Bank, 2008) five “pillar” pension model. The third “pillar” consists of individual savings and investments for retirement and this has been adapted as the Private Retirement Scheme (PRS) in Malaysia to augment the EPF. A thrust of the Eleventh Malaysia Plan (11MP)¹³ is financial inclusion through, among others, increased individual investor participation (Economic Planning Unit, 2015), in line with our aspiration to become a high income nation as per

¹² The EPF is a social security institution that was established by the Government of Malaysia via the Employees Provident Fund Act 1991 to provide retirement benefits for its members (KWSP, 2017). It operates along a defined contribution plan in which 11% of an employee’s monthly salary is deducted and channeled into the Fund and the employer contributes a sum equivalent to a minimum of 12% to a maximum of 19% of the employee’s monthly salary. Members typically withdraw their EPF savings upon retirement, although they are allowed to make earlier partial withdrawals for buying a house and other approved expenses. The EPF guarantees a minimum annual dividend rate of 2.5%. It is the largest institutional investor in Malaysia.

¹³ The 11th in a series of five-year economic plans by the Government.

Vision 2020. Malaysians are also urged to be more proactive by investing in the stock market.

Due to these reasons and because of an Asian trait of saving, Malaysia has the second highest population of individual investors per capita in Southeast Asia (Hermanus, 2015). Approximately 2.49 million individuals or 20% of the total adult population aged 18 and above invest in the Malaysian stock market (Aruna, 2017). The Government has also provided infrastructure that facilitate stock investing. The Securities Commission Malaysia (SCM) and Bursa Malaysia (Bursa), the Malaysian stock exchange, follow international best practices while financial reporting in the country which is regulated by the Malaysian Accounting Standards Board (MASB) adopts International Financial Reporting Standards (IFRS) for public and private entities. Therefore, corporate annual reports adopt international benchmarks in terms of content and presentation.

Such moves are intended to attract large foreign investors to the Malaysian stock market. However, the impact of First World financial reporting on Malaysian individual investors has not been adequately examined. Malaysia is a developing country where only approximately 15% of its adult population has a college degree (Ministry of Education Malaysia, 2016). Furthermore, the command of English appears to be diminishing among youths¹⁴ who also score lower in Mathematics than their peers from less developed nations (World Bank, 2013). Since all corporate annual reports in Malaysia are in English with a minority in vernacular languages, Malaysian individual investors may face added challenges in understanding financial statements that are typically couched in prolix English that is challenging even to native speakers (U.S.

¹⁴ For ethnic Malays, English is generally a second language but for the Chinese, Indians and others, it is often a second or third language.

Securities and Exchange Commission, 1998), and possibly lack mathematical expertise in performing financial statement analysis.

Despite these challenges, previous studies have indicated that Malaysian individual investors are highly reliant on financial statements analysis (Jamal, Ramlan, Pazim, & Budin, 2014; Lai, Tan, & Chong, 2013; Nik Muhammad & Abdullah, 2009), suggesting high levels of financial statements usage. However, the objective of these studies was to establish that Malaysian individual investors are rational decision-makers and not to examine their financial statements usage. As mentioned earlier, there is a dearth of research in Malaysia on the subject. Therefore, what influences Malaysian individual investors to use financial statements and their level of usage warrant further attention.

1.3 Problem Statement

Although extensive research has been done on the different users of financial statements (for example, De Zoysa & Rudkin, 2010; Johansen & Plenborg, 2013), the types of information they rely on (for instance, Lawrence & Kercksmar, 1999; Libby, Bloomfield, & Nelson, 2002) and the benefits of financial statement usage (such as Piotroski, 2000), there is a surprising lack of studies on what influences individuals to use financial statements. Since companies expend considerable resources on preparing annual reports and the financial statements contained therein, this matter is of great importance, considering the debate on the relevance of annual reports to investors (ACCA, 2012; Johansen & Plenborg, 2013).

Financial knowledge is vital for individuals to make well-informed financial decisions in their daily lives (OECD/INFE, 2016). According to Atkinson and Messy

(2012, p. 16), financial knowledge is “basic knowledge of key financial concepts, and the ability to apply numerical skills in financial situations”. Financial knowledge is an element of financial literacy (Abreu & Mendes, 2010; Agarwalla et al., 2013; Asaad, 2015; Babiarz & Robb, 2014; Huston, 2010; Ibrahim et al., 2009; Loke, 2016; van Rooij, Lusardi, & Alessie, 2007; Wang, 2009). High financial literacy is essential for successful investors. Studies have shown that low financial literacy among individual investors is associated with low portfolio diversification (Abreu & Mendes, 2010) and negative risk-taking behaviour (Wang, 2009). Additionally, high financial literacy is a bulwark against possible impression management¹⁵ strategies in corporate disclosures (examples of which are provided by Hales, Kuang, & Venkataraman, 2011; Hrasky, Mason, & Wills, 2009; Rutherford, 2003).

The ability to understand the numerical accounting information in financial statements requires advanced financial knowledge, namely financial statement knowledge which can be regarded as a type of human capital as it promotes positive financial behaviour that leads to wealth maximisation. Yet, in the light of studies that indicate low levels of basic financial literacy in Malaysia (Ali, 2013; Atkinson & Messy, 2012; Ibrahim et al., 2009; OECD/INFE, 2016), it is questionable whether average Malaysian individual investors possess the requisite financial statement knowledge to comprehend increasingly complex financial statements and use them with confidence for investment decision-making purposes. Hence, an appraisal of the financial statement knowledge of individual investors is needed.

As mentioned earlier, financial statements are important sources of information about companies. Underpinning financial reporting is the neoclassical assumption of investor

¹⁵ Impression management can be defined as the way managers are incentivised to “represent their company’s performance in the best possible light” (Tweedie & Whitting, 1990, as cited in Beattie, Dhanani, & Jones, 2008).

rationality or *homo economicus*. Accordingly, individuals have permanent rationality and act out of economic self-interest to maximise their utility (Oehler, Höfer, & Wendt, 2014). Information asymmetry should be minimised so that investors can make informed and rational decisions, and this is channeled through financial statements and other corporate disclosures. Hence, the prevailing notion in financial reporting is that preparers should endeavour to provide as much information as possible to reduce information asymmetry and help rational individuals make good investment decisions. Unfortunately, little to no consideration is given to the fundamental fact that some readers may be unable to understand financial statements.

This zeal to fulfil the information needs of supposedly rational investors has invariably led to growing financial statement length and complexity. Notwithstanding the assumption of investor rationality, it must be remembered that individuals have cognitive and temporal limits of how much information they can process (Barber & Odean, 2008), so presenting them with a surfeit of information is tantamount to information overload (Himma, 2007; Iannaconi, 2012; KPMG, 2011; Radin, 2007). Financial statement complexity is especially problematic for novice or unsophisticated individual investors.

Studies have shown that increased financial statement length, textual complexity and sheer volume of information impede the understanding of users, which causes suboptimal investment decisions. Users require more time and effort to process information and tend to make more mistakes when appraising stock (Dellavigna & Pollet, 2009). Useful information is lost in a thick fog of dense, impenetrable text and convoluted financial statements. Even among professional investors, low readability of financial statements adversely influences stock prices (Lee, 2012) and earnings

forecasts (Lehavy, Li, & Merkley, 2011). Complex filings that are too difficult for individual investors to understand result in lower trading volume particularly for small investors (Miller, 2010).

Most studies on annual report understandability are confined to the narratives alone. Understandability is normally measured using reading ease scores as a proxy (for example, Abdul Rahman, 2014; Lee, 2012; Lehavy et al., 2011). However, narratives such as notes to the financial statements serve complementary roles and can only be fully understood if the user is able to understand the numerical accounting information of these reports. Since financial statements are presented in a particular manner and contain accounting information that is only intelligible to those with specialised knowledge, it is worth pausing to consider if investors possess sufficient knowledge to effectively understand and use such information for investment decision-making. While it is unreasonable to expect the average small investors to have as much expertise as professional accountants or financial analysts, they should at least have some basic financial statement knowledge to give them an overall sense of the financial health of the companies in which they invest. Therefore, the lack of research on the financial statement knowledge of individual investors is regrettable and should be remedied.

The relationship between financial statement knowledge and annual report financial statements usage may not be straightforward. Financial statement analysis is a challenging undertaking that requires apart from knowledge, self-discipline and thoroughness by individual investors. In other words, investors need to be diligent, which is another type of human capital. It is possible that diligence would have a moderating effect on the relationship between financial statement knowledge and usage of annual report financial statements. Diligence in the context of this study incorporates

the concept of self-discipline and thoroughness as proposed by Tang, Baker, and Peter (2015).

The theory of planned behaviour (Ajzen, 1991) states that attitudes, subjective norm and perceived behavioural control influence behaviour. Indeed, researchers have found that attitudes influence financial behaviour (Agarwalla et al., 2013; Alessie, van Rooij, & Lusardi, 2011; Atkinson & Messy, 2011; Ibrahim et al., 2009). The association between attitudes and behavior is evident among stock investors (Paetzold & Busch, 2014; Pascual-Ezama, Scandroglio, & Liaño, 2013). According to Ajzen (1991), attitude towards a behaviour is positively associated with the behaviour itself. Therefore, individual investors who have a positive attitude regarding financial statements usage may be more predisposed to use annual report financial statements when making investment decisions. Similarly, other individual investor attitudes regarding investment horizon, investing luck and trading could also influence financial statements usage. Related factors such as subjective norm and perceived behavioural control (Ajzen, 1991) might also be associated with individual investors' annual report financial statements usage for investment decision-making.

Financial behaviour is an element of financial literacy (Agarwalla et al., 2013; Atkinson & Messy, 2012), and usage of financial statements constitutes a type of financial behaviour. As mentioned earlier, several papers found that Malaysian individual investors rely on financial statement analysis when making investment decisions (Jamal et al., 2014; Lai et al., 2013; Nik Muhammad & Abdullah, 2009). However preliminary interviews with stock brokers and experienced individual investors for this study indicated that many individual investors lack adequate financial statement knowledge and that they do not use financial statements. The contradiction

between this and findings of prior research could be due to several reasons. One, respondents provided socially desirable answers in these studies as suggested by Jamal et al. (2014). Alternatively, individual investors might be reliant on financial statements, but lack of financial statement knowledge might lead them to misunderstand the information and end up making suboptimal investment decisions. Regardless, these are perplexing issues that deserve further enquiry.

This thesis addresses three research gaps that are elaborated on in Chapter 3. In summary, they are as follows. Firstly, there is a lack of literature in financial reporting on how well individual investors understand the numerical accounting information in financial statements and are able use it effectively for investment decision-making. Since knowledge is essential in understanding financial statements, it is suggested that the financial statement knowledge of investors is assessed.

However, the literature review revealed that few researchers examine financial statement literacy, which is the second gap in the literature that this study seeks to address. The handful of studies on the subject merely rely on secondary trading and other data (such as Callen et al., 2016). This shortcoming is regrettable since the survey method is more appropriate for assessing the knowledge, attitudes and behaviour of respondents and is widely used in financial literacy studies (Huston, 2010).

Both these gaps relate to the third gap, which is a paucity of research on factors that influence the usage of financial statements by individual investors, both in the literature on financial reporting and individual investor behaviour. Financial statements usage by various stakeholders and its importance in the investment decision-making process has

been studied extensively. What is less clear is what influences some investors to rely on financial statements while others do not.

Therefore, further research is needed to evaluate the influence of financial statement knowledge and attitudinal factors on Malaysian individual investors' annual report financial statements usage.

1.4 Research Objectives

From the problem statement, the following research objectives are formulated:

1. To examine the influence of financial statement knowledge on Malaysian individual investors' annual report financial statements usage.
2. To determine the extent to which diligence moderates the relationship between financial statement knowledge and Malaysian individual investors' annual report financial statements usage.
3. To examine the influence of the following on Malaysian individual investors' annual report financial statements usage:
 - a. Investment horizon attitude
 - b. Investing luck attitude
 - c. Trading attitude
 - d. Financial statements usage attitude
 - e. Subjective norm
 - f. Perceived behavioural control
4. To evaluate demographic differences in financial statement knowledge, attitudes, subjective norm, perceived behavioural control and annual report financial statements usage among Malaysian individual investors.

1.5 Research Questions

The following research questions are developed to address the research objectives:

1. To what extent is financial statement knowledge a type of human capital that influences Malaysian individual investors' annual report financial statements usage?
2. To what extent does diligence moderate the relationship between financial statement knowledge and Malaysian individual investors' annual report financial statements usage?
3. Does the Theory of Planned Behaviour explain the influence of the following on Malaysian individual investors' annual report financial statements usage?
 - a. Investing horizon attitude
 - b. Investing luck attitude
 - c. Trading attitude
 - d. Financial statements usage attitude
 - e. Subjective norm
 - f. Perceived behavioural control
4. What are the demographic differences in financial statement knowledge, attitudes, subjective norm, perceived behavioural control and annual report financial statements usage among Malaysian individual investors?

1.6 Research Methodology

This is an explanatory study that employs the hypothetico-deductive approach. A series of hypotheses are developed and tested to examine the factors that influence financial statement usage among individual investors in Malaysia. The survey method is

employed to obtain the data needed. The research instrument is a self-administered questionnaire distributed to a sample of individual investors who attended investment seminars conducted in different regions by a major Malaysian stockbrokerage firm. The questionnaire is divided into ten sections and examines financial statement knowledge, attitudinal factors and individual investor behaviour regarding annual report financial statements usage. Consistent with hypothetico-deductive approach, findings are analysed using appropriate statistical methods with the aid of computer software. A detailed discussion of the research methodology will be provided in Chapter 5 of this thesis.

1.7 Research Motivations

This study is partly motivated by the lack of financial reporting research on individual investors in Malaysia. As mentioned earlier, Malaysia has a large number of individual investors relative to its population. Therefore, in terms of membership numbers, individuals comprise a significant class of investors in Malaysia and are worthy of research in financial reporting, especially regarding their understanding and usage of financial statements. Since financial statements are intended for general users, it is pertinent to ascertain the extent to which they are understood and utilised by this target audience. Furthermore, Malaysia's multiracial and multi-religious population provides demographic diversity as well as perspectives from a developing country.

Another impetus of this research is the desire to educate individual investors. Many researchers seem to adopt the maxim that individual investors are *ignoramus et ignorabimus*, often castigating them as superstitious, irrational and consigned to make

poor investment decisions in perpetuity. The author however, adopts a more sanguine view that individual investors can increase their human capital through education.

Financial statements are meant to communicate information to aid in investment decision-making. However, some investors eschew using them for various reasons. To encourage widespread usage among investors, we must first identify what influences individuals to use them. By determining the underlying factors we can then develop more effective investor education programmes. Therefore, this research represents the first step in that direction.

1.8 Contributions of the Study

The foremost contribution of this study is on the largely unexplored subject of factors that influence individual investors' financial statement usage. It demonstrates the significance of knowledge and attitudinal factors on Malaysian investors' annual report financial statements usage. Financial statement knowledge, attitude towards usage of financial statements, perceived behavioural control and investment horizon attitude positively influence Malaysian individual investors' annual report financial statements usage while trading attitude and investing luck attitude negatively influence the dependent variable, after controlling for basic financial knowledge and demographic factors. Subjective norm appears to be the strongest predictor of financial statements usage, suggesting the powerful influence exerted by family and friends on investor behavior.

Another contribution of the study is in financial reporting research. While it has been established that the narratives of Malaysian annual reports range from difficult to

very difficult to read (for instance, Abdul Rahman, 2014; Abdul Raman, Mohd Shaari, & Mahmud, 2012), there is less research on how well investors understand the numerical accounting information in financial statements. This study provides empirical evidence that Malaysian individual investors generally possess satisfactory levels of financial statement knowledge but there are gaps in their knowledge that might hinder them from a deeper understanding of financial statements. Furthermore, the research documents the level of usage of the three main financial statements among Malaysian individual investors. This has not been sufficiently explored in previous studies, and allows comparisons to be made with individual investors in other countries.

Next, the study contributes to the nascent field of research on the financial statement literacy of individual investors. While this thesis does not explicitly evaluate financial statement literacy, it examines its constituent elements, namely financial statement knowledge, attitudes that are related to financial statements usage and the actual usage of financial statements. Therefore, this study paves the way for future research in the field.

This thesis is underpinned by a fusion of human capital theory and the theory of planned behaviour. Hence, another contribution is by extending the application of these theories to a previously under-explored area of investor behaviour, namely on individual investors annual report financial statements usage. Furthermore, the development of the research instrument, particularly for the assessment of financial statement knowledge, represents an original methodological contribution.

There are several practical contributions of this research. Chief amongst them is that findings provide input for the development of more holistic investor education

programmes. The concept of financial literacy rests on the assumption that increased financial knowledge translates into positive financial behaviour (Poon & Olen, 2015). Hence, investor education programmes, regarded as human capital investments, are designed to provide knowledge to educate investors to have better financial behaviour. Examples in Malaysia of such initiatives are Bursa Malaysia's (Bursa) on basic financial literacy for new investors (Bursa Malaysia, 2015), the "Edumericals" of Securities Commission Malaysia (Securities Commission Malaysia, 2016) and the Financial Planning Association of Malaysia (FPAM) talks and seminars to educate investors and the public on various aspects of financial knowledge such as financial statements analysis. However, findings indicate that besides financial statement knowledge, attitudes, subjective norm and perceived behavioural control are significant in influencing financial statements usage. Apart from that, the study provides details on demographic differences among the variables, which is useful for indentifying weaknesses in particular groups. Hence, this study will help in developing more holistic investor education programmes that not only increase financial statement knowledge but shape positive attitudes to elicit long-term behavioural changes favouring annual report financial statements usage.

A final practical contribution of this study is that it provides feedback to regulators and preparers regarding financial statements usage among Malaysian individual investors. Very few local studies examine what sort of financial statements are utilised and the extent of usage so this study partly fills the void. Such feedback will be helpful in enhancing the usage of financial statements among its target audience.

1.9 Organisation of Chapters

This thesis is organised into seven chapters which are outlined as follows:

Chapter 1 briefly describes the background of the study and the problem statement. The research objectives and research questions are articulated as well as the motivation for the study, its contributions and a précis of the research methodology.

Chapter 2 provides a background as to why financial statements are regarded as central to stock investment decision-making. It discusses the philosophical assumptions in financial reporting, the objective of financial reporting, how international developments impact financial reporting in Malaysia and the usefulness of financial statements for investment decision-making.

Chapter 3 is a critical review of relevant literature and is divided into three main sections. The first section is on annual report research. The second section examines literature on financial literacy, with a focus on individual investors and the third section reviews literature on individual investor behaviour. The chapter ends with a summary of gaps in the literature that are addressed in this thesis.

Chapter 4 describes the hypotheses that are developed to answer the research objectives and research questions. The underlying theories of this study are also discussed.

Chapter 5 explains the research methodology. It articulates the research paradigm from which the methodology flows. The research instrument, how it is developed and the data collection process are discussed.

Chapter 6 presents the findings of the study. Descriptive statistics and results of statistical analyses of the research data are shown.

Chapter 7 discusses the findings of the previous chapter. The contributions of the study, its limitations and suggestions for future research are also described. The chapter concludes with a summary of the thesis.

1.10 Chapter Summary

This chapter served as an introduction to the thesis. It outlined the background to the study, problem statement, research questions, research objectives, the research motivation and contributions as well as the research methodology. The next chapter is a background of the circumstances that have led to the preeminence of financial statements for investment decision-making purposes.

CHAPTER 2: FINANCIAL STATEMENTS FOR INVESTMENT

DECISION-MAKING PURPOSES

2.1 Introduction

The purpose of this chapter is to provide a background as to why financial statements usage is regarded as central to stock investment decision-making. It begins with an outline of the philosophical assumptions in financial reporting (Section 2.2). The discussion then turns to the objective of financial reporting (Section 2.3) and how international developments impact financial reporting in Malaysia (Section 2.4). Next, the usefulness of financial statements for investment decision-making is discussed in Section 2.5 and the chapter concludes with a summary (Section 2.6).

2.2 Philosophical Assumptions in Financial Reporting

According to the Australian Government Financial Reporting Council (2013), financial reporting can be defined as “the periodic process of providing financial statements (including the notes thereto) about the financial position and performance of a reporting entity to parties (users) external to that entity to assist them in making informed decisions about allocating scarce resources”.

From this definition, it is clear that financial reporting is widely regarded as praxis. Nonetheless, it is deeply rooted in philosophical assumptions which guide accounting conventions. These assumptions explain why financial statements are prepared the way they are and what sort of information is deemed important for inclusion. According to

Shapiro (1997), there are five general presuppositions in external financial reporting. They are not mutually exclusive because in accounting practice, there are overlaps.

The first presupposition, external realism or ontological subjectivity, is that external reality is independent of how it is described by external representations. An example provided by Shapiro (1997) is that some items of uncertain value such as goodwill are listed as assets in financial statements because of the belief in external reality. External reality is criticised for two main reasons (Shapiro, 1997). One, financial reporting is a socially constructed phenomenon and is therefore not “real” like physical phenomena. Two, financial reporting actually creates features of external reality that it is supposed to depict.

The second presupposition is the corresponding theory of truth, which is also known as representative faithfulness. This means that if financial representations correspond to at least an approximation of an independent existing reality, then it is true. Indeed, representative faithfulness, or sometimes called faithful representation is a common financial reporting convention. This presupposition is opposed because it is claimed (validly) that no financial statements can completely represent reality or satisfy the information needs of all users (Shapiro, 1997).

The third presupposition is the conceptual relativism of financial reporting schemes. This asserts that all systems of representation are human creations and therefore socially constructed. Examples in financial reporting are conceptual frameworks created by various accounting bodies such as the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB). Hence, the same reality can be represented by different systems, and one system is not necessarily better than the

rest. Furthermore –the objectives of financial reporting are based on normative values that cannot be verified or empirically validated” (Shapiro, 1997, p. 167).

The fourth presupposition is subjective judgment or epistemological subjectivity (Shapiro, 1997). Here, it is stressed that epistemological objectivity is impossible because the judgments of accountants on what constitutes economic reality depends on a myriad of factors, some of which are external (such as political, cultural, historical or economic) while others are internal (psychological factors and biases).

The final presupposition is the commitment to rationalism, or what is dubbed epistemological objectivity. Knowledge is regarded as the exemplar of epistemological objectivity because the criteria for its evaluation can be agreed upon by a community (Shapiro, 1997). Knowledge in this context not only refers to the knowledge and expertise of accounting professionals, but it also extends to the concept that knowledge of financial statements provides the user with a rational basis for making decisions based on their interpretation of these financial statements. The verifiability of accounting evidence and the provision of attestation services are all based on the concept of rationalism.

In summary, the interplay of the five presuppositions in external financial reporting shape the way financial statements are prepared, read and understood. Yet, it is also important to explain what represents the objective of financial reporting because it frames who are the intended users of financial statements. This objective is elaborated on in the next section.

2.3 Objective of Financial Reporting

All spheres of human activities are driven by some purpose or objective. The same applies to financial reporting. Surprisingly, there is no universal consensus of what constitutes the objective of financial reporting though as will be discussed, one viewpoint became dominant and is now the driving force of global financial reporting.

Modern international financial reporting practices spring from the two Anglo-American accounting standards setting bodies. Each had its own objective of financial reporting with decision usefulness for the US and stewardship for the United Kingdom (UK) (Pelger, 2016). For decades, the accounting standards setting bodies of both countries maintained these distinct objectives of financial reporting but in recent years, decision usefulness emerged as the primary objective of international financial reporting. This development is intrinsically linked to two solutions that emerged to overcome declining growth rates and lower profitability from mass production that developed countries in the West experienced from the 1970s: globalisation and financialization¹⁶.

Globalisation encompasses many economic, social and cultural facets but the focus here is on one specific aspect of it: international capital market liberalisation. In this regard, globalisation is generally depicted as a force for good and that international capital flow contributes to the growth of emerging economies. For instance, research found that foreign direct investment (FDI) contributed to greater economic growth for developing countries than domestic investment, provided that host countries had a minimum level of human capital (Borensztein, De Gregorio & Lee, 1998). Similarly, a

¹⁶ Karl Marx predicted that financialization would be the final stage of capitalism (Feroohar, 2016).

meta-analysis of 60 studies published from 1997 to 2011 revealed that financial liberalization had a positive albeit weak effect on growth (Bumann, Hermes & Lensink, 2013). Despite these apparent benefits, globalisation has several adverse effects. International capital flows are found to spark off inflation in a fixed exchange regime (Kaminsky, 2005) and short term speculative capital flows resulting from capital market liberalization produces economic instability, (Stiglitz, 2000) especially when capital flight occurs.

Financialization can be defined as a “pattern of accumulation in which profit making occurs increasingly through financial channels rather than through trade and commodity production” (Krippner, 2004, as cited in Arnold, 2012, p. 369). Since the mid-1990s, the financial sectors in the US and the UK grew exponentially and now comprise a significant portion of their respective economies. Financialization requires the free flow of capital and investments by among others, dismantling national regulatory barriers in the financial sector and abolishing national capital controls (Arnold, 2012). Financialization and globalisation have led to the growth of colossal international hedge funds, mutual funds and banks, among others.

As a result of globalisation and financialization, Western investors began pouring capital into emerging markets which promised higher growth rates than home countries. Since the 1970s, Western banks started lending to emerging economies in Latin America and Asia, while mutual funds began investing more heavily in these regions (Kaminsky, 2005). East Asian countries proved to be particularly appealing in the 1990s. Flushed with cash, these countries began experiencing asset bubbles. Like all bubbles, these eventually popped and a mass outflow of capital resulted in the East Asian Financial Crisis of 1997-98.

Interestingly, the Crisis precipitated a new international financial architecture in which international accounting standards occupied centre stage¹⁷. Consequently, there was an urgent quest for uniformed international standards, with the main goal of convergence¹⁸ or at least harmonisation¹⁹. Harmonisation represents “a constitutive role in the financialization of the world economy and US-led efforts to shape the world economy in the image of Anglo-American, finance-led capitalism” (Arnold, 2012, p. 377).

The Securities and Exchange Commission (SEC) has the legal authority to establish accounting standards in the US. Since 1973, the SEC has delegated this function to the FASB, a private sector body (Alon & Dwyer, 2016). The accounting standards issued by the FASB are known as Generally Accepted Accounting Principles (US-GAAP). The UK spearheads the IASB, a private body which is responsible for issuing accounting standards known as International Financial Reporting Standards (IFRS) (Alon & Dwyer, 2016). While US-GAAP are applicable only for firms in the United States, as of March 2107, IFRS are adopted by 149 jurisdictions worldwide²⁰(IFRS, 2017).

In 2002, the IASB and FASB decided to cooperate and converge their accounting standards (Pelger, 2016). A Memorandum of Understanding was signed by both parties

¹⁷ While opinions differ, some very influential individuals at that time such as Larry Summers, Alan Greenspan, Robert Rubin and Mervyn King assert that the East Asian Financial Crisis was due to weaknesses in emerging economies namely crony capitalism, weak corporate governance and low transparency and insist that the crisis might have been averted or ameliorated by better financial reporting (Arnold, 2012). Furthermore, Rahman (1998) claims that if East Asian banks had adopted international accounting standards, investors might have been forewarned about the crisis. Hence, there is a persistent belief in the West that accounting reform in developing countries is needed to help (Western) investors make informed decisions.

¹⁸ Defined by the Financial Accounting Standards Board (N.D.) as “the development of a unified set of high-quality, international accounting standards that would be of use in at least all major capital markets.”

¹⁹ Defined by the Financial Accounting Standards Board (N.D.) as “reducing differences among accounting principles used in major capital markets around the world.”

²⁰ 32 of these jurisdictions are in Asia and Oceania, including Malaysia.

in Norwalk, Connecticut on November 19 of that year²¹ (Arnold, 2012). The first joint board meeting was held in April 2005 to deliberate the objective of financial reporting.

A point of contention was “stewardship”, which was an alien concept to the Americans whose accounting standards were always based on decision usefulness. Indeed, in outlining the objective of financial reporting, Concept Statement No. 1²² originally stated that “financial reporting should provide information that is useful to present and potential investors and other creditors and other users in making *rational investment, credit and similar decisions*” [Emphasis added] (FASB, 2008). However, the British were keen to retain stewardship as an objective of financial reporting. After years of deliberation and debate, in September 2010, an agreement was finally reached when the IASB and FASB issued their revised joint framework. Notably, stewardship was dropped as an objective of financial reporting.

Consequently, decision usefulness became the sole objective of financial reporting in the revised framework by the IASB and FASB²³, a move which has profoundly influenced how users of financial statements are perceived. Pelger (2016, p. 57) stated, “According to the decision usefulness view, financial reporting standards should be developed following the demands of “users” who are perceived as *rational actors* in capital markets” [emphasis added]. Therefore, the concept of the rational man or *homo economicus* is deeply entrenched in financial reporting, which is evident in scholarly research. White and Hanson (2002) concluded that in the diverse range of studies on annual reports, the common feature is the assumption of the economic man (or woman),

²¹ This is known as the Norwalk Agreement.

²² Now revised following the joint framework between the FASB and IASB.

²³ The move was not unanimously accepted. In fact, as Pelger (2016) described in a qualitative study on the decision-making process, there was considerable resistance to the exclusion of stewardship by many aligned with the IASB. Eventually, in the interest of “board unity”, a consensus was reached. It is also worth mentioning that a revised Conceptual Framework by the IASB is due for release at the end of the first quarter of 2018 (IFRS, 2018).

who acts in utility-maximising self-interest²⁴. Hence, financial statements are regarded by international accounting bodies as important sources of information to help the rational individual make sound investment decisions when buying, holding or selling stocks.

2.4 Impact on Financial Reporting in Malaysia

Malaysian accounting standards are modeled on international accounting standards. Hence, the reverberating impact of decision usefulness as the sole objective of financial reporting by the IASB and FASB extends to Malaysia. Unlike other Asian countries such as South Korea which were forced to embrace international accounting standards in the aftermath of the East Asian Financial Crisis (Arnold, 2012), the adoption of international accounting standards in Malaysia is longstanding and follows a different historical trajectory which is briefly discussed in the following paragraphs.

The Federation of Malaya gained independence from the British on August 31, 1957 and Malaysia was formed on September 16, 1963 when Sabah and Sarawak on the island of Borneo joined the federation. Malaysia retains many of the systems and institutions established by its former colonial master but over time, these have evolved to reflect its status as a sovereign nation. Before the formation of the MASB, accounting standards setting in Malaysia was left to professional accounting bodies. At the request of the government, the Malaysian Institute of Certified Public Accountants (MICPA)²⁵ was responsible for setting accounting standards in the 1970s. The Anglophile MICPA recommended the adoption of International Accounting Standards

²⁴ This development can be attributed the increasing hegemony of the neoclassical paradigm of economics, with its libertarian, neo-liberal ideology in accounting research and education in the US (Williams, Jenkins & Ingraham, 2006).

²⁵ The MICPA, established in 1958, is a private association for accountants. Members are predominantly chartered accountants from the UK and Australia (Susela, 1999).

(IAS). From 1987 however, the Malaysian Institute of Accountants (MIA)²⁶ began to play a more active role in accounting standards setting. Unlike the wholesale adoption of IAS as prescribed by MICPA, the MIA adapted IAS to suit the local environment and developed its own accounting standards where there was no applicable IAS. MIA and MICPA subsequently collaborated on the establishment of accounting standards.

A turning point came in 1993 when both parties could not reach a consensus on the Goodwill Standard. MIA had approved this standard (Malaysian Accounting Standard 6) but MICPA deferred its approval and actively lobbied the government to persuade MIA to defer it as well (Susela, 1999). This development was met with some alarm by the government and local industries. It highlighted the need for an independent standard setting body that was not prey to the acrimonious relationship between the MIA and MICPA. As a result, the MASB was formed.

The legal authority for setting accounting standards in Malaysia now rests solely with the MASB, which was created under the Financial Reporting Act 1997 (Malaysian Accounting Standards Board, 2016). Any published financial statements are legally bound by accounting standards that are issued or adopted by the MASB. The accounting standards for entities apart from private entities are known as Malaysian Financial Reporting Standards (MFRS). Accounting standards specifically for private entities are termed Malaysian Private Entities Reporting Standards (MPERS).

A constant in the history of accounting standards setting in Malaysia is the usage of IAS and subsequently IFRS. Indeed, all MFRS issued are either verbatim of IFRS or have minor variations to suit the Malaysian business environment. Following

²⁶ The MIA was formed under the Accountants Act 1967. It is the sole statutory body responsible for regulating the accounting profession in Malaysia and registers accountants practising in Malaysia (Susela, 1999).

developments in the IASB, the MASB revised its Conceptual Framework in November 2011 to state in Paragraph OB2:

The objective of general purpose financial reporting is to provide financial information about the reporting entity that is *useful to existing and potential investors*, lenders and other creditors *in making decisions* about providing resources to the entity. Those decisions involve buying, selling or holding equity and debt instruments, and providing or settling loans and other forms of credit. [Emphasis added] (Malaysian Accounting Standards Board, 2011, p. 6)

This statement is verbatim of the Conceptual Framework issued by the IASB and underscores how decision usefulness for investors has become the central goal of financial reporting²⁷. Only in paragraph OB4 of the Conceptual Framework (Malaysian Accounting Standards Board, 2011) are references made to stewardship, perhaps in an effort to reconcile financial reporting with the legal obligation of the firm via financial reporting which has always been stewardship. The next subsections discuss the legal and mandatory requirements of financial reporting in Malaysia that are impacted by these developments in accounting standards.

2.4.1 Legal Requirements

The law regulating corporate financial reporting in Malaysia is the Companies Act 2016 (Act 777) which came into effect on January 31, 2017²⁸. It states that all public

²⁷ By way of contrast, in the earlier MASB1 it is stated that, –The objective of financial statements is to provide information about the financial position, financial performance and cash flows of an entity that is useful to a wide range of users in making economic decisions. Financial statements also show the results of the management’s stewardship of the resources entrusted to it” (Malaysian Accounting Standards Board, 1999). Here, investors are not singled out as *primus inter pares* and stewardship is given equal prominence as decision usefulness.

²⁸ The Act replaces the Companies Act 1965 and is intended among others, to reduce business costs and improve corporate governance. With regards to financial reporting, the most significant features of the new Act for financial reporting are the decoupling of annual returns and the introduction of financial statements submission (Companies Commission of Malaysia, 2017).

companies²⁹ in Malaysia are required to publish their financial statements. According to Section 2(1) of the Act, the term “financial statements” has the same meaning as set out in the approved accounting standards issued or approved by the Malaysian Accounting Standards Board under the Financial Reporting Act³⁰. The term “approved accounting standards” refers to what is defined in Section 2 of the Financial Reporting Act 1997 as:

- (a) new accounting standards issued by the Board under paragraph 7(1A)(a);
- (b) existing accounting standards adopted by the Board under paragraph 7(1A)(b);
- and
- (c) in relation to foreign companies listed on a stock exchange in Malaysia, acceptable internationally recognised accounting standards;

Section 248 (1) of the Companies Act stipulates that the directors of every company shall prepare financial statements within 18 months of incorporation and subsequently within 6 months of its financial year end. Furthermore, Section 249 (1) of the said Act states that the financial statements should give a true and fair view of the financial position as at the end of the financial year and the financial performance of the financial year of the company. These are in reference to its balance sheet and income statement, respectively.

Public companies are required to lodge their financial statements with the Registrar³⁰ within 30 days of its annual general meeting (Section 259 (1)(b), Companies Act 2016). Failure to do so would result in a fine not exceeding RM50, 000 and a further fine of RM1, 000 for each day during which the offense continues after conviction (Section 259

²⁹ According to Section 2(1) of the Act, a public company is a company other than a private company. In summary, a private company prohibits the public from investing in its shares or debentures.

³⁰ The “Registrar” refers to the Companies Commission of Malaysia (CCM) which is a statutory body formed in 2002 when the Registrar of Companies and the Registrar of Businesses merged. Among others, the CCM is responsible for monitoring business activities and ensuring compliance with corporate legislation (Companies Commission of Malaysia, 2018).

(3), Companies Act 2016). Hence, companies are obliged to comply with the financial reporting and other requirements of the Companies Act 2016 which are rigorously monitored by the Companies Commission of Malaysia (see footnote 27) to avoid such penalties.

2.4.2 Mandatory Requirements

Since the Companies Act dictates that financial statements of companies must be in accordance with approved accounting standards that are issued or approved by the MASB, the Act effectively empowers the MASB to mandate the contents and presentation of corporate financial statements in Malaysia. Furthermore, because the conceptual framework of the MASB is modeled after that of the IASB, the presentation of financial statements is aligned with the purpose of decision usefulness.

Public companies must strictly adhere to MFRS when preparing their financial statements. MFRS 101 (Malaysian Accounting Standards Board, 2014) outlines the presentation of financial statements. It states that a complete set of financial statements should encompass the income statement, balance sheet, cash flow statement, statement of changes in equity and notes to the financial statements. The remaining MFRS concern how the various accounting subjects such as goodwill and fair valuation should be treated in financial reporting.

What all this means to Malaysian individual investors is that the usage of financial statements for investment decision-making is institutionalised by domestic and international accounting bodies through accounting standards setting rhetoric and supported by governments, practitioners and academicians. Hence, at the highest level,

financial statements are regarded as vital sources of information about a firm that investors should not neglect when making informed stock investment decisions.

2.5 Usefulness of Financial Statements for Investment Decision-Making

Financial statements depict the financial health of an entity and should be of paramount interest to existing and potential investors. They inform us how much revenue and profit a firm makes, how much assets and liabilities it has as well as its cash flows, among others. However, some information cannot be read at face value, but must be contextualised in the form of ratio analysis to identify relationships and to enable inter-period or inter-firm comparisons to be made. There is a vast body of literature on financial statement analysis and on the types of information that are useful for investment decision-making. Those of which that are pertinent to this study will be elaborated on in Chapter 3. For now, this section provides a brief overview of some investment strategies to illustrate why financial statements are regarded as useful for investment decision-making purposes.

Investors who typically employ financial statement analysis can be broadly classified as value investors and growth investors. Each approach adopts different investment philosophies. Value investors are those who seek underpriced stocks and hold on to these stocks for the long-term for dividends and capital appreciation. Central to value investing is estimating the intrinsic value of a stock, which is part of fundamental analysis (discussed in detail in Chapter 3).

The father of value investing is Benjamin Graham (1894 – 1974), whose philosophy is expounded via two influential books: –Security Analysis”(Graham & Dodd, 1934,

2009) and “The Intelligent Investor” (Graham & Zweig, 2006) which was first published in 1949. “Security Analysis” is a technical book that provides details on interpreting and analyzing financial statements through ratio analysis for making stock investment decisions, whereas “The Intelligent Investor” is more accessible to the layperson. Both books recommend examining years of financial statements (historical financial statements) for each prospective investment. Such calls seem to be heeded by individual investors. Drake et al. (2016) reported that US investors rely on historical financial statements as sources of information when making investment decisions.

Graham’s most notable disciple is Warren Buffett whose phenomenal investment success over many decades is testament to the merits of value investing. In fact, Buffett’s own investment philosophy, enshrined in his annual Berkshire Hathaway letters to shareholders (available online), apply and extend the concept of value investing³¹. The benefits of value investing have been empirically proven by Piotroski (2000) who demonstrated that this strategy would have earned investors an annual average return of 23% from 1976 to 1996.

Growth investing is characterised by investing in stocks that have strong growth potential over a long-term horizon. Philip Fisher (1907 – 2004) was an influential figure in growth investing whose philosophy is contained in his seminal book “Common Stocks and Uncommon Profits” (Fisher, 2003) which first appeared in 1958. In it, he outlined fifteen points to consider when investing in a common stock. While Fisher did not recommend detailed financial statement analysis like Graham, financial statement

³¹ In an essay for the Appendix of the revised edition of “The Intelligent Investor” (Graham & Zweig, 2006), Buffett wrote that value investing is an intuitive strategy that one grasps immediately or fail to comprehend completely, even after dedicating much time and effort to understand it. Buffett attributed the lack of popularity of value investing in spite of its proven track record to “some pervasive human characteristic that makes easy things difficult”.

knowledge is needed for evaluating some of the fifteen points to investment success³². He also advocated investing in stocks that one intends to hold on for the next 30 years.

Dividends are not important to growth investors due to their preference of profit retention and reinvestment by companies to boost long-term growth. This is in contrast to value investing which advocates investing in companies that have a record of paying dividends continuously for at least the most recent 20 years (Graham & Zweig, 2006). Empirical evidence in the US indicates that individual investors have a preference for high dividend yield stocks (Jain, 2007).

These two approaches share three common features. One, they regard investing as for the long-term and recommend investors hold on to stocks for years, if not decades (Fisher, 2003). Two, they urge investors to do all the necessary due diligence and not take shortcuts when making these long-term investments. Three, they place importance on the ability to read financial statements although the emphasis is stronger under value investing.

It is perhaps premature to assess which of the two approaches is better. For a long time, value investing generated higher returns compared to growth investing especially for small capital stocks as revealed by a longitudinal study in the US by Chan and Lakonishok (2004) that covered the period from 1963 to 2001. Only in the late 1990s did growth stocks outperform value stocks, though their performance declined thereafter. This phenomenon was attributed to “exaggerated levels of optimism about the prospects of technology, media or communication stocks” (Chan & Lakonishok,

³² Specifically, Points 5 and 6 relate to its profit margins, Point 10 is on the company’s cost analysis and accounting controls and Point 13 concern a firm’s capital structure (Fisher, 2003). The best sources of information for evaluating these points are a firm’s financial statements.

2004, p. 84), or to use a more vivid expression, “irrational exuberance”³³. However, from early 2008 to the start of 2018, growth stocks led by technology companies such as Apple and Amazon outperformed value stocks in the US, though there are signs of value investing making a comeback (Derausseau, 2018).

2.6 Chapter Summary

This chapter served to provide a backdrop to why financial statements are regarded as vital for investment decision-making. It described historical developments that have institutionalised the singular objective of international financial reporting which is to provide information for stock investment decision-making. The impact these developments on the legal and mandatory requirements of financial reporting in Malaysia were also discussed. Strategies in which financial statements are utilised for investment decision-making were also highlighted. It is hoped that this chapter has provided a better understanding of the underlying factors influencing financial reporting which are pertinent to the discussions in the next chapter, which is the literature review.

³³ Alan Greenspan, the former Chairman of the Federal Reserve from 1987 to 2006, used the phrase “irrational exuberance” in a speech to the American Enterprise Institute’s annual dinner on December 5, 1996 when referring to the sharp increases in stock values that were not based on sound fundamentals (Greenspan, 2008).

CHAPTER 3: LITERATURE REVIEW

3.1 Introduction

This review encompasses three streams of literature that are relevant to the research subject. It begins with Section 3.2 which discusses research on annual reports. Following this is Section 3.3 which is on financial literacy, while literature on individual investor behaviour comprises Section 3.4. Section 3.5 highlights the gaps in literature that this study hopes to address and Section 3.6 is a chapter summary.

3.2 Research on Annual Reports

This section discusses literature on annual report research, specifically on the evolution of annual reports and the three elements of annual reports, namely narratives, images and quantitative.

3.2.1 Evolution of Annual Reports

The preceding chapter provided a backdrop to corporate financial reporting, specifically the legal and mandatory requirements. Yet, the form and contents of corporate financial statements is also shaped by international norms and best practices. Therefore, a discussion on these developments is needed.

Most jurisdictions require companies to publish their financial statements at least once a year. Granted, companies sometimes publish other financial statements more regularly such as interim and quarterly reports. By convention, however, in most

countries around the world including in Malaysia, financial statements comprise part of corporate annual reports (a notable exception being the US where companies are required to submit Form 10-K filings to the SEC). Presently, a typical corporate annual report in Malaysia includes the following sections: chairman's statement, chief executive's statement, financial highlights, operating review, corporate governance statement, risk management statement and corporate social responsibility (CSR) statement. The financial statements also contain the directors' report and external auditor's report.

According to Stanton and Stanton (2002, p. 478), a corporate annual report is "a formal public document produced by public companies largely as a response to the mandatory corporate reporting requirements existing in most Western economies". Annual reports are not static but dynamic documents that change with the times. The evolution of annual reports is discussed here to provide a better understanding of the factors that have contributed to the current state of reporting and how it impacts investors who use them for investment decision-making.

Historically, annual reports were relatively brief and mainly comprised financial statements to serve the information needs of shareholders. Since the 1990s however, annual reports expanded in size to double, even triple the length of those in decades past (Beattie, Dhanani, & Jones, 2008). For instance, in the UK, the average length of a public listed company annual report in 1996 was 44 pages. Ten years later, the average length increased to 85 pages (Deloitte, 2010, p. 1). By 2015, this rose by another 50%, a development which is attributed to the growing complexity of regulations (Deloitte, 2015, p. 2).

Initially, the expansion of the annual report via increased voluntary disclosures was attributed to efforts by corporations to project a more positive image through impression management (Beattie et al., 2008). Since the start of the new millennium, additional factors have contributed to annual report expansion. One, business models, transactions and instruments have grown increasingly complex (ICAEW, 2009). Businesses now face unprecedented challenges in identifying and managing risk, especially the financial sector where financialization has produced a slew of nebulous products and asset classes (IIASB, 2011). Therefore, financial statements have become more complex to provide relevant information to users regarding these issues.

Two, the advocacy of the IASB in standardising financial reports around the world has contributed to growing adoption of IFRS. Unfortunately, IFRS have added layers of complexity and costs to financial reporting worldwide (Fox, Hannah, Helliar, & Veneziani, 2013; Morunga & Bradbury, 2010).

Three, major accounting scandals that occurred in the early 2000s such as Enron, World.Com and Parmalat caused governments, regulators and international accounting bodies to demand for improved corporate governance and greater transparency to avert future scandals (Brooks & Dunn, 2010). Legislatures such as the Sarbanes-Oxley Act in the US have added further complexity to the already complex financial statements.

Four, the call for more financial and non-financial disclosure by activist shareholders, ethical investors and vocal non-governmental organisations (NGOs) in developed countries force corporations to comply with these demands (Hummels & Timmer, 2004; Ryan, Buchholtz, & Kolb, 2010). Hence, companies began including more voluntary information on issues such as CSR to legitimize their activities (Mohd

Ghazali, 2008; Nik Ahmad & Maliah, 2004) which is an extension of impression management strategy.

Due to these developments, more financial and non-financial information is incorporated into annual reports, making them longer and more complex. In fact, the next stage in the evolution of annual reports appears to be integrated reporting (Adams, Potter, Singh, & York, 2016) with emphasis on holistic value creation over the long-term. However, there is currently limited usage among stakeholders who still overwhelmingly prefer annual reports to find out about the financial performance of companies (Rensburg & Botha, 2014). Also, based on its lofty goals (International Integrated Reporting Council, 2013), it is anticipated that if made mandatory, integrated reporting will be highly challenging for preparers, increase complexity and opaqueness since “value creation” is deeply subjective which businesses will find ways to manipulate, and would be an encumbrance to average individual investors who already struggle with current annual report complexity.

Electronic versions of annual reports typically appear in read-only format such as HTML or PDF. These are cumbersome and problematic especially for performing financial analysis. To overcome their limitations, eXtensible Business Reporting Language (XBRL) was developed. However, Dunne, Helliard, Lymer, and Mousa (2013) found that knowledge of it among key stakeholders such as auditors was limited, thus impeding XBRL diffusion. This is unfortunate because investors are deprived of a superior medium of analysing financial information that would help in decision-making.

The expansion of annual report size is ostensibly to accommodate the growing information needs of a company's various stakeholder groups. Hence, annual reports

have become ‘one size fits all’ documents that supposedly fulfil the information needs of not just shareholders, but creditors, suppliers, governments, non-governmental organizations, customers and communities. In the process of appeasing these other groups which sometimes have conflicting interests, firms may have inadvertently shifted attention from a primary stakeholder group – individual investors.

The evolution of annual report size and content should be a reflection of the information needs of its primary stakeholders. Therefore, it should follow that the annual report format of today is the outcome of increased investor sophistication and their need for highly detailed, technical and complex financial and non-financial information. Indeed, neoclassical finance theory posits that more information leads to better investment decisions. Yet numerous studies and anecdotal evidence indicate a different situation in which many individual and even institutional investors complain that annual reports are too complex and difficult to comprehend (Hynes & Bexley, 2004; Morunga & Bradbury, 2010; Rutherford, 2003; Smith & Taffler, 1992). This represents a paradox of annual reports because they are prepared for the broadest possible audience and should therefore be easy to understand.

The annual report is no longer the only comprehensive source of information about a company’s performance. Besides traditional media like 24-hour business news channels, newspapers, books and magazines, people now have access to online research reports, articles and a wealth of other information. Unsophisticated investors sometimes rely on advice from stockbrokers, ‘hot tips’ or even gossip as their primary source of information.

Interestingly, in spite of the veritable plethora of different sources of information or perhaps because of it, annual reports continue to expand. This phenomenon is unique and has been derided by some. Cook and Sutton (1995), described the annual report as “one of the great anachronisms of corporate communications” over two decades ago. If anything, surely it has become a greater anachronism in the 21st century. It is argued that annual reports today consume a disproportionate amount of resources to produce compared to their utility (Johansen & Plenborg, 2013). Therefore, research on the extent to which individual investors understand annual reports and the factors that motivate investors’ usage of them is much needed. These issues are addressed to varying degrees, as discussed in the following sub-section.

3.2.2 Research on Annual Report Contents

Annual reports can be deconstructed into three broad elements, namely prose, images and quantitative (adapted from Huston, 2010). Prose refers to the narratives contained in annual reports such as the chairman’s statement, management review and the notes to the financial statements. Images comprise pictures, graphs, charts and tables while quantitative concerns the numerical content such as the financial statements. Research on these three elements is discussed as follows.

3.2.3 Narratives

In numerous studies on the subject, the readability of narratives is frequently used as a proxy for assessing annual report complexity. Furthermore, the term “readability” is used interchangeably with “understandability”, though as will be explained later, the former is an imprecise proxy for the latter. This sub-section discusses the various

methods of assessing readability, research on the readability of annual report narratives internationally and in Malaysia as well as issues concerning readability.

3.2.3.1 Readability

Communication is a process that entails the encoding of a message, the transmission of the message and the decoding of that message by the receiver (Bové & Thill, 2000). According to Braswell (2000), the encoding of financial statements for communication encompasses three major dimensions. They are the content of the financial statements, the language used and the format and organisation of the statements. The hallmark of effective communication is that the message must be understood by the target audience. For an annual report, this refers to the readability of narratives or prose in sections such as the chairman's statement and notes to the financial statements.

3.2.3.2 Methods of Evaluating Readability

In accounting research, annual report readability is assessed using various readability formulae which are borrowed from other disciplines such as education. Among the most frequently used are the Flesch formula (Abdul Rahman, 2014; Abdul Raman et al., 2012; Abu Bakar & Ameer, 2010; Braswell, 2000; Curtis & Hassan, 2002; Hrasky et al., 2009; Mohammad & Abdul Rahman, 2006) and the Gunning Fog Index (Lee, 2012; Leheavy et al., 2011). Other popular readability formulae are the Flesch-Kincaid index (Schroeder & Gibson, 1992), the Fry graph and the Lix Test (Braswell, 2000). While there are differences in methodology, these formulae calculate the readability of texts using a combination of the number of syllables per word, word length and sentence length. A summary of these readability formulae is as follows:

Table 3.1: Measurement Attributes of Commonly Used Readability Formulae

	Flesch	Flesch-Kincaid	Gunning-Fog Index	Fry	Lix
<u>Sentence Length Attributes:</u>					
Mean words per sentence	X	X	X		X
Mean sentences per 100 words				X	
<u>Word Length Attributes:</u>					
Percentage of words ≥ 3 syllables			X		
Percentage of words ≥ 6 letters					X
Mean syllables per 100 words	X			X	
Mean syllables per word		X			

Source: Braswell (2000)

Alternatively, experimental research is used to assess readability (Cui, 2016; Tan, Wang, & Zhou, 2014, 2015). This method is more appropriate when examining the effects of readability on influencing investors' judgements when impression management strategies are employed by companies. Few major studies have used questionnaire surveys to ascertain how investors perceive the readability of annual reports.

3.2.3.3 International Research on Annual Report Readability

There is extensive research in developed countries on annual report readability which employ the readability formulae stated in Table 3.1. Since the list is too exhaustive, a summary of major research done in English-speaking countries is provided here. A literature review by Jones and Shoemaker (1994) of the studies done up to then on annual report readability concluded that the readability of annual reports declined over the years. In a subsequent study, Brennan, Pierce, and Guillamon-Saorin (2009), supported this position by asserting that annual reports ranged from difficult to very difficult to read. Furthermore, they found that companies engaged in four types of

impression management in their disclosure. Suffice to say that annual reports have been and continue to be difficult to read. However, there is inconclusive evidence indicating whether they have grown more difficult over the years. The next subsection examines research on annual report readability in Malaysia.

3.2.3.4 Annual Report Readability in Malaysia

There are relatively few significant published papers on annual report readability in Malaysia. A pioneering study by Courtis and Hassan (2002) explored the readability of bilingual annual reports in Hong Kong (in English and Chinese) and Malaysia (in English and Malay). The Flesch formula was used for the English texts while the Yang and Yunus formulae were used for the Chinese and Malay texts respectively. The researchers found that indigenous languages were easier to read and interestingly, the English texts of Malaysian annual reports were more readable than their Hong Kong counterparts. Nonetheless, the caveat is that there is no standardised methodology to ascertain the readability of all languages. Hence, the comparison of reading ease score of different languages is “tentative and uncertain” (p.401).

Mohammad and Abdul Rahman (2006), examined the readability of the year 2000 annual reports of top 100 companies in Malaysia. Using the Flesch formula, they found that 70% of the companies' chairman's statement and notes to the financial statements were very difficult to read while the remaining companies' corresponding narratives were difficult to read. This is a pioneering major study of annual report readability in Malaysia. Findings were supported by a later study which also employed the Flesch formula that covered the financial years 2004 to 2006 (Abdul Raman et al., 2012), which found that almost 75% of the chairman's statements were very difficult to read. A

longitudinal study by Abdul Rahman (2014), again using the Flesch formula, revealed that readability of corporate annual reports improved with net profit to sales ratio but declined when a company structure became more complex. It also reported that while still difficult, readability improved over time, which contradicted earlier studies that showed lower readability. However, this study merely examined the longitudinal performance of a single company, Rothman's, so it is uncertain if findings can be generalised for other Malaysian companies.

3.2.3.5 Annual Report Readability Issues

The wording of any piece of writing is of paramount importance. Ideally, the prose in annual reports should be clear, unambiguous and concise with technical terms being kept to a minimum. Even summarised annual reports should be simpler to read to be effective (Schroeder & Gibson, 1992). Greater clarity is needed to facilitate user understanding (Hrasky & Smith, 2008). In fact, clear annual reports have been demonstrated to positively influence investor decision-making (Hynes & Bexley, 2004).

Poor readability should not be misconstrued that the text cannot be understood. Rather, it indicates that the user must spend more time and effort to read and re-read the document to understand it, but this in itself is problematic. Regardless of investor sophistication, annual reports with high textual complexity require more time and effort to process and increase the tendency of making suboptimal investment decisions. Low annual report readability is associated with poorer analysts' forecasts (Lehavy et al., 2011). Furthermore, low readability of quarterly reports have been demonstrated to adversely impact stock prices by lengthening the price drift after announcement (Lee, 2012). Poor readability is especially problematic for individual investors who lack time

to read and process complex annual reports (Clor-Proell, Proell, & Warfield, 2014; Miller, 2010).

A study by Lawrence (2013) based on readability and length of annual reports indicates that individual investors generally invest in companies that have clear and concise financial disclosures. However, this relationship is less pronounced among individuals with higher financial literacy and high frequency traders.

Ergo, high levels of annual report readability are requisite for facilitating investor decision-making, regardless of investor sophistication. Annual reports that are highly readable fulfil the qualitative characteristics of understandability and materiality (since material information can be gleaned easily) set by international accounting standards. Information that is highly readable requires less time to understand and process. Time that is freed from reading unnecessarily complex financial statements can be put to more productive use such as identifying other investment opportunities. Investors make fewer mistakes when evaluating alternatives and end up making superior investment decisions. The mounting complexity of annual reports is a subject of scrutiny and debate, though not enough to compel a movement towards less complexity. For instance, the US SEC initiated a plain English initiative in 1998 to improve the readability of financial statements (U.S. Securities and Exchange Commission, 1998). However, the move has not stymied companies from issuing prolix financial statements.

Novice investors tend to assume that the language used in annual reports is neutral. However, language can be manipulated in all sorts of ways to inform, persuade, motivate and influence readers. In other words, language is used for impression management by companies for various purposes. Therefore, the textual complexity of

annual reports may belie more sinister motives. Indeed, according to some scholars, companies sometimes engage in willful obfuscation to confuse readers (Abu Bakar & Ameer, 2010; Hrasky et al., 2009; Rutherford, 2003), though this assertion finds less support in other studies (Smith, Jamil, Johari, & Ahmad, 2006; Stanton, Stanton, & Pires, 2004; Zeller, Stanko, & Han Jin, 2012). Companies that have better corporate governance and are more shareholder friendly have 10-K filings in plain English (Loughran & McDonald, 2014), suggesting that firms with more opaque governance have a tendency to obfuscate. Deceptive language has been found in the Management's Discussion and Analysis portion of Form 10-K (Humpherys, Moffitt, Burns, Burgoon, & Felix, 2011). Additionally, the use of vivid language can influence investor judgment (Hales et al., 2011). Therefore, textual manipulation of annual reports can affect the way readers frame³⁴ the information presented to them.

Even though some researchers associate complex narratives in poorly performing firms with obfuscation, the reason could be that poor performance is more difficult to communicate (Bloomfield, 2008, as cited in Li, 2010) and requires justification in more detail to avoid the ire of investors. Also, there is evidence that companies conceal poor performance and increased risk of financial distress through minimal narrative disclosure, a kind of obfuscation through omission (Leung, Parker, & Courtis, 2015). Hence, readers require a certain amount of financial knowledge to be able to see past obfuscation and other forms of manipulation in annual reports. Two further issues that are pertinent to readability are format and length of annual reports. These are discussed as follows.

³⁴ The framing effect can be defined as how different ways of presenting the same information can evoke different emotions (Kahneman, 2012, p. 88).

3.2.3.6 Format

Company laws and accounting standards prescribe the content of annual reports up to a certain extent. However, the format of the annual report lies at the discretion of preparers. Would different annual report formats influence the way users understand them? Prior studies indicate that format plays an influential role. Here, some of the more significant aspects of annual report format will be discussed.

Presentation salience and subjectivity of measurement in annual reports can influence the judgment of non-professional investors, according to research by Clor-Proell et al. (2014). In this experimental study, participants were better able to decipher more information when the presentation salience was high. Such a phenomenon was less pronounced among professional investors who had the necessary knowledge and skills to process additional information. Therefore, effective presentation can facilitate understanding, especially among individual investors.

Annual reports typically contain at least a page of financial highlights that encompass the five most recent financial years. These financial highlights are intended as quick reference for users to skim through to obtain a superficial understanding of key performance indicators. The usefulness of financial highlights is debatable as they sometimes do not contain information that is perceived as important by investors (Chatterjee, 2007).

An annual report is supposed to be a unity of its disparate elements. In theory, there should be no contradictions between different parts as this is confusing to readers. Surprisingly in some instances, narratives and the financial statements in annual reports

do not give the same message to investors, according to Balata and Breton (2005), especially when the company is experiencing poor financial performance. This might be an occurrence of impression management.

Nevertheless in a study, Stanton et al. (2004) posited that there is no impression management in annual reports. According to them, whether an annual report is a full report, a concise report or a modified report, it does not make any real difference to users. Yet this quasi experiment used final year business studies university students as participants so findings cannot be generalised. Also, the researchers conceded that poor performance in one area of the report could overpower the impression formed on other areas and that marketing students had a more favourable impression of concise annual reports than accounting students. Regardless of whether companies engage in impression management, users still form an impression based on the information presentation of the annual report.

Libby (1976) (as cited in Godfrey, Hodgson, Tarca, Hamilton, and Holmes, 2010, p. 458), postulated that decision-making can be facilitated by changing the presentation and information amount of financial statements. This caused Godfrey et al. (2010), to comment that, “surprisingly little research has been undertaken to ascertain ideal accounting presentation formats”. Therefore, it is believed that annual report format could be a factor that contributes to complexity and lower understandability.

3.2.3.7 Length

Sometimes referred to as annual report size (Beattie et al., 2008), greater annual report length is associated with greater complexity. Indeed, as described earlier, annual

reports have vastly increased in length over the past two decades. It is acknowledged that longer reports take more time and effort to process (Hrasky & Smith, 2008; Miller, 2010; Said, 2011) and the volume of irrelevant information contributes to information overload (Cook & Sutton, 1995).

3.2.3.8 Alternative Methods of Assessing Annual Report Readability

Despite widespread usage, conventional methods of assessing readability are not without flaws. Stone and Parker (2013) criticised the traditional Flesch formula for several reasons. They argued that assessing the readability of a text solely on the length of words and sentences is a simplistic approach because other factors that affect readability cannot be measured using this formula, such as sentence structure and flow of sentences. Grammatical construction and stylistic techniques that evolve over time fail to be considered through the Flesch formula. Furthermore, this method is inappropriate for measuring the effects of pictures and diagrammes which are now integral to annual reports.

The usage of readability as a proxy for understandability is being increasingly challenged. As Jones (1997) (as cited in Jones & Smith, 2014, p. 184) pointed out, readability measures the textual difficulty of a passage whereas understandability measures the ability of the reader to gain knowledge from the text. These are two different concepts but are used interchangeably. Hence, alternative measures have been developed to assess textual understandability (Hewaidy, 2007; Jones & Smith, 2014; Stone & Parker, 2013).

Instead of relying on traditional reading scores, Humpherys et al. (2011) employed advanced text mining software in their research on deceptive language used in financial statements. They used Agent99 Analyzer³⁵ to extract fraud related linguistic cues and machine learning algorithms to refine their analysis. The tone of language, which cannot be gauged using readability scores, is assessed using software such as Diction and the Loughran-McDonald dictionary (Loughran & McDonald, 2015).

This discourse on readability illustrates that even though researchers have been studying readability of annual report narratives for decades, a comprehensive measurement method to assess readability is still a work-in-progress. There is no universally accepted method of evaluating readability and there is still considerable debate about employing readability as a proxy for understandability.

3.2.4 Images

Annual reports are increasingly filled with images. These images fall into two groups, which are photographs and pictures, and graphs and charts. Research has been conducted on how users understand these images, how it may shape their judgements and the motivations for inclusion by companies.

3.2.4.1 Photographs and Pictures

Stanton and Stanton (2002) reviewed studies on how photographs are used for impression management to shape user perception of a company. They concluded that photographs were frequently used to personalise the otherwise impersonal company, to

³⁵ A type of software that employs algorithms to extract cues.

add credibility to annual reports and to divert attention from other information in the report. In addition, other researchers have found that photographs were utilised to signal gender diversity at corporations (Bernardi, Bean, & Weippert, 2002) and the gendered interaction in images indicated the power, prominence and status of men and women respectively (Bujaki & McConomy, 2010). Kamla and Roberts (2010) found that companies in Gulf Council Countries used visual images to project that they were modern and global, but still conformed to Islamic principles and local customs to meet the demands of their international and local stakeholders, respectively.

3.2.4.2 Graphs and Charts

Not everybody is numbers-oriented and many people dislike reading long narratives in annual reports. In fact, Townsend and Kahn (2013), reported that when faced with the option of visual versus verbal depictions, consumers generally preferred visual options. Therefore, graphs and charts help fill this information gap and are used extensively in annual reports. A longitudinal study by Beattie et al. (2008), discussed the proliferation of graphs in UK annual reports from 1965 to 2004 and was an extension of prior studies by the same and different authors. Essentially, Beattie et al. (2008) found that graphs were used extensively for operational issues, though financial graph usage had declined.

While appearing to be deceptively simple to decipher, graphs and charts are highly subject to manipulation for impression management. Since there are no regulatory frameworks for graphs and charts in annual reports, companies can cherry pick the time series, the scale and the range of data that is depicted graphically (Beattie et al., 2008). Hence, sharp declines in revenue and profit can be distorted to seem less pronounced

while gains are depicted as steep increases. Unsophisticated users may be more predisposed to be influenced by such manipulations.

How useful graphical information is to users has been the subject of some study. An experimental study by Dilla, Janvrin, and Jeffrey (2013) compared the effects of graphical display of pro-forma earnings on the earnings judgment of professional and non-professional investors. They found that non-professional investors were influenced by graphical displays whereas professional investors were not swayed by such images. This suggests that the use of graphs depends on task complexity, the knowledge and experience of users and that unsophisticated users are more influenced by graphs.

In Malaysia, Isa (2006) found that users ranked graphical information disclosure as being the second most important after financial statements and users were generally satisfied with the quality of graphical information. However, this study was done in 2002 and a timely appraisal is needed to determine how investor sophistication has evolved since then.

3.2.5 Quantitative: Financial Statements

This subsection discusses key research on the numerical accounting information of financial statements. Ascertaining the usefulness of information in financial statements has been subject of some study. Employing mathematical models and a dataset from 1952 to 1994 in USA, Francis and Schipper (1999) found that financial statements had not declined in relevance and the relevance of balance sheet information actually increased during the period of study. However, this paper is based on the assumption of perfect foresight which in reality is not possessed by even the most skilled investors.

Francis, Schipper, and Vincent (2002) reported that the usage of financial statements had not declined but may have even increased despite competing sources of information such as analyst reports. In contrast, Dontoh, Radhakrishnan, and Ronen (2004) showed that financial statements declined in usefulness in the US. In Australia, Brimble and Hodgson (2007) found evidence that the usefulness of financial statements had not declined. Using a dataset from 1973 to 2001, they also reported that balance sheet information was less important in Australia compared to USA.

While very informative, these research papers have a few limitations. One, data used is for the entire market and not segregated for different user groups. Hence, the extent to which findings are applicable for individual investors who generally lack the sophisticated analytical tools of professional and institutional investors is uncertain. Two, usefulness should not be used as a proxy for usage. As discussed in Chapter 2, financial statements are widely acknowledged as useful for stock investment decisions but it does not mean that they are universally used by investors.

While numerous studies examine usage of annual reports among investors, financial statements usage was examined superficially. For example, Johansen and Plenborg (2013) as well as Drake et al. (2016) merely documented the demand for financial statements by investors but did not specify what sort of financial statements (income statement, balance sheet or cash flow statement) were used and the extent of usage. Some researchers examined usage of financial statement information among other groups of users such as financial analysts (for example, Bouwman, Frishkoff, & Frishkoff, 1995). Only a few studies examined in detail the types of financial statements that were used by investors (for instance, De Zoysa & Rudkin, 2010). In an experimental study on a group of 26 individual investors, Lawrence and Keresmar

(1999) found that respondents usage of accounting-based information was limited. Regrettably, some scholars who investigate the pieces of accounting information that users rely on for decision-making either do not study individual investors or employ Master in Business Administration (MBA) students as proxies (Ashton, 2010; Libby et al., 2002; Libby & Lewis, 1982). Furthermore, only a handful of researchers have documented how stock prices are influenced by information in financial statements (such as Chen & Zhang, 2007).

Studies on narratives suggest that readability influences financial statements usage and investment decision-making (Clor-Proell et al., 2014; Lawrence, 2013; Miller, 2010). Therefore, the understandability of the numerical accounting information in financial statements should have a similar influence. However, little research is conducted on how well users, specifically individual investors, understand the numerical accounting information in financial statements. This oversight is especially unfortunate since studies show that financial statements have become increasingly complex with more mandatory disclosure, changes in international accounting standards and new accounting treatments of financial statement items (Daw, Md Isa, & Shaikh, 2013; KPMG, 2011; Morunga & Bradbury, 2010). Yet, little research in accounting is conducted on the extent to which individual investors possess sufficient knowledge to understand and therefore use annual report financial statements. Clearly, a working knowledge of financial statements is needed on the part of readers but it is uncertain if the level of financial knowledge among individual investors matches this requirement. To delve deeper into this issue, we need to examine the literature on financial literacy.

3.3 Financial Literacy

Judging from the lack of accounting studies on how well users understand the numerical accounting information in financial statements, scholars seem to imply that individual investors are somehow accounting experts whose main impediment to a complete understanding of annual reports is the prolixity of the prose. Indeed, the large corpus of literature on the readability of annual reports seems to be based on the assumption that the only prerequisite for understanding annual reports is linguistic proficiency. Granted, some sections of the annual report such as the chairman's statement and the CSR report can be read and understood as pure narratives. However, the ability to understand the numerical accounting information of financial statements and apply them to investment objectives requires another type of literacy. In general, this is defined as financial literacy but more specifically, what is required is financial statement knowledge among individual investors. This section reviews selected studies on financial literacy that are relevant to the study.

3.3.1 Defining Financial Literacy

Despite its emergence as a major area of research in economics and finance, there is still no universal definition of the term "financial literacy" and the various definitions in the literature reflect the disciplines in which financial literacy is examined. Additionally, many researchers use the term financial literacy and financial knowledge interchangeably (such as Bannier & Neubert, 2016; Chung & Park, 2014) while others do not provide a clear definition. For instance, in a literature review of 71 prior studies, Huston (2010) reported that only 13% provided a formal definition of financial literacy. Another 15% provided some explanation of the term but the remaining 72% did not

describe the construct in any way. Interestingly, despite criticising this shortcoming, Huston (2010) did not proffer any definition of the term.

From the various definitions in the literature, a few are discussed here. Servon and Kaestner (2008, p. 273) defined financial literacy nebulously as “a person’s ability to understand and make use of financial concepts”. What constitutes these “financial concepts” was not described. In contrast, to Xu and Zia (2012, p. 2), financial literacy is a broad term that comprises “concepts ranging from financial awareness and knowledge, including of financial products, institutions and concepts, financial skills such as the ability to calculate compound interest payments; and financial capability more generally, in terms of money management and financial planning”. In an equally expansive vein, Beal and Delpachitra (2003) asserted that financial literacy entails individual to not only have the “ability to understand key concepts in money management, a working knowledge of financial institutions, systems and services and a range of analytical skills, but also possess a facilitating attitude to the effective and responsible management of financial affairs” (as cited in Worthington, 2006, p. 5).

To Remund (2010) (as cited in Asaad, 2015, p. 101),

Financial literacy is a measure of the degree to which one understands key financial concepts and possesses the ability and confidence to manage personal finances through appropriate short-term decision-making and sound, long-range financial planning, while mindful of life events and changing economic conditions.

Vitt (2001) (as cited in Tan, Hoe, & Hung, 2011, p. 151) stated that financial literacy requires, “the ability to read, analyze, manage and discuss their personal financial conditions and issues that affect the overall financial well-being”. According to Arora

and Marwaha (2013, p. 242), financial literacy is “the set of skills and knowledge that allows an individual to make informed and effective decisions through their understanding of finances.”

Even for the same researchers, the definition of financial literacy seems to be constantly evolving. For example, Lusardi and Mitchell (2014, p. 6) described financial literacy as “people’s ability to process economic information and make informed decisions about financial planning, wealth accumulation, debt, and pensions”. This differed from their earlier definition of the term as familiarity with “the most basic economic concepts needed to make sensible saving and investment decisions” (Lusardi & Mitchell, 2007) (as cited in Hung, Parker, & Yoong, 2009). Alternatively, Lusardi (2008) regarded financial literacy as “knowledge of basic financial concepts, such as the working of interest compounding, the difference between nominal and real values, and the basics of risk diversification” (Hung et al., 2009).

Apart from scholars, financial literacy has been studied by government agencies and international organisations which have their own definitions of the term. For instance, The JumpStart Coalition (2007) (as cited in Huston, 2010, p. 311), intended to develop financial capability among young adults, defined financial literacy as “the ability to use knowledge and skills to manage financial resources effectively for a lifetime of financial security”. “Financial security” was substituted by “financial well-being” in a virtually identical definition by the US Financial Literacy and Education Commission (2007) (as cited in Huston, 2010). According to the Monetary Authority of Singapore (2005, p. 6), financial literacy is “the ability of individuals to make informed judgments and take effective decisions in managing their finances.”

From these varied definitions, a few major similarities are discerned. Essentially, financial literacy comprises financial knowledge and application of that knowledge when making financial decisions (financial behaviour). Huston (2010) asserted that a definition of financial literacy should comprise knowledge and application dimensions. Other studies included an attitude dimension since attitudes have been demonstrated to play a significant role in influencing financial behaviour (for instance, Alessie et al., 2011; Atkinson & Messy, 2012; Loke, 2016). The Organisation for Economic Co-operation and Development (OECD) definition of financial literacy contains these three dimensions, which is summarised in Figure 3.1 below:

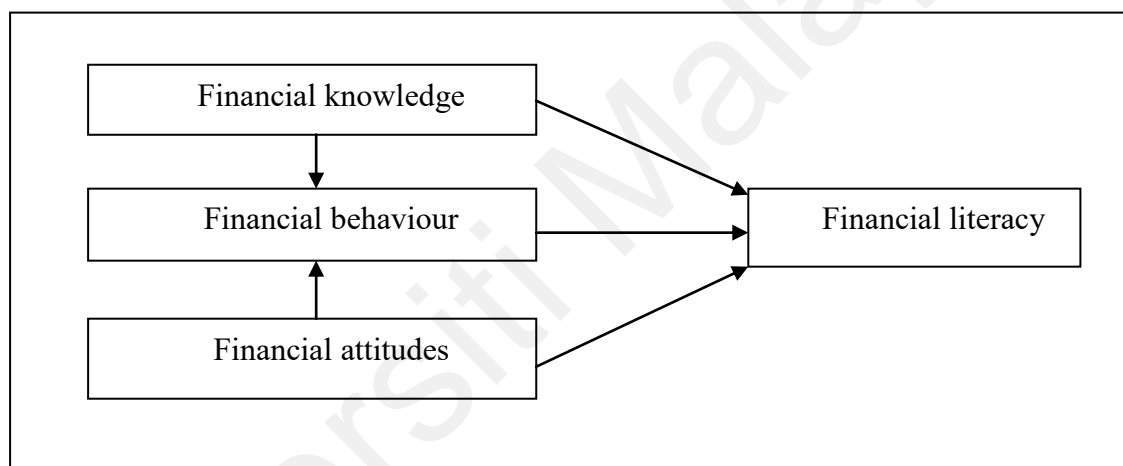


Figure 3.1: OECD Dimensions of Financial Literacy

Here, financial literacy is described as “a combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing” (Atkinson & Messy, 2012, p. 14). Financial knowledge and financial attitudes were regarded as influencing financial behaviour. Due to its comprehensive nature and widespread usage, this definition is adopted for this study which examines the dimensions of financial knowledge, financial attitude and financial behaviour. These dimensions are explained in greater detail in the following paragraphs.

3.3.1.1 Financial Knowledge

According to Bowen (2002), financial knowledge is “an understanding of key financial terms and concepts needed to function daily in American society.” Financial knowledge can also be defined as “some basic knowledge of key financial concepts and the ability to apply numeracy skills in financial situations” (Atkinson & Messy, 2012, p. 16). Even though some researchers (Ali, Rahman, & Bakar, 2015; Lusardi & Mitchell, 2008, 2011, 2014) described it as “financial literacy”, what they were actually measuring was financial knowledge. Huston (2010) defined financial knowledge as the “stock of knowledge acquired through education and/or experience specifically related to essential personal finance concepts and products” and stressed that it is not equivalent to financial literacy.

Delavande, Rohwedder, and Willis (2008) regarded financial knowledge as a finite resource and that the cost of acquiring financial information would be lower for a person with high financial knowledge compared to a person who has low financial knowledge. Furthermore, a person with low financial knowledge has to exert more effort to learn or to gain advice from others.

Some scholars make a further distinction between objective financial knowledge and subjective financial knowledge (Babiarz & Robb, 2014; Hüsser, 2015; Huston, 2010; Tang & Baker, 2016; Wang, 2009). Objective financial knowledge is the actual financial knowledge of an individual based on some objective measure such as multiple choice tests, whereas subjective financial knowledge refers to the perceived level of financial knowledge that the individual thinks he or she has. Hung et al. (2009) assert that objective financial knowledge is a superior method of assessment, because people

tend to think they know more than they actually do. In practice, many researchers examine objective financial knowledge, though they do not refer to it as such (Asaad, 2015; Loke, 2015).

Financial knowledge is sometimes defined and operationalised in a context specific way. For example, Landerretche and Martinez (2013) examined pension financial knowledge (which they termed “literacy”) which is knowledge regarding pension (such as contribution rate, how funds are invested and pension account balance). In contrast, Hüsser (2015) evaluated investors’ knowledge of stocks, bonds and mutual funds in his research on mutual fund investors’ objective financial knowledge. On the other hand, Mahdzan and Victorian (2013) contextualised financial literacy as knowledge and understanding of life insurance in their study on the determinants of life insurance demand.

Many researchers have established a link between financial knowledge and financial behavior (such as Atkinson & Messy, 2012; Loke, 2015). However, others conclude that there is a weak association between these two variables or there is no relationship at all (Loke, 2016; Tang et al., 2015). One explanation could be due to information inaccuracy (Ajzen, Joyce, Sheikh, & Cote, 2011). In numerous studies, the instrument that was used assessed general financial knowledge. However, specific financial behaviours were tested. Hence, there is a mismatch because the knowledge questions should reflect the behaviours that are examined and this shortcoming resulted in weak or non-existent correlations.

3.3.1.2 Financial Attitudes

Numerous studies have documented the influence of attitudes on financial behaviour (Alessie et al., 2011; Atkinson & Messy, 2012; Loke, 2016; Lusardi, Mitchell, & Curto, 2014). What constitutes these attitudes depends on the nature of the study. Ali et al. (2015) examined attitudes towards money among Malaysian adults. Apart from attitudes towards money, Atkinson and Messy (2012) also studied planning for the future in their multinational research for the OECD. Agarwalla et al. (2013) adopted the OECD measures when examining financial attitudes in their study on financial literacy among working urban youths in India. Ibrahim et al. (2009) explored financial attitudes in the context of college students because some items in their scale applied specifically to them (for example, one item was on whether the student would consider dropping out of college).

3.3.1.3 Financial Behaviour

Financial behaviour is a broad spectrum of actions ranging from making loan payments to saving for retirement. Atkinson and Messy (2012) referred to financial behaviour in terms of financial well-being that encompasses saving, budgeting, borrowing to make ends meet and paying bills on time, among others.

Similar to financial knowledge and financial attitudes, the term “financial behaviour” is sometimes defined in a context specific way depending on the nature of the study. For instance, a study by Robb (2011) on credit card usage defined financial behaviour in this context while another by Santos and Abreu (2013) on indebtedness examined financial behaviour in terms of financial distress, arrears and foreclosure.

Therefore, in the context of this study, financial statement literacy consists of financial statement knowledge (financial knowledge), financial statements usage attitude (financial attitudes) and usage of financial statements (financial behaviour).

3.3.2 Measuring Financial Literacy

Having defined financial literacy and its three main elements in the previous subsection, the discussion now turns to how financial literacy is measured. Owing to the absence of a universally accepted definition of financial literacy, there are significant differences in how this is done. For instance, a popular instrument by Lusardi and Mitchell (2011), originally developed for the US Health and Retirement Study (HRS) national surveys tests in 2004, evaluates financial literacy using just three measures, namely compounded interest rates, inflation and risk diversification. Owing to its simplicity, this instrument has been used in many financial literacy studies (including Alessie et al., 2011; Behrman, Mitchell, Soo, & Bravo, 2012; Klapper, Lusardi, & van Oudheusden, 2015).

While useful for a large sample size, the instrument is criticised for being simplistic and failing to capture the full breadth of human capital that is related to personal finance (Huston, 2010). Furthermore, these three questions merely evaluate financial knowledge and not the other elements of financial literacy which are financial attitudes and financial behaviour. Poon and Olen (2015) criticised the inadequacy of financial literacy tests. According to them, many of these tests are insufficient measures of the complexity of new financial products. This is a valid point because, with due respect, the famous three questions to measure financial literacy by Lusardi and Mitchell (2011)

are inadequate to measure the financial knowledge of complex investment products or financial statement literacy.

Nevertheless, more comprehensive measures of financial literacy have been developed. For instance, the instrument developed by the Monetary Authority of Singapore (2005) assessed three levels of financial literacy whereas Tan et al. (2011) as well as Mahdzan and Tabiani (2013) examined basic and advanced financial literacy. In addition to assessing financial knowledge, all three studies evaluated financial behaviour. Even Lusardi (2015) formulated a set of eight questions on advanced financial literacy. While the studies cited in this paragraph assess higher level financial literacy and include questions associated with stock investing, none evaluates financial statement knowledge. This shortcoming is significant because investors who rely on financial statements need to possess such knowledge which is different from general financial knowledge. Yet, financial statement knowledge is still under-researched in the growing body of financial literacy literature.

According to Flyvbjerg (2001, p. 57), *phronesis* “requires an interaction between the general and the concrete, it requires consideration, judgment and choice”. Financial literacy is a type of *phronesis* (Ohlsson, 2012) that comprises both knowledge and application of skills (Huston, 2010; Monetary Authority of Singapore, 2005), so its measurement should combine both aspects. The financial literacy framework by the OECD (Atkinson & Messy, 2012) (shown in Figure 3.1, p. 61) which comprises three elements – financial knowledge, attitudes and financial behaviour is widely used and adapted by other researchers (for example, Agarwalla et al., 2013; Ibrahim et al., 2009; Loke, 2015; Robb & Woodyard, 2011; Santos & Abreu, 2013).

Several measures have been used to evaluate the elements of financial literacy. The most commonly used comprise multiple choice questions, scale questions, true-false questions, yes-no questions and fill in the blank questions. Table 3.2 table summarises the various measures used in studies cited in this section of the literature review.

Table 3.2: Measures Used to Evaluate Financial Literacy

Reference	Objective financial knowledge					Subjective financial knowledge					Financial attitudes					Financial behaviour				
	M	S	T	Y	F	M	S	T	Y	F	M	S	T	Y	F	M	S	T	Y	F
Agarwalla et al. (2013)	*		*									*							*	
Alessie et al. (2011)	*		*																	
Ali et al. (2015)	*		*		*							*					*			
Al-Tamimi and Kalli (2009)			*																	
Arora and Marwaha (2013)		*																		
Asaad (2015)	*		*				*												*	
Atkinson and Messy (2012)	*		*									*					*			
Bannier and Neubert (2016)	*		*				*												*	
Behrman et al. (2012)	*		*																	
Chung and Park (2014)	*																			
Cole, Sampson and Zia (2009)	*		*																	
Forbes and Kara (2010)	*		*				*													
Hancock, Jorgensen and Swanson (2014)	*		*									*					*			*

Table 3.2: Measures Used to Evaluate Financial Literacy (continued)

Reference	Objective financial knowledge					Subjective financial knowledge					Financial attitudes					Financial behaviour				
	M	S	T	Y	F	M	S	T	Y	F	M	S	T	Y	F	M	S	T	Y	F
Hastings and Mitchell (2010)	*		*																	
Heenkenda (2014)	*											*								*
Hüsser (2015)	*																			
Ibrahim et al. (2009)		*										*					*			
Loke (2015)	*		*																	*
Lusardi (2015)	*																			
Lusardi and Mitchell (2014)	*		*																	
Lusardi and Mitchell (2011)	*		*																	
Lusardi et al. (2014)	*		*																	
Monticone (2010)	*	*																		
Robb (2011)	*		*														*			
Sabri and MacDonald (2010)			*																	*
Salleh (2015)	*																			
Tan et al. (2011)	*		*														*			
Tang and Baker (2016)	*	*																		*
Van Rooij et al. (2007)	*		*																	
Volpe, Kotel and Chen (2002)	*																			
Wang (2009)	*		*				*										*			
Worthington (2006)	*	*	*																	
Xia et al. (2014)	*			*			*													*
Yao and Xu (2015)							*													*
Total	29	5	22	1	1	0	6	0	0	0	0	6	0	0	0	1	6	0	9	1

Notes:

M – Multiple choice questions

Y – Yes-no questions

S – Scale questions

F – Fill in the blank questions

T – True-false questions

* – Used in research

As can be seen in Table 3.2, out of the 34 studies listed, 33 assessed objective financial knowledge using one or several methods. Out of this total, 29 studies measured objective financial knowledge using multiple choice questions, while true-false questions were used in 22 studies. Scale questions were only employed in five studies while yes-no and fill in the blank questions were utilised in one study each. Subjective financial knowledge was a less commonly assessed measure as merely six studies examined it and these employed scale questions. As mentioned earlier, objective financial knowledge is regarded as a superior method of assessment compared to subjective financial knowledge and this could account for the lack of research using the latter method.

Furthermore, only six studies examined financial attitudes and these were assessed via scale questions. Financial behaviour was evaluated using scale items in six studies and yes-no questions in nine studies. Hence, it appears that objective financial knowledge via multiple choice questions is the most widely used measure, though in more detailed studies, financial attitudes and financial behaviour are examined using scale questions.

Various methodologies have been used in financial literacy studies. Those which are discussed in this review range from surveys to qualitative research and are summarised in Table 3.3 on the following page:

Table 3.3: Research Methodologies Used in Financial Literacy Studies

Research Methodology	Reference	Country
Survey		
Written self-administered	Al-Tamimi and Kalli (2009)	UAE
	Ali et al. (2015)	Malaysia
	Chung and Park (2014)	USA
	Ibrahim et al. (2009)	Malaysia
	Mahdzan and Tabiani (2013)	Malaysia
	Sabri and MacDonald (2010)	Malaysia
	Tan et al. (2011)	Malaysia
	Wang (2009)	USA
Face-to-face/telephone interview	Arora and Marwaha (2013)	India
	Atkinson and Messy (2012)	14 countries
	Heenkenda (2014)	Sri Lanka
	Monetary Authority of Singapore (2005)	Singapore
	Loke (2015)	Malaysia
	Salleh (2015)	Brunei
	Worthington (2006)	Australia
Online	Alessie et al. (2011)	Netherlands
	Forbes and Kara (2010)	USA
	Hancock et al. (2013)	USA
	Hung et al. (2009)	USA
	Mahdzan and Tabiani (2013)	Malaysia
	Mouna and Jarboui (2015)	Tunisia
	Robb (2011)	USA
	Volpe et al. (2002)	USA
Market research agency	Agarwalla et al. (2013)	India
Secondary data from national survey	Abreu and Mendes (2010)	Portugal
	Asaad (2015)	USA
	Bannier and Neubert (2016)	Germany
	Behrman et al. (2012)	Chile
	Lusardi (2015)	USA
	Lusardi and Mitchell (2014)	USA
	Lusardi et al. (2014)	USA
	Monticone (2010)	Italy
	Tang and Baker (2016)	USA
	van Rooij et al. (2007)	Netherlands
	Xia et al. (2014)	China
	Yao and Xu (2015)	China
Experimental research	Cole et al. (2009)	Indonesia
	Hastings and Mitchell (2010)	Chile
	Hüsser (2015)	Switzerland
	Goda, Manchester, and Sojourner (2012)	USA
Mixed methods	Lusardi, Keller, and Keller (2009)	USA
Qualitative research	O'Neill (2006)	USA

As shown in Table 3.3, the majority of financial literacy studies employed the survey method. These surveys were conducted using written self-administered questionnaires (Al-Tamimi & Kalli, 2009; Ali et al., 2015; Chung & Park, 2014; Ibrahim et al., 2009; Sabri & MacDonald, 2010; Tan et al., 2011; Wang, 2009), face-to-face or telephone interviews (Arora & Marwaha, 2013; Atkinson & Messy, 2012; Loke, 2015; Lusardi & Mitchell, 2011; Salleh, 2015; Worthington, 2006), online (Alessie et al., 2011; Forbes & Kara, 2010; Hancock et al., 2013; Hung et al., 2009; Mouna & Jarboui, 2015; Volpe et al., 2002) or a combination of paper and online (Mahdzan & Tabiani, 2013). The survey data of one study was collected through a market research agency (Agarwalla et al., 2013). Many researchers relied on secondary data of national surveys (Abreu & Mendes, 2010; Asaad, 2015; Bannier & Neubert, 2016; Behrman et al., 2012; Lusardi, 2015; Lusardi & Mitchell, 2014; Monticone, 2010; Tang & Baker, 2016; van Rooij et al., 2007; Xia et al., 2014; Yao & Xu, 2015).

Despite the popularity of the survey method, there were instances where experimental research was conducted (Cole et al., 2009; Hastings & Mitchell, 2010; Hüsser, 2015). In their literature review Atkinson, Messy, Rabinovich, and Yoong (2015), cited studies that conducted field experiments (Goda et al., 2012; Song, 2012), mixed methods (Lusardi et al., 2009) and qualitative research (O'Neill, 2006).

In short, while there are many methods of assessing financial literacy, the most commonly used to solicit responses from a large sample is the survey method. However, care must be taken in selecting an appropriate instrument that matches the research objectives. If the literature does not provide a suitable instrument then the researcher should strive to develop one.

3.3.3 Socio-Demographic and Psychographic Differences in Financial Literacy

There are numerous socio-demographic and psychographic differences in financial literacy. While some researchers note these differences, others assign these factors as antecedents to financial literacy, such as in the case of education level and psychological factors, or employ them as control variables. The main factors that have been subject of study are discussed in detail in this subsection.

3.3.3.1 Age

Ample evidence in the literature suggests that financial literacy is related to age (such as Klapper et al., 2015). As mentioned earlier, Xu and Zia (2012) found that financial literacy follows a reverse U-shaped curve meaning that it increased with age up to a certain point before declining thereafter. This was supported by other studies that found lower financial literacy among those in their 20s and younger (Agarwalla et al., 2013; Ibrahim et al., 2009; Sabri & MacDonald, 2010) and those who were in their 60s and older (Lusardi et al., 2014) compared to those between these age groups.

3.3.3.2 Gender

Gender is another demographic variable in which differences in financial literacy are observed. An overwhelming majority of international studies show that females have lower financial literacy than men (Abreu & Mendes, 2010; Hussein A. Hassan Al-Tamimi & Kalli, 2009; Asaad, 2015; Atkinson & Messy, 2011; Hung et al., 2009; Jappelli & Padula, 2011; Klapper et al., 2015; Lusardi & Mitchell, 2008; van Rooij et

al., 2007; Wang, 2009; Xu & Zia, 2012). Interestingly though, research in Malaysia revealed no significant statistical gender differences in terms of financial literacy (Ali, 2013; Loke, 2015).

3.3.3.3 Ethnicity

Worldwide, researchers have noted that there are disparities in financial literacy based on ethnicity (Asaad, 2015; Atkinson & Messy, 2011; de Clercq & Venter, 2009; Lusardi et al., 2014; Worthington, 2006; Xu & Zia, 2012). Differences are attributed to a combination of factors such as upbringing, education and culture. Even in Malaysia, the Chinese demonstrate higher financial literacy levels than other ethnic groups (Ibrahim et al., 2009; Loke, 2015).

3.3.3.4 Income

Some scholars find evidence that increased income has a significant positive effect on financial literacy (de Clercq & Venter, 2009; Hung et al., 2009; Klapper et al., 2015; Wang, 2009; Worthington, 2006). Stock ownership increases with income according to van Rooij et al. (2007), which is unsurprising since higher disposable income should lead to higher discretionary savings and investments.

While there is a relationship between income level and financial literacy, it is unclear whether higher income contributes to increased financial literacy or vice versa. According to Wang (2009), individuals with higher income are more likely to have higher subjective financial knowledge, though the relationship between income and objective financial knowledge was not statistically significant in her study. Income

level was positively correlated with financial literacy in several studies (Abreu & Mendes, 2010; Agarwalla et al., 2013; Arora & Marwaha, 2013; Atkinson & Messy, 2012; de Clercq & Venter, 2009; Loke, 2015; Xu & Zia, 2012). The findings of a paper by Worthington (2006) suggest that financial literacy may increase with income level.

3.3.3.5 Education Level

One of the most significant antecedents of financial literacy is education level, which is why governments around the world are placing increasing emphasis on financial literacy education. Numerous studies have provided empirical evidence that financial literacy increases with education level (Al-Tamimi & Kalli, 2009; Atkinson & Messy, 2012; Jappelli, 2010; Klapper et al., 2015; Xu & Zia, 2012). Further support is provided by applying the standard model of inter-temporal choice where education was demonstrated to have a strong correlation with financial literacy (Jappelli & Padula, 2011). Trading activity is also higher among individual investors with degrees compared to those without degrees (Liivamägi, 2016). Malaysians who are more highly educated have higher risk tolerance (Duasa & Abdullah Yusof, 2013). Yet, several researchers have reported that high education attainment does not have a significant effect on financial behaviour (Agarwalla et al., 2013; Loke, 2016) and that education level is a crude proxy for financial knowledge.

3.3.3.6 Financial Education

Education level may not be an entirely accurate predictor of financial knowledge, even though it is frequently regarded as such. A more precise measure might be relevant financial education. For instance, Hibbert, Lawrence, and Prakash (2012)

found that finance professors had better management of retirement savings in a defined contribution plan compared to English professors. Even though both groups of individuals had high educational attainments, those with a background in finance exhibited more positive financial behaviour compared to those who had limited knowledge in the field. Similarly, Ibrahim et al. (2009) demonstrated that even university students majoring in business had poor financial literacy.

3.3.3.7 Employment Status

Some researchers have documented how occupation (Worthington, 2006) or employment status (Asaad, 2015; Babiarz & Robb, 2014) affects financial literacy. For example, liberal professionals and non-specialised employees have higher financial knowledge (Abreu & Mendes, 2010). Those who have stable incomes and guaranteed retirement benefits tend to be less financially literate than those who have uncertain incomes (Alessie et al., 2011).

In Malaysia, research indicates that government servants have lower financial literacy because of greater income security. According to Loke (2015, pp. 35-36), “The government pension may have resulted in their being more complacent, with less motivation to build their financial knowledge”. In contrast, Duasa and Abdullah Yusof (2013) found that government servants were more risk adverse, indicating that they are more financially prudent. Unsurprisingly, a study in Brunei indicates that welfare recipients have lower financial literacy than non-welfare recipient (Salleh, 2015), though it is uncertain whether low financial literacy contributed to these households becoming welfare recipients.

3.3.3.8 Marital Status

A study in Portugal revealed that married investors or those in a de facto union had lower financial knowledge (Abreu & Mendes, 2010), though why this was so was not discussed. Marital status was one of the control variables in the study on financial planning and retirement preparedness in the Netherlands by Alessie et al. (2011), though its effects did not appear to be statistically significant.

3.3.3.9 Religion

Alessie et al. (2011) explored the correlation between financial literacy, retirement planning and religion in a pioneering paper. Using an internet survey in the Netherlands in 2010 and comparing data from a 2005 survey in the same country, the researchers found that Catholics thought more about retirement than Protestants and other religious groups. Interestingly, respondents with no religion had higher average scores than those who professed to have a religion. However, there were no significant differences in financial literacy among the different religious groups. In Sabri and MacDonald (2010), religion was included as a socializing agent (together with parent, peers, school, siblings and mass media) in a variable termed “financial socialization” in a study examining saving behaviour and financial problems among college students in Malaysia. As such, the singular effect of religion on financial behaviour is uncertain.

3.3.3.10 Family Background

Our level of financial literacy is to some extent influenced by our family background and upbringing. Research on the financial literacy of teenagers and young adults

typically explores the effects of parents' education level (Grohmann, Kouwenberg, & Menkhoff, 2015; Ibrahim et al., 2009; Sabri & MacDonald, 2010) and family size (Agarwalla et al., 2013; Sabri & MacDonald, 2010). Financial socialisation by parents was found to influence financial attitudes and behaviour of college students (Jorgensen & Savla, 2010) and even working adults (Grohmann et al., 2015). This is in line with Bowen (2002) who found a link between parents' and teens' financial knowledge.

3.3.3.11 Region/Area

According to Xu and Zia (2012), there are wide disparities in financial literacy based on geographical region. Citizens of advanced Western countries have significantly higher financial literacy compared to those in Sub-Saharan Africa. Even within the same country, there are significant differences in financial literacy based on urban or rural regions, for instance. Heenkenda (2014) reported that respondents from urban areas in Sri Lanka had higher financial literacy compared to those from rural and estate areas. Using panel data from 55 countries, Jappelli (2010) found higher economic literacy in urban areas worldwide.

In a study on financial literacy and portfolio diversification in Portugal, Abreu and Mendes (2010) reported that investors in the Porto metropolitan area and in the islands had greater financial knowledge than investors in other areas of the country. In Malaysia, Duasa and Abdullah Yusof (2013) found that people in Kedah, a rural state in northern Peninsular Malaysia, were less willing to take financial risks compared to those from other states.

3.3.3.12 Psychological Factors

Researchers have found evidence that psychological factors affect financial literacy. Tang et al. (2015) examined the influence of two psychological influences, namely self-discipline and thoroughness on the financial behaviour of young adults. They reported a positive association between self-discipline and positive financial behaviour. Self-regulation, whereby individuals exhibit delayed gratification by resisting the temptation to spend in the short term for long term financial well-being was demonstrated to positively influence their likelihood to contribute to a pension plan (Howlett, Kees, & Kemp, 2008).

Norvilitis et al. (2006) found that personality factors such as impulsive tendencies influenced the accumulation of credit card debt among college students. In Malaysia, Nga and Leong (2013) examined the influence of personality traits and demographics on financial decision-making among Malaysians in the Generation Y cohort. From their findings, they argue that personality traits are more significant than demographics.

In short, the influence of socio-demographic factors on financial knowledge and financial behaviour has been studied extensively. Despite some studies on the influence of psychological factors, it is worth noting that psychological factors are a very broad area in which financial literacy researchers have barely scratched the surface. Research on the influence of attitudinal factors on specific types of financial behaviour is still lacking and worth further investigation.

3.3.4 Financial Literacy Worldwide

The discussion will now turn to research documenting financial literacy, first worldwide, next in Asia, then in Southeast Asia and finally in Malaysia. This is done to compare findings in Malaysia with international financial literacy levels.

Two fairly recent major studies document global financial literacy. The first, the S&P Global FinLit Survey (Klapper et al., 2015), comprised over 150, 000 respondents from more than 140 economies. This study used financial knowledge as a proxy of overall financial literacy. It reported that financial illiteracy was endemic with merely 33% of adults being financially literate. Developed countries reported higher financial literacy than emerging economies. There were wide disparities of financial literacy in terms of region, country, gender, age, education level and income. Findings supported an earlier World Bank report by Xu and Zia (2012) which also found differences in terms of ethnicity.

Another study by OECD/INFE (2016) examined a smaller sample size of 30 countries. However, it employed a more holistic assessment of financial literacy that comprised financial knowledge, financial attitudes and financial behaviour. It too found relatively low levels of financial literacy worldwide.

These studies indicate that for high-income countries, there is greater association of financial literacy with sophisticated investment behaviour. There is also a correlation between financial literacy and retirement planning. Mortgages, credit and debt outcomes are also influenced by financial literacy and there might be other macroeconomic effects of financial literacy. Among low-income countries, there is a

correlation between having a bank account and financial literacy. Greater financial literacy influences the purchase of insurance policies.

The following studies are discussed for country-specific financial literacy. These studies are selected because they are more relevant to a Malaysian setting.

3.3.5 Financial Literacy in Asia

Several researchers have documented financial literacy in the Middle East. In an early study, Al-Tamimi and Kalli (2009) found that financial literacy levels were less than satisfactory in the United Arab Emirates (UAE). The most significant drivers for financial literacy there were income level, education level and workplace activity. Mouna and Anis (2013) evaluated financial literacy and decision-making in Tunisia but they only surveyed decision makers in organisations and not individual investors. Even so, they found varying levels of financial literacy among decision makers, indicating that professionals may not be as financially literate as conventionally assumed.

Two studies explored financial literacy in India across different demographic groups. The first, by Cole et al. (2009) of rural households in Gujerat reported abysmally low levels of financial literacy, with merely 34% of respondents answering correctly, compared to 65% in the US. Agarwalla et al. (2013) examined financial literacy of working youths in urban India. They reported that only 24% of respondents had high financial knowledge, well below the average 50% score of respondents in a survey conducted in 13 OECD countries. In China, merely 28% of adults were financially literate (Klapper et al., 2015).

3.3.6 Financial Literacy in Southeast Asia

Closer to Malaysia, a major study on the financial literacy of Singaporeans was commissioned by the Monetary Authority of Singapore (2005). Three tiers of financial literacy were assessed: basic money management, financial planning and investments. Overall, financial literacy on basic money management and financial planning was high. However, respondents' financial literacy regarding investments had room for improvement. Merely 33% of respondents reported having investments. Stocks comprised the largest class of investment products (21%). Out of the 67% of respondents who did not invest, 21% said it was due to insufficient knowledge about investments. Among investors, 57% read monthly statements about their investments and 44% read financial news. Annual report usage by individual investors was not studied. Therefore, even in a developed country like Singapore, sophisticated financial literacy is still low. This paper is significant because it is an early study on financial literacy in the region and its methodology has been adopted by several researchers, for example Al-Tamimi and Kalli (2009).

Indonesia is the most populous nation in Southeast Asia. It is a developing country like Malaysia, with both having similar ethnic and religious compositions, and many Malaysians can trace their ancestry to the Indonesian archipelago. Therefore, the financial literacy of Indonesians is worthy of comparison. A comparative study on India and Indonesia by Cole et al. (2009) mentioned earlier was the first to document financial literacy among households in Indonesia. The researchers found financial literacy to be very low but the sample comprised village households only. A mix of rural and urban households might have yielded different results. Furthermore, the study

evaluated basic financial literacy, such as arithmetic knowledge. More sophisticated areas of financial literacy like knowledge of investments were unexplored.

3.3.7 Financial Literacy in Malaysia

The S&P Global FinLit Survey reported that merely 36% of adult Malaysians were financially literate (Klapper et al., 2015). In an international survey by OECD/INFE (2016), Malaysia ranked 25 out of 30 countries with a below average overall score for financial literacy. Even more troubling is that findings revealed Malaysians tied with the British Virgin Islands in obtaining the lowest average knowledge score. However, an earlier study of 14 countries by Atkinson and Messy (2012) for the OECD showed Malaysia obtaining an above average score on financial literacy. Whether this contrast in performance can be attributed to declining financial literacy or differences in research instrument and an expanded scope is debatable. Nonetheless, low financial literacy should be cause for deep concern by the Government as it leads to a host of negative outcomes that will be elaborated on in subsection 3.3.8.

A study on financial literacy done for Bank Negara Malaysia³⁶ (Ali, 2013) found a correlation between financial literacy and education level, which was similar to findings in other countries. There were no significant differences in financial literacy according to gender and joint financial decision-making was prevalent among married couples. Even though a vast majority of Malaysians claimed to be savers, many were not familiar with the diversification concept, thus indicating that overall financial literacy is not very high. However, the paper was silent on more detailed aspects of financial literacy among Malaysians.

³⁶ The central bank of Malaysia.

A more comprehensive assessment of the financial literacy of Malaysians was made by Tan et al. (2011). They evaluated basic financial literacy using five constructs – numeracy of percentage, numeracy of division, compound interest, time value of money and inflation. The level of basic financial literacy was over 80% for four constructs but only 66% of respondents were familiar with the concept of compound interest. Advanced financial literacy was assessed using function of stock market, knowledge of mutual funds, the relationship between interest rate and bond prices, risk diversification, risk of stocks and bonds, long period return, fluctuations and spread among different assets. More than 50% of respondents understood most constructs but only 33% correctly identified the relationship between interest rate and bond prices whereas only 28% answered the question on long period return correctly.

Findings of the study showed that an overwhelming majority of respondents had high financial literacy, thus contradicting other research papers that reported low levels of financial literacy in developing countries. Even though this is a more detailed study to gauge advanced financial literacy among Malaysians, it suffers from the limitation of being unrepresentative of the actual population of Malaysia. Convenience sampling was employed and respondents were drawn from major urban centres in the Klang Valley such as Petaling Jaya, Subang Jaya and Shah Alam where individuals are normally better educated than in rural areas. Furthermore, the sample did not reflect actual ethnic demographics as 82% of respondents were Chinese and only 14% Malay.

Another study in Malaysia found financial literacy to be a significant driver for retirement planning (Yoong, Beh, & Baronovich, 2012). Individuals with greater financial literacy were reportedly more confident about their retirement plans. Financial literacy and financial learning scales were respectively prepared for a questionnaire

survey but details on the items measured were not provided. Therefore, it is uncertain what areas of financial literacy were evaluated.

If financial literacy is not high among the general public, it should be higher among university students, especially those who are studying business courses. However, university students possessed an equally low level of financial literacy according to Ibrahim et al. (2009). In their research involving a sample of university students from UiTM Kedah, they found very limited financial literacy for the age group 18 to 24 years. Thus, low levels of financial literacy seem endemic across the board.

In short, it can be inferred that general financial literacy in Malaysia and worldwide is not very high. This shortcoming may have serious implications on their financial well-being, especially for individual investors who are the focus of this study. The next subsection discusses why financial literacy is important for our financial well-being including for stock investing.

3.3.8 Importance of Financial Literacy

A growing body of literature explains why financial literacy is important not just to individuals but also nations. At the macro level, there is a positive correlation between high financial literacy and high GDP (Klapper et al., 2015). At an individual level, financial literacy influences the quality of our lives from cradle to grave. Children who are taught financial literacy by their parents grow up to become financially responsible adults (Tang et al., 2015) with as much as 14% higher financial literacy than their peers (Grohmann et al., 2015). College and university students who experience money management problems, low savings and poor financial literacy tend to have financially

illiterate backgrounds (Ibrahim et al., 2009; Sabri & MacDonald, 2010). Good credit card behaviour among college students is positively correlated with high financial knowledge (Norvilitis et al., 2006; Robb, 2011) and parental influence (Hancock et al., 2013).

In adulthood, financial literacy is correlated with a constellation of financial outcomes. One of the primary causes of financial exclusion, a situation where individuals do not access and use financial services such as banking is the lack of financial knowledge (Messy & Monticone, 2016). Adults with low financial literacy have a significantly higher probability of experiencing financial distress (Santos & Abreu, 2013). Individuals with low financial knowledge are more likely to engage in risky and costly financial behaviour, for instance, taking out a loan-title, a short-term payday loan and using a pawnshop (Asaad, 2015). In contrast, high financial literacy is positively correlated with saving behaviour, such as a propensity to have emergency savings (Babiarz & Robb, 2014) and accumulated retirement saving (Hastings & Mitchell, 2010). This is also evident in Malaysia (Mahdzan & Tabiani, 2013). Similarly, several researchers found a strong association between financial literacy and wealth accumulation (Behrman et al., 2012; Jappelli & Padula, 2011) while Monticone (2010) established a link between wealth and financial literacy.

Financial literacy is an important antecedent to financial planning as demonstrated by a number of studies (Ali et al., 2015; Hung et al., 2009; Tan et al., 2011). Furthermore, adults with low financial literacy are less prepared for retirement (Alessie et al., 2011). On the contrary, individuals with higher financial knowledge are more likely to participate in a retirement plan (Howlett et al., 2008). For working adults with defined contribution pension plans, inertia in decision-making is due to financial illiteracy

(Gallery, Newton, & Palm, 2011). Clark, Lusardi, and Mitchell (2014) provided empirical evidence that employees with higher financial knowledge obtained annualised risk adjusted retirement investment returns 130 basis points higher than their peers. A study in Chile found that greater knowledge about the pension system led to more financial savings (Landerretche & Martinez, 2013). In retirement, poor financial literacy causes poor financial decisions (Lusardi et al., 2014). Therefore, if left unaddressed, financial illiteracy contributes to a vicious cycle of financial problems that accrue throughout the individual's lifetime.

At the macro level, policy makers believe that financial literacy is an essential tool to uplift the economic status of citizens (Ohlsson, 2012; Worthington, 2013). This conviction stems from viewing financial literacy as an investment in human capital (to be discussed in more detail in Chapter 4). Increasingly, international bodies, governments and economists are of the opinion that higher financial literacy will help address and possibly overcome a slew of socio-economic issues, which include financial exclusion faced by the lower classes, reducing income disparities, as well as helping the public cope with increased cost of living and retirement funding. A working paper for the OCED by Messy and Monticone (2016) discussed the initiatives taken by countries in Asia and the Pacific in increasing the financial literacy of their respective citizens, thus underscoring the importance placed on financial literacy. In Malaysia, the Financial Service Blueprint (2011 – 2020) highlights financial literacy as a vital element of financial inclusion (Bank Negara Malaysia, 2011). The Blueprint also recommends promoting financial education³⁷ for youths and adults which is aimed among others, to

³⁷ Financial education is defined by the OECD (2005, p. 26) as –the process by which financial consumers/investors improve their understanding of financial products and concepts and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being”.

reduce the number of youths facing financial problems and address the issue of household indebtedness.

3.3.9 Financial Literacy of Individual Investors

Financial literacy is relevant to investing and the financial literacy of individual investors has been subject of some study. For example, van Rooij et al. (2007) demonstrated that stock market participation or the lack thereof was influenced by financial literacy. A mathematical model of this phenomenon was formulated by Spataro and Corsini (2013). Financial literacy was also found to influence portfolio diversification in several studies (Abreu & Mendes, 2010; Mouna & Jarboui, 2015; Xia et al., 2014; Yao & Xu, 2015). Some researchers also examined higher level financial literacy that are relevant to stock investing such as knowledge of the stock market and portfolio diversification (Arora & Marwaha, 2013; Lusardi, 2015).

As discussed in Sections 3.2.3 and 3.2.4 of this review, prose and images can be manipulated by firms for impression management strategies and novice investors are the most vulnerable to such duplicity. Disturbingly, research shows that there is a moderate level of divergence between the accounting information and narratives (Batala & Breton, 2005). Therefore, investors need to be able to corroborate the information provided in the non-financial sections of the annual report with the financial information to be able to detect any discrepancies. To do so, investors need adequate knowledge to read and understand financial statements. In other words, they require sufficient financial statement knowledge.

Additionally, financial statement knowledge is needed for investors who wish to perform financial statement analysis as part of their due diligence. There are many gradations of financial statement analysis ranging from simple ratio analysis to fundamental analysis. More on fundamental analysis will be explained in a later section.

A nascent area of study is the financial statement literacy of individual investors. Callen et al. (2016, p. 573) defined financial statement literate investors as “investors who make judicious use of financial statement for their investment decisions”. They showed how financial statement literacy influences return expectations of investors. However, the authors merely examined usage of cash flow statements and drew inferences from secondary data. Other studies explored related areas. For example, Yu, Li, Tian, and Zhang (2013) investigated the effects of aggressive financial reporting on increasing small traders “noise”. Therefore, further research using primary data is warranted to examine the extent to which financial statement knowledge influences financial statements usage.

3.4 Individual Investor Behaviour

Using financial statements for investment decision-making constitutes a type of investor behaviour. Therefore, this section critically discusses relevant research on the subject.

3.4.1 Reasons for Studying Individual Investors

This subsection explains the need for studying individual investors in our era dominated by institutional investors. Indeed, the proliferation of institutional investors is a global phenomenon. Institutional investors, mainly consisting of pension funds, mutual funds and sovereign wealth funds, have been increasingly aggressive in the past decade or so in acquiring significant stakes in corporations. In the US, institutional investors comprise over 70% of shareholdings in top 1,000 companies (Heineman & Davis, 2011). In contrast, individual investors account for merely 26%, 10% and 18% of total shareholdings in the US, UK and Japan respectively (Çelik & Isaksson, 2014). Similar trends are observed in many other countries, including Malaysia.

The phenomenon of growing institutional ownership has been studied extensively. Research in this area generally revolves around the merits and pitfalls of having a higher concentration of institutional investors in terms of corporate governance, stock price volatility and the effect on the economy. What is given less attention is the study of individual investors. Indeed, as Wood and Zaichkowsky (2004) (as cited in Pandit & Yeoh, 2014, p. 131) noted, “there is a dearth of empirical research on individual investors (especially in developing capital markets)”.

Major blue chip stock corporations generally have high concentrations of institutional ownership but for many smaller companies that do not fall under the radar of institutional investors, individual investors comprise a significant portion of shareholders apart from managerial and family ownership. Hence, individual investors represent a significant group of shareholders (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000). In such situations, the actions of individual investors exert greater

influence on stock prices (Barber, Odean, & Zhu, 2009; Brahma, Hooy, & Ahmad, 2012, 2014b). Also, as Davis (2009) pointed out, individual investors provide liquidity to capital markets and they incentivise informed traders to align stock prices to fundamental values, therefore contributing to an efficient market. Hence, individual investors are worthy of research.

Furthermore, individual investor participation accounts for over 20% of the trading volume on Bursa Malaysia, indicating that the demise of individual investors has been greatly exaggerated. This is seen in the following table:

Table 3.4: Trading Volume on Bursa Malaysia by Individual Investors

Year	2011	2012	2013	2014	2015
Trading volume by individual investors (%)	26	23	22	26	23

Source: Bursa Malaysia (2016a)

Generally, the percentage of individual investors trading showed an overall downward trend from 2011 to 2013. Yet, the trading volume by individual investors actually increased from 2013 to 2014, prompting Bursa Malaysia (2015) to regard individual investors as “key drivers of growth”. Bursa’s efforts to court individual investors underscore the importance of this investor category, notwithstanding their relatively lower levels of shareholdings. A sizeable number of individual investors are essential to create a robust equities market.

As a class of investors, individuals comprise a group that is worth closer scrutiny. Evidence showing that individual investors generally underperform (for example, Barber & Odean, 2013) has not deterred individuals from investing directly in equities. Understanding who these people are, their background, their motivations and how they

reach investment decisions and more is what compels scholars to study individual investors. Individual investors in Malaysia make a fascinating group to study because Malaysia is a developing country with a multicultural society. Therefore, it provides demographic diversity and serves as a microcosm of individual investors in Asia.

3.4.2 Investor Decision-Making Theories

Numerous theories have been developed explaining human behaviour. Some have been adapted to describe individual investor decision-making. Of particular interest to scholars who study individual investors is how they make investment decisions, the types and nature of information they rely on for investment decision-making, among others. Hence, a theoretical underpinning is vital for their mode of enquiry, which is why a brief discussion of these theories is needed. Altman (2012) classified decision-making theories into three categories namely conventional economic theory, errors and biases approach to behavioural economics and bounded rationality approach to behavioural economics. In this study, these theories are classified as the neoclassical viewpoint and behavioural viewpoint.

3.4.2.1 Neoclassical Viewpoint

Before the emergence of behavioural theories, the standard mode of explaining investor decision-making was and is still through the prism of rationality. This viewpoint and its related theories are widely used by researchers because they offer a more stable framework for explaining human behaviour.

The neoclassical viewpoint is that individuals are rational decision makers or *homo economicus*. Accordingly, investors behave in a rational manner to maximise their utility (Oehler et al., 2014). Utility in this context refers to the psychological value we attach to money (Kahneman, 2012). This viewpoint has been widely adopted in economics, finance and accounting. A guiding principle of utility theory is that investors make rational decisions based on their utility (Kumar & Goyal, 2015) and are risk averse (Kahneman, 2012). According to Clark-Murphy and Soutar (2004), a rational investor is expected to choose an investment based on the level of risk they are willing to tolerate and the rate of return of the investment compared to other investments with similar profiles. In the case of two investments with identical risk, the rational investor would pick the investment with a higher rate of return.

Modern finance is built on the foundation of investor rationality, beginning with the portfolio theory of Markowitz (1952). Other major financial theories that are based on the assumption of investor utility are capital asset pricing model (CAPM), the efficient market hypothesis (EMH) and arbitrage pricing theory (APT), to name a few. Similarly, modern financial reporting rests on the assumption that investors are rational decision-makers who rely on financial statements to estimate future cash flows of a firm and the intrinsic value of its stock (Pelger, 2016; White & Hanson, 2002).

However, this viewpoint suffers from its simplistic approach in determining future outcomes. In reality, we can never predict all (or sometimes not even a few) outcomes of an unknowable future with infinite possibilities. This type of uncertainty, which King (2016, p. 9) defined as radical uncertainty is, “uncertainty so profound that it is impossible to represent the future in terms of a knowable and exhaustive list of outcomes to which we can attach probabilities”. The absence of a reference point upon

which individuals anchor their expected utility is another limitation that is criticised (for instance, Kahneman, 2012).

3.4.2.2 Behavioural Viewpoint

Market anomalies and stock market bubbles are phenomena that cannot be adequately explained using neoclassical rational behaviour theories (Coleman, 2014). Hence, a new viewpoint emerged that regards investors as either not always rational, have bounded rationality or are irrational. This gave rise to various theories derived from a multiplicity of disciplines such as psychology, sociology and organisational behaviour, which are used to explain among others, investor decision-making.

One such theory is prospect theory. Developed by Kahneman and Tversky (1979), it has emerged as one of the most popular behavioural theories in economics and finance (Abdellaoui, Bleichrodt, & Kammoun, 2013; De Giorgi & Hens, 2006; Kothiyal, Spinu, & Wakker, 2014). Prospect theory does not assume people are irrational *per se*. Rather, it regards them as “not well described by the rational-agent model” (Kahneman, 2012, p. 411). Prospect theory arose as a response to the weaknesses of the utility model for decision-making and regards decision-making under risk as “a choice between prospects or gambles” (Kahneman & Tversky, 1979, p. 263). It is essentially a mathematical model with two distinct phases. The first phase is framing. Here, the decision maker orders the outcomes based on certain heuristics and biases. A reference point is selected from which other outcomes are compared. Lesser outcomes are regarded as losses whereas greater outcomes are considered gains. In the second phase termed valuation, the decision maker compares these outcomes based on their utility and reaches a decision.

However, the model could not explain certain anomalies such as framing effect, nonlinear preferences, source dependence, risk seeking behaviour and loss aversion behaviour (Tversky & Kahneman, 1992). To overcome these weaknesses and add intellectual robustness, Tversky and Kahneman (1992) subsequently updated the prospect theory model to include cumulative decision weights, which they dubbed cumulative prospect theory.

Prospect theory is widely used in economics, finance and accounting. Yet, it has its limitations (Nwogugu, 2005). Not all individuals think of investment decision-making as a type of “gamble”. Some individuals invest based on other motives instead of wealth maximisation alone. For instance, among faith-based investors, investment decisions are largely based on other considerations such as whether a company complies with Shariah principles (Rashid, Hassan, & Yein, 2014) and is not engaged in sinful activities (Liston & Soydemir, 2010). Similarly, ethical investors refrain from investing in tobacco companies or firms that perform animal testing because it is against their moral compass, even though such companies may provide higher returns (Glac, 2009; Watson, 2011). Hence, prospect theory is inappropriate for explaining the behaviour of these types of investors.

Heuristics and biases are elements in prospect theory (Kahneman, 2012; Kahneman & Tversky, 1979) but they are also used in cognitive factor theory. Cognitive factors are often used to distinguish decision-making between novices and experts (Anandarajan, Kleinman, & Palmon, 2008). Heuristics can be defined as “mental rules of thumb that permit us to make decisions and judgments in a rapid and efficient

manner”(Baron, 1998, p. 267). Kahneman and Tversky (1974) identified three types of heuristics – representativeness, availability, anchoring and adjustment.

Representativeness refers to a mental rule of thumb when an event or object resembles typical examples of some concept or category, it is assumed to more likely belong to that concept or category. Availability heuristics occur when the importance or probability of various events is judged on how readily they spring to mind. Anchoring and adjustment takes place when existing information is accepted as a reference point but then adjusted in view of several factors.

Several other heuristics have been identified by subsequent researchers. For instance, Anandarajan et al. (2008) listed these additional heuristics as memory matching, affective heuristics, perceptual clarity, schemata. Memory matching occurs when the individual links current facts to their pre-existing mental representations to make a decision. Affective heuristics, such as psychological defensiveness, have negative effects on decision-making because they inhibit the ability of the individual to learn more about something that would assist in decision-making. Similarly, perceptual clarity is less evident in novices who are unable to perceive the information as it is. Schemata or mental models between novices and experts are different, with experts having a deeper understanding of a situation.

Venkatraman, Payne, and Huettel (2014) identified an additional heuristic that is used to maximise the overall probability of winning when individuals are faced with risky choices. However, such a heuristic is only relevant when there are at least three outcomes with two or more outcomes having the same sign and the other with an opposite sign.

“Bias” in the context of investment decision-making can be described as “a systematic deviation from the norm, or an inclination for a particular judgment” (Sahi & Arora, 2012, p. 9). In their study, Sahi and Arora (2012) identified several individual investor biases. These include reliance on expert bias, overconfidence bias, self-control bias, socially responsible investing bias, budgeting tendency and spouse effect. Other types of biases comprise selective perception and confirmation bias, frequency/illusory correlation and the law of small numbers and halo effect (Anandarajan et al., 2008).

Heuristics and biases are more prevalent among novices compared to experts (Anandarajan et al., 2008; Barber & Odean, 2013; Sahi & Arora, 2012). Therefore, it is possible that individual investors who are less financially literate and are unable to comprehend financial statements would rely on heuristics and biases instead of information in annual reports when making investment decisions.

Another school of thought regards individuals as “rational behaviouralists”. What this means is that individuals are largely rational decision-makers but when faced with uncertainty, they rely on shortcuts such as heuristics and biases (Altman, 2012; Simon, 1978). Research in healthcare, business and law have shown that relying on simple heuristics often yield more accurate judgements than relying on all available information, especially when such information is limited (Gigerenzer & Gaissmaier, 2011).

3.4.2.3 Limitations of Behavioural Viewpoint

While they are useful in explaining some types of investor behaviour, some theories that adopt the behavioural viewpoint suffer from the assumption that individuals are

intrinsically irrational. This poses valid questions of what sort of behaviour is deemed “irrational”, why so and by whom? Also, irrationality has the connotation that individuals are gamblers who make bad decisions, which is not always true. Furthermore, as King (2016) pointed out, this viewpoint may give rise to situations where government intervention is deemed necessary to correct behavioural shortcomings or to guide individuals in achieving optimal outcomes, and the elitist view that governments are more rational than the electorate.

3.4.2.4 Emerging Views

Neoclassical and behavioural theories are opposite viewpoints with regards to investor behaviour. King (2016) suggested a middle ground. He argued that, “Individuals are not compelled to be driven by impulses, but nor are they living in a world for which there is a single optimising solution to each problem” (King, 2016, p. 134). Therefore, he proposed a coping strategy that consists of three elements. The first is categorising problems into those that can be solved through optimising behaviour and those that cannot. The second element comprises heuristics that help the individual cope with the aforementioned problems. The final element is what King (2016, p. 136) termed as narrative and refers to “a story that integrates the most important pieces of information in order to provide a basis for choosing the heuristic and the motive for the decision.” This coping strategy is an interesting proposition which integrates several theories. However, it is not yet empirically tested.

3.4.2.5 Why Investor Rationality Matters for Financial Statements Usage

As mentioned earlier, the concept of investor rationality is intrinsically linked to the fundamental purpose of financial reporting. If we regard investors as rational, then we believe that they make investment decisions based on their expected utility through careful due diligence. Hence, they require information that allows them to make rational investment decisions and are therefore reliant on financial statements usage. In contrast, if we assume investors are irrational decision-makers, then they would be more reliant on their feelings and emotions when making investment decisions rather than cold hard facts. Therefore, their reliance on financial statements usage would be limited. It is likely that most investors fall in the middle of these two extreme ranges of the spectrum, which is why further investigation is needed on factors that influence their financial statements usage. The above discussion also provided some theoretical background to the behavioural shortcomings of individual investors, which will be explained in the following subsection.

3.4.3 Individual Investor Behavioural Shortcomings

In “The General Theory of Employment, Interest, and Money”, Keynes (1936)³⁸ famously wrote:

Even apart from the instability due to speculation, there is the instability due to the characteristic of human nature that a large proportion of our positive activities depend on spontaneous optimism rather than on a mathematical expectation, whether moral or hedonistic or economic. Most, probably, of our decisions to do something positive, the full consequences of which will be

³⁸ Apart from being a famous economist, Keynes was much respected as a stock investor and wrote authoritatively on the subject. However, his actual performance as an investor was mixed (Chambers, Dimson, & Foo, 2015).

drawn out over many days to come, can only be taken as a result of *animal spirits*—of a spontaneous urge to action rather than inaction, and not as the outcome of a weighted average of quantitative benefits multiplied by quantitative probabilities. [Emphasis added]

“Animal spirits” aptly describes the attributes of many individual investors who act in a manner that is at variance with what is termed “rational behaviour” posited by EMH and portfolio theory. Many behavioural academics and practitioners portray individual investors as unsophisticated hoi polloi who create ‘noise’ in the marketplace. Indeed, researchers demonstrate that individual investors possess many behavioural shortcomings that adversely affect their investments. This subsection describes research on some of these shortcomings which are relevant to financial statements usage.

3.4.3.1 Underperformance

While individual investors enter the stock market with dreams of immense wealth, the eventual performance of most of them speaks otherwise. Empirical evidence by researchers showed that individual investors generally underperform standard benchmarks (Barber & Odean, 2000; Graham & Zweig, 2006; Kumar & Lim, 2008). This phenomenon is due to a combination of many factors such as financial illiteracy, poor investment strategy and behavioural shortcomings.

3.4.3.2 Overtrading

Even though intelligent investing entails holding on to good investments for the long haul, many individual investors have the misguided belief that they can somehow beat

the market and therefore overtrade (Graham & Zweig, 2006). Indeed, studies using trading data showed that overtrading, with its resulting losses, is prevalent among individual investors (Barber, Lee, Liu, & Odean, 2009; Barber & Odean, 2000). Overtrading is detrimental to the economy because it increases stock market volatility (Dichev, Huang, & Zhou, 2014; Garling, Kirchler, Lewis, & van Raaij, 2009).

3.4.3.3 Overconfidence

Overconfident investors can be described as those who overestimate their investment skills (Abreu & Mendes, 2012) or are overconfident about the quality of their private information (Kumar, 2009a). Studies indicate that overconfidence is widespread among individual investors (Barber & Odean, 2000, 2013) and is more commonplace among men (Jacobsen, Lee, & Marquering, 2008; Jacobsen, Lee, Marquering, & Zhang, 2014). A survey on retail investors in Portugal by Abreu and Mendes (2012) revealed that overconfidence led to more frequent trading. Also, investment in information led to increased trading behaviour.

3.4.3.4 Disposition Effect

Shefin and Statman (1985, as cited in Barber & Odean, 2008) postulated that individual investors have a tendency to sell their winning shares while holding on to losers. This is referred to as the disposition effect. Such behaviour leads to long term wealth destruction because investors hold on to losing stocks which continue to underperform while winning stocks that are sold sustain their good performance. Researchers have found ample evidence of the disposition effect (for example, Barber &

Odean, 2000, 2013; Chang, Solomon, & Westerfield, 2016; Prosad, Kapoor, & Sengupta, 2015).

Various explanations have been developed to explain this phenomenon, largely from the prism of prospect theory. Based on survey evidence and experiments, Fogel and Berry (2006) found that regret played a central role in disposition behaviour. Loss aversion was evident as 51% of respondents reported that sell decisions were more difficult than buy decisions. While Barberis and Xiong (2009) claimed a realised gain/loss model derived from prospect theory explains the disposition effect mathematically, Hens and Vlcek (2011) argued (also through mathematical equations) that prospect theory cannot explain the disposition effect for reasonable parameter values.

Kumar and Lim (2008) attributed the disposition effect to how individuals frame their investment decisions³⁹. However, Kumar (2009a) subsequently suggested valuation uncertainty contributes to the disposition effect. Investors with tracking behaviour may hold on to the stock believing that mean revisions are likely whereas those with gambling tendencies wait for desired payoffs. Overconfident investors would be unwilling to admit losses and continue holding on to poor performing stocks. Aspara and Hoffmann (2015) described the disposition effect via goal systems theory⁴⁰. They posited that investors perceive selling winners as progress towards realizing financial returns from the stocks while losers are regarded as a lack of progress that require more effort, hence they continue holding on to them.

³⁹ A decision frame is defined as "the decision-maker's conception of the acts, outcomes, and contingencies associated with a particular choice" (Tversky and Kahneman, 1981) (as cited in Kumar & Lim, 2008).

⁴⁰ The theory regards goals as mental representations and explains how these goals are initiated, pursued, accomplished and controlled. When progress is made, a sense of accomplishment is felt and the individual feels that less effort is needed to achieve it. In contrast, lack of progress evokes negative feelings and the individual endeavours to reduce them by expending more effort (Aspara & Hoffmann, 2015).

A study by Ben-David and Hirshleifer (2012) showed the contrary. By examining a large dataset of 77, 037 accounts at a large discount broker, they found evidence that investor preferences and beliefs influenced trading. Investors with short holding periods had a tendency to sell big loser and hold on to small losers. More interestingly, they found little evidence that US investors tended to realise winning stocks and hold on to losers, a contradiction of the presumptions of the disposition effect. Also, they postulated that feelings are significant drivers in trading behaviour. Similarly, Kong, Bai, and Wang (2015) found that market momentum in China was not driven by the disposition effects, though the authors conceded that this was partly because short-selling was prohibited in the Chinese stock market at that time.

3.4.3.5 Limited Attention

As Barber and Odean (2008, p. 785) noted, “attention is a scarce resource”. Researchers have revealed that individual investors tend to have limited attention (Athanasakou & Simpson, 2016; Barber & Odean, 2013; Hüsser & Wirth, 2014). Hence, they are incapable of processing complex information, such as financial statements, which would otherwise help them make informed investment decisions.

3.4.3.6 Herding

An early and vivid description of investor herding was provided by Keynes (1936, p. 100). According to some researchers, herding occurs when rational individuals behave irrationally by imitating the decision-making judgements of others (Kumar & Goyal, 2015). In contrast, to Posner (2009) (as cited in Altman, 2012), herding is rational since

following individuals who supposedly know more is in the investor's best interest. Research on individual investor herding yields mixed findings. Studies have documented it in the US (Barber et al., 2009; Litimi, BenSaïda, & Bouraoui, 2016) and India (Garg & Gulati, 2013). However, Javaira and Hassan (2015) found no evidence of investor herding in Pakistan, except during the 2005 crisis. Many suggestions have been provided on why investors herd but Keynes (1936) summed it best by writing, "it is better for reputation to fail conventionally than to succeed unconventionally".

3.4.3.7 Behavioural Biases

According to Kumar (2009a), when market uncertainty increased, individual investors in the US demonstrated more pronounced behavioural biases. Chandra and Kumar (2012) found that investors in India made decisions based on heuristics, investment decisions were highly influenced by representativeness and that investors preferred information that was easy to understand. They conclude that Indian investors are prone to psychological biases when making investment decisions, thus supporting theory of irrationality. This position was reinforced by Pandit and Yeoh (2014) who provided evidence that psychological tendencies significantly affected individual equity purchase decisions. Sahi and Arora (2012) identified four main categories of investor bias in India: novice learner, competent confirmer, cautious anticipator and efficient planner.

Another common behavioural bias is mental accounting in which individuals compartmentalise gambling type decisions into separate accounts and ignore the possible interaction between them (Grinblatt & Han, 2005). Mental accounting is

associated with the mistakes investors make via the disposition effect (Kahneman, 2012).

Home bias or local bias occurs when the investor has a preference for companies that are closer to their home (Bailey, Kumar, & Ng, 2011). Keloharju, Knüpfer, and Linnainmaa (2012) observed a variation of this phenomenon where investors had a higher probability of investing in and a lower probability of disposing shares of companies of which they are frequent customers. Home bias is fairly common. It has puzzled scholars because of the clear benefits of international diversification (Kumar & Goyal, 2015). Home bias is sometimes attributed to patriotism (Möhlmann, 2013) though it could be simply due to investors expressing more uncertainty about the unfamiliar.

The left-digit effect (LDE) occurs when the price differential of 1% between two items (for instance RM1.99 versus RM2.00) is perceived differently by individuals because of differences in their left digits. Fraser-Mackenzie, Sung, and Johnson (2015) demonstrated that investors were prone to round number bias, relying on the heuristics of left digit changes than making more effortful valuation decisions. Consequently, there were more buy-sell imbalances on round number investments that decline in value. Interestingly though, individual investors, especially unsophisticated ones, negatively view rounding in analysts' forecast, regarding them weakness on the part of analysts (Athanasakou & Simpson, 2016). Hence, it appears that when individuals have to collect information on their own they resort to rounding but when it comes to paying for information, they are intolerant of such shortcomings.

3.4.4 Investment Decision-Making Behaviour

The previous subsections described some of the behavioural shortcomings of individual investors. Here, their investment decision-making behaviour, including the sources of information they rely on, is discussed. Baker and Haslem (1973) investigated the information need of individual investors in the US. The three most important factors for investors were the future economic outlook of the company, quality of management and industry outlook. Financial factor such as financial strength of the company and growth in EPS were regarded as moderately important. A mere 7.9% of respondents regarded financial statements as their most important source of information. Lease, Lewellen, and Schlarbaum (1974) reported that US investors were more interested in long-term stock appreciation than short-term gains.

Nagy and Obenberger (1994), identified seven categories of factors that influence individual investor behaviour. These factors are neutral information, accounting information, self-image/firm image, classic, social relevance, advocate recommendation and personal financial needs. They found that wealth maximisation criteria were the most significant factors for investor behaviour with financial statements being highly ranked as sources of information for investment decision-making. On the contrary, Lawrence and Kercksmar (1999), investigated the effects of accounting-based, stock market-based and financial analyst-based information and reported that there was no relationship between information usage and the quality of decision-making. They postulated that many assumptions on investor characteristics were baseless.

In Australia, Clark-Murphy and Soutar (2004) showed that the majority of individual investors were long-term investors and refrained from stock speculation. Furthermore,

Clark-Murphy and Soutar (2005) found that Australian investors ranked management, market status and price trend as the three most important factors. Risk-averse investors comprised the largest group of respondents.

Before reaching a decision, investors typically make some form of appraisal on prospective investment. There is extensive research on these investment appraisal methods, a selection of which is discussed here. Studies have demonstrated that individual investors tend to employ a combination of methods when appraising stock investments (Kumar, Mohapatra, & Sandhu, 2013; Lease et al., 1974; Yeoh, 2010). Two approaches which are more analytical are fundamental analysis and technical analysis. However, investors also rely on other appraisal methods such as reliance on the advice of their stockbroker, family and friends or simply by following the crowd. These are discussed in the following paragraphs.

3.4.4.1 Fundamental Analysis

According to Spooner (1984, p. 79) fundamental analysis is defined as –a method of systematically modeling facts – economic and financial statistics, finance ratios *et al.* – in order to derive in a coherent manner an explanation, hence an understanding, of observed phenomena.” In contrast, Lev and Thiagarajan (1993, p. 190) defined it as –aimed at determining the value of corporate securities by key value drivers, such as earnings, risk, growth and competitive position.” Similarly, Abarbanell and Bushee (1998, p. 20) described it as –a practice that relies heavily on the analysis of current and past financial statement data to identify when underlying firm value differs from prevailing market prices.”

The principle underlying fundamental analysis is that the intrinsic value of a security equals the discounted values of its expected future cash flows (Richardson, Sloan, & You, 2012). From empirical findings, financial statements have been found to provide very useful information about future earnings changes and returns (Seng & Hancock, 2012) so investors who engage in fundamental analysis are supposedly reliant on financial statements when making investment decisions.

A seminal paper in support of fundamental analysis is by Lev and Thiagarajan (1993), which has formed the basis of numerous studies including papers recently by Bansal, Strauss, and Nasseh (2015), Bartram and Grinblatt (2015) and Bauman (2014). Lev and Thiagarajan (1993) examined twelve fundamental signals for value relevance. These are information about changes in inventory, accounts receivable, capital expenditure, research and development, gross margin, sales and administrative expenses, provision for doubtful receivables, effective tax rate, order backlog, labour force, last-in-first-out earnings and audit qualification. The researchers found empirical evidence of the value relevance of these signals (except provision for doubtful receivables and research and development) in calculating stock returns.

Another significant paper is by Abarbanell and Bushee (1997) who tested the predictive ability of these signals. They showed that many of these signals were associated with future actual earnings changes. Abarbanell and Bushee (1998) extended this notion in another study by constructing a portfolio based on fundamental analysis and demonstrated that it led to abnormal returns. Other researchers have extended the proposition, including Ng, Tuna, and Verdi (2013), as well as Brown and Whittington (2007).

Many studies have documented fundamental and technical analysis usage by various groups of users. In India, professional brokers rely on fundamental analysis when the length of period forecasted is longer (6 months, one year, more than one year) (Kumar et al., 2013). In Israel, professional and nonprofessional investors use fundamental analysis more extensively in buy/sell decisions compared to technical analysis (Cohen, Kudryavtsev, & Hon-Snir, 2011). According to Lai et al. (2001), fundamental analysis is the most popular appraisal method among institutional investors in Malaysia.

3.4.4.2 Technical Analysis

A classic definition of technical analysis is “the recording of the actual history of trading (including both price movement and the volume of transactions) for one stock or a group of equities, and deducting future trends from this historical analysis” (Levy, 1966, p. 83). While many new innovations have been developed since then to aid technical analysis, the underlying features of the practice remain the same.

The purpose of technical analysis is “to identify regularities in the time series of prices by extracting nonlinear patterns from noisy data” (Lo, Mamaysky, & Wang, 2000, p. 1708). In other words, significant data patterns that emerge can be used to predict future performance of securities. Unlike fundamental analysis that entails reading and analysing financial and non-financial information to ascertain a stock’s intrinsic value which is then compared with its market price to determine if it is worth buying or selling, technical analysis relies on past prices and trading volume to make stock investment decisions. While this research examines technical analysis in the context of stock investing, the method is also employed in foreign currency and

commodities speculation. Investors who adopt technical analysis are known as “chartists”.

Technical analysis is very popular among analysts and investors worldwide. In India, Kumar et al. (2013) found that professional traders relied on technical analysis when making shorter horizon forecasts (intraday, one week and one month).

The performance of investors employing technical analysis is mixed. According to Wang and Sun (2015) 46 out of a total of 81 technical analysis studies involving the stock market found technical analysis to be profitable while 18 reported losses and 17 yielded mixed results. Advocates such as Lo et al. (2000) and Balsara, Chen, and Lin (2007) have asserted that technical analysis is effective. A review paper by Irwin and Park (2007) reported that while many studies found empirical evidence on the predictive ability of technical analysis, they were subjective and context specific. Questions still remain as to whether this is a sustainable long-term strategy.

3.4.4.3 Other Investment Appraisal Methods

Both fundamental analysis and technical analysis require a certain level of sophistication which is more prevalent among professional rather than novice investors. Indeed, many individual investors do not engage in any form of financial statements analysis and they do not monitor historic price movements to make investment decisions (Smith & Harvey, 2011). This is understandable because undertaking fundamental analysis requires high levels of financial knowledge while technical analysis entails a distinct skills set of being able to identify patterns in stock prices and trading volumes. Instead, many investors make investment decisions based on emotions

alone (Barber & Odean, 2013; Chandra & Kumar, 2012; Sahi & Arora, 2012). These unsophisticated investors are prone to the behavioural shortcomings described earlier including psychological heuristics and a tendency towards herding behaviour. Hence, they rely on the advice of others such as their stockbrokers, family and friends (Lease et al., 1974), or follow the crowd (Barber et al., 2009). They also place great importance on stock tips (Ng & Wu, 2010).

While the papers discussed in this subsection directly or indirectly examine financial statements usage among individual investors as part of the information search process or when making investment appraisals, research on factors that influence them to use financial statements for investment decision-making is clearly lacking. Indeed, as will be discussed in the next subsection, there is extensive international research on the factors that influence various aspects of individual behaviour, but little concerning their usage of financial statements for investment decision-making.

3.4.5 Factors Influencing Individual Investor Behaviour

Numerous factors influence individual investors. Since the list is too exhaustive and beyond the scope of this study a summary of relevant research is presented here.

Studies show that demographic factors influence individual behaviour. For instance, Liivamägi (2016) found that higher educational attainment was associated with increased trading activity. Jacobsen et al. (2008) reported that men held on to more risky portfolios compared to women. This phenomenon and higher stock market participation by men may be attributed to greater optimism displayed by men (Jacobsen et al., 2014). Women and older investor seem more prone to the disposition effect

(Tekce, Yılmaz, & Bildik, 2016). The effects of demographic differences are also evident among mutual fund investors (Mishra & Metilda, 2015).

Numerous researchers have documented that moods also affect investor behaviour. An interesting study in the US by Lepori (2015) revealed that even the end of popular television (TV) series influenced investor sentiments and behaviour. Apparently, the conclusion of a popular TV series was emotionally painful event that elicited a negative mood among the general populace that dampened investor demand for risky stocks. He reported that a 20% increase in viewership for a major TV series finale corresponded with a 8(25) basis point decline in US stock returns the next day. Similar observations were noted in stock markets when sporting teams lost international competitions (Edmans, Garcia & Norli, 2007) (as cited in Lepori, 2015) while euphoria is associated with international football matches (Brahmana, 2011).

Just as negative emotions can influence investor behaviour, so does happiness. Merkle, Egan, and Davies (2015) suggested that when individual investors are happy about their past performance, they are likely to trade more frequently. Likewise, herding can be explained as an attempt to reduce unhappiness associated with missing out on investment opportunities.

Researchers have documented returns anomalies in the calendar year. One such phenomenon is known as the Halloween effect where stock performance is higher in winter months compared to summer months (Jacobsen & Visaltanachoti, 2009). A comparable version in the Islamic calendar is referred to as the Ramadan effect and is evident in predominantly Muslim countries such as Pakistan (Halari, Tantisantiwong, Power, & Helliari, 2015). Investor sentiment and trading activities are often affected by

these anomalies. Similarly, superstition affects investors' risk aversion levels on calendar dates that have unlucky connotations (Robiyanto & Puryandani, 2015).

Environmental conditions seem to influence individual investor behaviour. Experimental research by Huang, Zhang, Hui, and Wyer Jr. (2014) showed that being in a warm room led participants to conform to others' stock price forecasts. This suggests that hot weather could precipitate herding behaviour among individual investors. Researchers have also documented the influence of moon phases on individual investor behaviour. Dubbed the "Transylvanian effect", studies in India and China revealed a significant link between the moon phase and stock returns (Brahmana, Hooy, & Ahmad, 2014a).

According to Barnea, Cronqvist, and Siegel (2010), genetic factors may account for approximately a third of stock market participation and investor behaviour. Their findings were based on empirical data of twins in Sweden which showed that these innate attributes were long lasting even when twins rarely interacted or were brought up apart from each other. Cronqvist and Siegel (2014) further reported that as much as 45% of investor biases can be attributed to genetic differences. Nonetheless, these studies reveal that our individual environment, events and experiences play a more significant role in shaping investor behaviour so there is still hope for everybody to become successful investors.

3.4.6 Individual Investor Behaviour in Malaysia

There is some research in Malaysia on individual investor behaviour. Indeed, studies have demonstrated that Malaysian investors share some of the behavioural shortcomings

of their international counterparts. For instance, the disposition effect is evident among initial public offering (IPO) investors (Chong, 2009). A study in Malaysia found that investor irrationality was highest on the hottest day of the week, which is normally Monday (Brahmana et al., 2014b). Brahmana et al. (2012) provided empirical evidence that herding was present among Malaysian investors. Gender differences in preferences for firm characteristics when making investment decisions were observed (Khan, Tan, & Chong, 2016). The “Fransylvanian effect” also appeared to be evident among investors in Malaysia as documented in a time-series quasi-experiment study on individual investors transacting on Bursa Malaysia (Brahmana et al., 2014a). The authors reported that during a full moon phase, investors became more moody and aggressive, and consequently made poor stock trading decisions⁴¹. However, no behavioural shortcomings were observed during a new moon phase. Based on a series of psychometric tests investigating the effects of high temperatures and the full moon on investors’ rationality, Brahmana, Hooy, and Ahmad (2016) conclude that Malaysian investors are quasi-rational since the abovementioned variables affect their behaviour.

Regarding Malaysian investor behaviour in terms of financial statements usage, there seems to be differing viewpoints between quantitative and qualitative studies. In a questionnaire survey, Nik Muhammad and Abdullah (2009) investigated the investment decision-making style of individual investors. According to their findings, Malaysian individual investors were rational and relied on financial statements analysis but there were elements of herding mentality. A subsequent study by Jamal et al. (2014) replicated the study by Nik Muhammad and Abdullah (2009) in East Malaysia (the former study was conducted in the Klang Valley). It too found that Malaysian investors were largely rational and their decision-making style was heavily influenced by

⁴¹ Apparently, the full moon’s gravitational pull elicits hedonistic behaviour (Brahmana et al., 2014a).

financial analysis. Similarly, Lai et al. (2013) reported that Malaysian individual investors were rational decision-makers who exercised self-control. In a case study, Baghdadabad, Tanha, and Halid (2011) identified 13 factors that were most significant for the decision-making of small investors, of which financial statements ranked as the most important.

In contrast, in a qualitative study of six semi-structured interviews, Jaiyeoba and Haron (2016) found that individual investors were more reliant on making investment decisions based on their emotions instead of quantitative analysis. This is somewhat troubling because respondents comprised highly educated lecturers with a background in accounting or finance. However, respondents believed that investment decision-making is improved by a proper understanding of economic and financial settings of Malaysia. It appears that they adopted some aspects of fundamental analysis in which macro fundamentals were considered for investment decision-making but firm level fundamentals such as its financial performance were not. Home bias (described as patriotism in the study) was also present.

The differences between these quantitative and qualitative studies can be explained in the following two ways. Firstly, as with all qualitative research, the findings by Jaiyeoba and Haron (2016) cannot be generalised due to lack of representativeness of the sample. Secondly, as acknowledged by Jamal et al. (2014, p. 320), there could be a tendency for survey respondents to provide socially desirable answers instead of expressing their true feelings. Hence, respondents might not actually rely on financial statement analysis but feel obliged to answer in the affirmative. Indeed, assertions of Malaysian investor rationality by some of these researchers contradicts other studies mentioned earlier that find evidence of irrationality such as the disposition effect,

herding, home bias and a tendency to be influenced by environmental conditions. Perhaps it is best to describe Malaysian individual investors as quasi-rational as per Brahmna et al. (2016). Due to these contradictions, further investigation is needed to obtain a clearer picture of Malaysian individual investor behaviour in relation to financial statements usage.

3.5 Discussion of Research Gaps

The purpose of this chapter was to review relevant literature and to identify research gaps to address in this study. Three streams of literature were reviewed. The first was annual report research particularly on the three elements of narratives, images, and financial statements (quantitative). There is a rich body of studies on narratives in financial accounting, with scholars typically examining the complexity of prose (for example, notes to the financial statements) through the use of reading ease scores. Researchers conclude that the prose of annual reports range from difficult to very difficult to read (Abdul Raman et al., 2012; Mohammad & Abdul Rahman, 2006) and that complexity may have adverse effects on unsophisticated individual investors (Miller, 2010; Tan et al., 2015). While the field is beset with methodological issues such as the lack of consensus on how to measure readability (Stone & Parker, 2013) and arguments that readability is a poor proxy for understandability (Jones & Smith, 2014), in aggregate, these works provide us with an overview of how individual investors understand and use narratives when making investment decisions.

Images are less extensively researched than narratives, but there is a growing corpus of works that illuminate how corporations utilise images for impression management

strategies (Beattie et al., 2008; Bernardi et al., 2002; Kamla & Roberts, 2010) and users' perceptions of graphical images (Dilla et al., 2013; Isa, 2006; Townsend & Kahn, 2013).

The literature on narratives suggests that readability influences financial statements usage. Likewise, the understandability of numeral accounting information should have a similar influence on annual report financial statements usage. However, this subject has not attracted sufficient attention. This is the first gap in the literature that this study seeks to address. Even though numerous researchers have documented financial statements usage by individual investors (such as Johansen & Plenborg, 2013), only a few examined in detail the items in financial statements that are used for investment decision-making (for instance, De Zoysa & Rudkin, 2010), and fewer still on the extent to which users understand the numerical accounting information in financial statements. This omission is regrettable because a clear picture on how well individual investors understand the numerical accounting information in financial statements and are able use it effectively for investment decision-making is still lacking. Unlike narratives which can be measured via readability scores, the numerical accounting information of financial statements does not lend itself to the development of a comparable method of measurement. Hence, it is proposed that instead of measuring the understandability level of financial statements, it would be more appropriate to measure whether users possess the knowledge to understand financial statements. In other words, assessing the financial statement knowledge of individual investors is needed.

Therefore, the second stream of literature reviewed was on financial literacy. While there is a wealth of research conducted in Malaysia (Ibrahim et al., 2009; Loke, 2016; Sabri & MacDonald, 2010; Tan et al., 2011) and worldwide (for instance, Klapper et al., 2015; OECD/INFE, 2016; Xu & Zia, 2012) that gauges financial literacy, most are

confined to evaluating basic financial literacy of the general populace. Even though there are studies on the financial literacy of individual investors, very few examine financial statement literacy and existing papers tend to make inferences from secondary data (such as Callen et al., 2016). To date, a systematic assessment of the financial statement knowledge, attitudes and usage of financial statements for investment decision-making among individual investors based on primary data (such as a survey) is still limited. This is the second gap in the literature addressed in this study.

The third stream of literature reviewed concerned individual investor behaviour. Chapter 2 discussed why financial statements are regarded as essential sources of information for investment decision-making. The literature review revealed that financial statements have value-relevance for stock investment decision-making but their usage among investors is not universal. Yet, there is an extant gap regarding the factors that influence individual investors' annual report financial statements usage. While there are numerous studies that document the reliance on financial statements by individual investors, the former subject does not receive sufficient attention. Furthermore, the level of financial statements usage among Malaysian individual investors is unclear. Interestingly, it seems that unlike individual investors in developed countries (Barber & Odean, 2013) and other developing countries (Chandra & Kumar, 2012; Pandit & Yeoh, 2014; Sahi & Arora, 2012) who are influenced by psychological tendencies, some conclude that Malaysian investors are largely rational and rely on financial analysis when making investment decisions (Jamal et al., 2014; Lai et al., 2013; Nik Muhammad & Abdullah, 2009). However, other studies indicate otherwise (Jaiyeoba & Haron, 2016). Further investigation is needed.

The benefits of financial statements usage are evident. In both accounting and finance literature however, there is a lack of scholarly enquiry on factors that influence some investors to use financial statements while others do not. To ensure widespread usage among individual investors to narrow the information gap between management and them as well as to facilitate optimal stock investment decisions, we need to find out what influences individual investors to use financial statements in the first place. Therefore, it is believed that a critical examination of the knowledge and attitudinal factors that influence Malaysian individual investors' financial statements usage warrants further study.

Examining these knowledge and attitudinal factors will also address the gaps alluded to earlier. In order to effectively rely on financial statements, users must first be able to understand the numerical accounting information in them. To understand this information, they must have adequate financial statement knowledge. Therefore, a critical examination of the financial statement knowledge of individual investors is needed. Since the literature demonstrates that attitudinal factors influence financial behaviour of investors, evaluating these and knowledge factors will partially address the extant gap in literature on financial statement literacy.

3.6 Chapter Summary

This chapter reviewed three streams of literature, namely on annual report research, financial statement literacy and individual investor behaviour. The rationale for this review is to highlight the lack of scholarly research on the factors that influence individual investors' annual report financial statements usage. Addressing these gaps in the literature is pertinent because the onus is increasingly on individuals to make sound

financial decisions, not merely in stock investing but in personal financial planning in general. Additionally, individual investors comprise at least 20% of transactions in Bursa Malaysia so their behaviour impacts the Malaysian stock market. This study seeks to examine the extent to which financial statement knowledge and attitudinal factors influence Malaysian individual investors' annual report financial statements usage. The next chapter discusses the research framework and hypotheses that are developed for this study.

Universiti Malaya

CHAPTER 4: RESEARCH FRAMEWORK AND HYPOTHESES

DEVELOPMENT

4.1 Introduction

This chapter describes the research framework and hypotheses development for the study. The hypotheses aim to answer the research objectives stated in Chapter 1 and narrow the gaps in literature discussed in Chapter 3. The chapter begins with an explanation of the theoretical perspective of this research (Section 4.2) and the theories used (Section 4.3). The theoretical framework is discussed in Section 4.4. Section 4.5 articulates the hypotheses development and the research framework is described in Section 4.6. Section 4.7 provides a summary of the research objectives, research questions and hypotheses, and Section 4.8 is a chapter summary.

4.2 Theoretical Perspective

The choice of theoretical perspective underpinning a research is of paramount importance, so justifications of why certain theories are used for this research are required. The overarching aim of this study is to examine and possibly generalise factors that influence individual investors' annual report financial statements usage. For all intents and purposes, it must therefore adopt a scientific or positivistic theoretical perspective because it is only in this perspective where "scientific" theories are applied to accounting research. Also, it is this perspective that permits the clear articulation of cause and effect relationship between the variables and the careful measurement of objective reality.

An assumption of this study is that individual investors are rational. It is believed that only individuals with “rational”⁴² investor attributes and medium to long holding periods for their equity investments would consistently use annual report financial statements. Making so-called “rational” investment decisions which are grounded in financial statement usage requires a certain level of mathematical logic in addition to sufficiently high financial statement knowledge on the part of the individual. Individuals with speculative tendencies who are swayed more by emotions than numerical accounting information are assumed to be less reliant on financial statements as sources of information to make reasoned decisions on whether to buy or sell stocks. Therefore, the theories that are selected to support this research are based on the principal assumption that investors who use financial statements are rational decision-makers.

4.3 Theories to Support Research

Two theories underpin this study. They are human capital theory and the Theory of Planned Behaviour (TPB). The following sub-sections critically discuss why they were selected.

4.3.1 Human Capital Theory

The OECD defines human capital as “the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being” (Keeley, 2007 p. 29). Human capital theory contends that a

⁴² As the philosopher Ludwig Wittgenstein pointed out in his *Tractatus Logico-Philosophicus*, there are inherent limits to language and these limitations have logical and philosophical implications (Watson, 2010). Hence, in the absence of a more precise word, the term “rational” is used to denote investors with attributes described in the paragraph.

society's well-being is a function of financial capital, natural resources, labour and also the knowledge and skills of individuals who make up that society (Crocker, 2006). This theory has its antecedents in Adam Smith's "The Wealth of Nations"⁴³ (2007). According to Smith (2007), there are two main underlying principles of human capital. One, labour inputs comprise quantitative and qualitative elements, the qualitative being acquired skills and "the state of the skills, dexterity, and judgement with which ... labour is generally applied" (Smith, 2007, p. 4). Two, ability acquired through various means such as education, apprenticeship or study constitutes a capital investment to the individual.

Human capital is formed when an individual sacrifices today's resources for future benefits (Psacharopoulos, 2006). This explains why employees in a competitive labour market are willing to undergo years of education at considerable opportunity cost and training at low wages in lieu of higher wages they expect to earn in future (Becker, 1962).

Knowledge and skills are vital element of human capital and are primarily acquired through education. Hence, education has a special place as a driver of human capital. Indeed, as Smith stated in "The Wealth of Nations" (2007, p.84), "A man educated at the expense of much labor and time...may be compared to one...expensive machine...The work which he learns to perform...over and above the usual wages of common labor, will replace the whole expense of his education." However, it was mainly due to the advocacy of Schulz (1961) and Becker (1962) in the 1960s that education acquired a central role in human capital theory⁴⁴.

⁴³ The Scottish moral philosopher Adam Smith (1723 -1790) is widely regarded as the founder of modern economics and his magnum opus "An Inquiry into the Nature and Causes of the Wealth of Nations" (normally referred to as "The Wealth of Nations") first published in 1776 and consisting of five books outlines the principles of free market economics.

⁴⁴ Both were subsequently awarded the Nobel Prize in Economics; Schultz in 1979 and Becker in 1992.

The role of education vis-à-vis human capital theory is summarised by Little (2002) as follows:

The skills that people acquire are a form of capital, human capital; that these are acquired through deliberate investments in education; that skills are the capacities that contribute to economic production; and that earnings in the labour market are the means by which a person's productivity is rewarded.

In other words, some scholars argue that increased knowledge and skills contribute to better economic outcomes at both individual and societal levels and the primary means of acquiring knowledge and skills is through education (Crocker, 2006). Numerous studies in developed countries (Psacharopoulos, 2006) and developing countries (Rehman, Mahdzan, Trifu, & Bilal, 2014) have supported the assertion that education is a driver of human capital.

For example, researchers found that individuals with more years of formal education (including training) typically earn more throughout their careers than those with less formal education (such as, Bae & Patterson, 2014; Booth & Bryan, 2005; Ciccone & Peri, 2006; van der Merwe, 2010). Furthermore, studies indicate that graduates with better degrees (first and second class) have higher income compared to those with poorer grades (Crocker, 2006). Social welfare improves when investments in preschool and other low levels of education are increased (Psacharopoulos, 2006). These are some reasons why governments invest heavily in education.

Human capital theory rests on several major assumptions (McLean & Kuo, 2014). Two of them are relevant to this study. One, expenses associated with education should be treated as an investment rather than a cost. Two, individuals are rational and make

rational decisions based on utilitarian principles. Thus, the concept of *homo economicus* applies.

The concept of knowledge as an element of human capital has been extended to financial literacy. According to Lusardi and Mitchell (2014), financial knowledge can be regarded as a type of human capital, the investment of which contributes to behaviour associated with greater wealth and prosperity. The authors developed an econometric model describing this relationship.

A pioneering application of human capital theory in financial literacy was by Delavande et al. (2008). They examined variations in financial knowledge and efforts made by the populace in the United States to acquire it. In this study, financial knowledge was theorised as a type of human capital and the acquisition of this knowledge as an investment that accumulates over the individual's life cycle. Financial sophistication was assessed based on knowledge, fluid reasoning ability and effort. The study employed secondary data from the Cognitive Economic Survey and American Life Panel survey. Findings empirically supported the theoretical model.

Building on the work of Delavande et al. (2008), Helppie, Kapinos, and Willis (2010) explored whether individuals who were exposed to financial knowledge on a daily basis due to their occupation would have greater financial knowledge and consequently more wealth accumulation than people who lacked such spillover effects from their job. The authors adopted human capital theory as its framework and utilised secondary data from the Cognitive Economics Study and the Health and Retirement Study (HRS). They found strong evidence that people with occupations in the finance

sector had greater financial knowledge but there was only moderate support that they had higher wealth accumulation.

Subsequent researchers have examined the relationship between financial knowledge and positive financial behaviour using human capital theory. Jappelli and Padula (2011) developed an econometric model that provided empirical evidence linking financial literacy and wealth accumulation. A study involving a Bank of Italy survey by Monticone (2010) on the exogenous effect of wealth on financial knowledge was also based on human capital theory. In contrast to other research that shows financial knowledge to be a driver of wealth, this study demonstrates that wealth has a positive but small effect on financial knowledge.

The research model by Spataro and Corsini (2013) incorporated human capital theory in explaining that stock market participation by individuals was partially due to their financial literacy level. A paper by Clark, Matsukura, and Ogawa (2013) indicated that in Japan, there was a correlation between financial literacy levels, the demand for human capital and on-the-job training programmes among older employees.

There has been some application of human capital theory in accounting research. Franco and Zhou (2009) adopted it when investigating the performance of two groups of sell-side equity analysts. Members of the first group had a Certified Financial Analyst (CFA) designation while those of the second did not. In this experimental study, the researchers found that analysts with CFA designation issued timelier forecasts, thus providing evidence in support of formal CFA education in increasing the human capital of financial analysts. Law (2010) used human capital theory to evaluate the actual gambling outcomes for accountants and found that those with a Certified

Public Accountant (CPA) status had a positive gaming outcome. These two papers underscore the fact that knowledge acquired through formal education in accounting and finance yields positive financial outcomes. Analysts with CFA designations are better at their jobs and this translates into higher income while CPAs seem to be more successful gamblers. Human capital theory also formed the framework in a study on asset allocation and life insurance planning by Chen, Ibbotson, Milevsky, and Zhu (2006).

Collectively, these studies demonstrate that financial knowledge is a type of human capital that helps individuals make better economic decisions related to saving, investing, borrowing, money management, retirement planning and other major financial decisions. Just as an investment in formal education via schooling and university translates into increased employability, investing in a store of financial knowledge through investor education programmes would have a positive impact on the financial well-being of individuals.

While the discussion thus far has focused on knowledge, it must be emphasised that other skills, attributes and competencies contribute to our overall store of human capital. Heckman (2001)⁴⁵ argued that social skills, self-discipline, motivation and non-cognitive skills also determine success in life, but these are under-researched in economics. Similarly, Weiss (1995, p. 140) pointed out that punctuality, perseverance and self-discipline are skills that are valuable for a wide range of jobs. Stock investors who favour financial statements usage would most likely be well served by having self-discipline and thoroughness in addition to high financial statement knowledge. Unfortunately, there is little research on the subject.

⁴⁵ Who was awarded the Nobel Prize in Economics in 2000.

Human capital theory is harnessed in this study because it provides a theoretical foundation explaining the influence of financial statement knowledge (regarded here as a type of human capital) on usage of annual report financial statements (behaviour). Individual investors must invest time, effort and money to acquire financial statement knowledge. Nevertheless, this investment in human capital results in increased financial statements usage among individual investors, which in turn leads to superior investment decisions and long-term wealth maximisation. Additionally, individual investors would benefit from having skills such as self-discipline and thoroughness to undertake financial statements usage.

Admittedly, human capital elements such as financial knowledge do not fully explain financial behaviour. To some extent, this limitation is addressed by the inclusion of attitudes in financial literacy models (for instance, Atkinson & Messy, 2012). The three elements of financial knowledge, financial attitudes and financial behavior can be viewed as a variation of the knowledge, attitudes and practice model (Chatterjee, Bhanot, Frank, Murphy, & Power, 2009; Lund & Aarø, 2004) or the information-motivation-behavioral skills model (Fisher, Fisher, Bryan, & Misovich, 2002; Fisher, Fisher, Williams, & Malloy, 1994), both of which originated in scientific and medical fields.

Attitudes or motivation are broad concepts and the constructs that are derived from them must be fairly detailed and empirically testable. Therefore, the theory of planned behaviour is selected based on its robustness and pliability to complement human capital theory in developing the theoretical framework of this study.

4.3.2 Theory of Planned Behavior (TPB)

Explaining and predicting human behaviour has not only long been a goal of psychologists, but it is also of great interest to researchers in other disciplines. Various theories have been developed, some of which have better explanatory and predictive ability than others. The theory of planned behaviour (TPB) (Ajzen, 1991) is an established theory in the social sciences and is used in a wide range of contexts. In Ajzen's own modest words, it "has, by any objective measure become one of the most frequently cited and influential models for the prediction of human social behaviour" (Ajzen, 2011b, p. 1113)⁴⁶. Indeed, TPB has formed the basis of a wide range of research in various disciplines, including business, accounting and finance.

TPB is an extension of the theory of reasoned action (TRA) by Ajzen and Fishbein (1973). Therefore, some discussion of the TRA is needed to provide a better understanding of TPB. In TRA, actual behaviour is preceded by a person's intention to perform that behaviour. Behavioural intention is determined by two main factors. The first is a person's attitude towards that behaviour, which springs from a person's belief and evaluations. The second factor is termed subjective norm and refers to the normative beliefs and motivation to imitate the behaviour of others who are perceived to be influential to that person. While this theory continues to be used by business and accounting researchers (for example, Amin, 2013; Mohd Yusof & Lai, 2014; Wolf, Weißenberger, Wehner, & Kabst, 2015), it is limited in explaining behaviour over which people have incomplete volitional control (Ajzen, 1991). Therefore, another element called perceived behavioural control was added and some modifications were

⁴⁶ A claim that has been verified by Google Scholar search on March 30, 2018 which shows 55,677 citations of the original 1991 paper by Ajzen. The theory is not just used in the social sciences but in medicine, psychology and sports science, which is evident in the studies from these disciplines cited in this chapter.

made concerning the relationship between the variables. The revised theory was then named the theory of planned behaviour.

The main thrust of this theory is that behaviour can be explained and predicted from a combination of attitudes towards the behaviour, subjective norm and perceived behavioural control. In this context, attitudes are described as “the degree to which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question” (Ajzen, 1991, p. 188). There is a broad range of attitudes that affect the appraisal of behaviour and researchers focus on those that are most relevant to their studies. Subjective norm is “perceived social pressure to perform or not to perform the behaviour” (Ajzen, 1991, p. 188). The influence of family and friends fall under the scope of subjective norm.

According to Ajzen (1991, p. 183), perceived behavioural control means “people’s perception of the ease or difficulty of performing the behaviour of interest.” This refers to the confidence people have in their ability to perform a specific activity and is influenced by past experiences and future expectations. Perceived behavioural control, an exogenous variable, influences behaviour directly and indirectly via intentions (Madden, Ellen, & Ajzen, 1992). The direct effect of perceived behavioural control on actual behaviour is more significant in circumstances when “the behaviour in question is likely to have some aspect not under volitional control and perceptions of control over the behaviour are accurate” (Madden et al., 1992, p. 4).

These three variables mutually influence one another and they affect behavioural intention that affects actual behaviour. Behavioural intention indicates an individual’s readiness to perform a certain action or behaviour. Therefore, intention is the

immediate precursor to actual behaviour. Generally, when a person has favourable attitude and subjective norm as well as higher perceived control, the intention to perform the behaviour is greater (Ajzen, 2011a). In the end, people carry out a specific behaviour when there is a sufficient degree of actual control (Ajzen, 2011a). TPB is represented diagrammatically as follows:

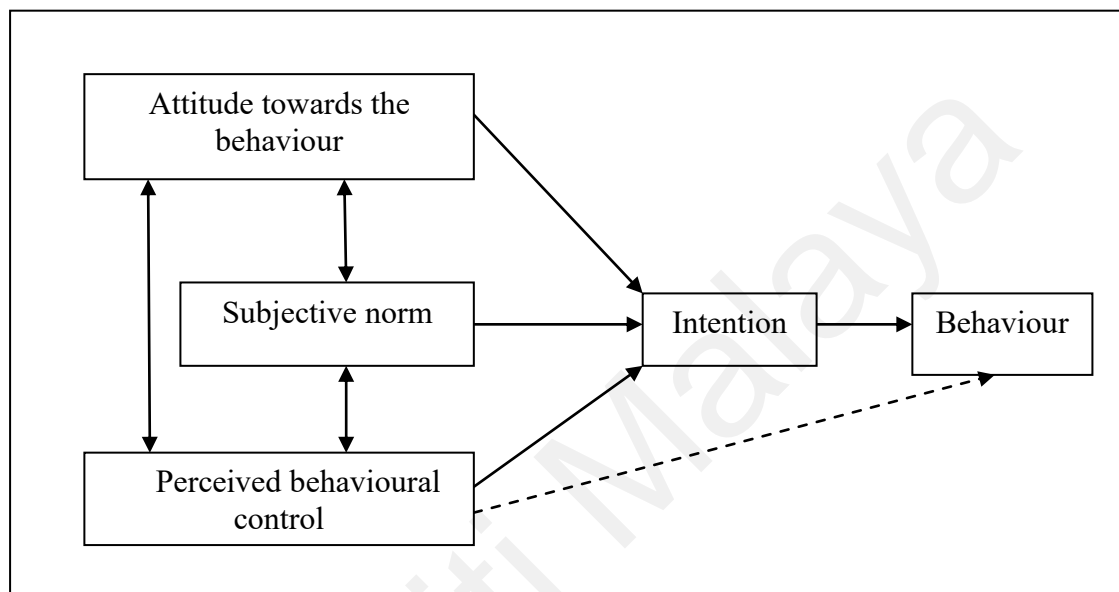


Figure 4.1: Theory of Planned Behaviour

A key assumption in TPB concerns the role played by beliefs (Ajzen, 1991, 2006). The cognitive and affective foundations for attitudes, subjective norm and perceived behavioural control are assumed to be beliefs. Behavioural beliefs influence attitude towards the behaviour whereas normative beliefs impact subjective norm. Meanwhile, control beliefs affect perceived behavioural control.

Another assumption of this theory is that individuals engage in reasoned action. However, this does not imply that individuals necessarily review all information in a systematic and careful manner before intending to perform an action (behaviour) (Ajzen, 2011b, 2014). While cognitive effort is required for more complex decisions such as buying a house, in many day-to-day decisions such as deciding what to eat for

lunch, very little cognitive effort is needed and that in these instances, spontaneous behaviour can occur.

A notable feature of TPB is that it adopts a parsimonious model. The stark simplicity of its model has contributed to its endurance and has enabled the constructs to be applied in a diverse range of contexts. Furthermore, like its predecessor TRA, this theory regards demographic characteristics and personality characteristics as external variables (Ajzen, 1991, 2011b). Nonetheless, the theory is open to new predictor variables (Ajzen, 2014) so long as certain criteria are fulfilled (Ajzen, 2011b).

In accounting research, TPB is applied to a wide range of topics. One of them is in the field of business and professional ethics. Buchan (2005) adopted its theoretical model when investigating the effects of personal, social and organisational factors on ethical decision-making among public accountants. Similarly, Carpenter and Reimers (2005) utilised TPB in their research on corporate managers' financial reporting decisions concerning ethical issues. A content analysis of 39 fraud cases in the US by Cohen, Ding, Lesage, and Stolowy (2010) was based on TPB and the fraud triangle.

Ascertaining the opinions of professionals on various accounting issues has been done through the lens of TPB. One example by Frank and Gianakis (2010) is a survey on the opinions of local government finance officers on the New Reporting Model (NRM) implemented by the Governmental Accounting Standards Board (GASB). Moqbel, Charoensukmongkol, and Bakay (2013) solicited the opinions of US academics and professionals on their preparedness for IFRS and explained the findings through TPB.

Tax issues have been also explained using TPB. For example, Langham, Paulsen, and Härtel (2012) found that in Australia, intention to comply did not necessarily lead to compliance behaviour among small and medium enterprise business owners. Similarly in the US, Bobek and Hatfield (2003) reported that attitudes, subjective norm and perceived behavioural control influenced taxpayers' compliance intentions. In Malaysia, Ramayah, Mohd. Yusoff, Jamaludin, and Ibrahim (2009) examined the attitudes, subjective norm and perceived behavioural control of individual taxpayers who chose to email their tax returns instead of the traditional approach of sending by post.

Management accounting topics, such as budgetary participation and slack can also be explained through the prism of this theory (Su & Ni, 2013). TPB has also been used to explain certain financial behaviours, such as the use of credit cards among households in the United States (Rutherford & DeVaney, 2009).

Several studies in finance and investment have adopted TPB as a theoretical basis to explain why individuals invest in the stock market. The robustness of models developed using this theory indicates that it is suitable for explaining investor behaviour. For instance, Pascual-Ezama et al. (2013) found that the theoretical basis helped explain 63% of investment intentions and 48% of the investment behaviour of Spanish individual investors. In Vietnam, Phan and Zhou (2014) investigated factors that influenced the behaviour of individual investors through the lens of this theory. Sondari and Sudarsono (2015) examined the intention to invest among individual investors in Indonesia. They reported that attitudes and subjective norms were significant predictors of intention to invest.

Despite its widespread usage and acceptance in the social sciences, TPB, just like all other theories, has its weaknesses and limitations, some of which are highlighted here. One of them is that sometimes there are significant variations in the correlation between intention and actual behaviour as demonstrated in several studies (Armitage & Conner, 2001; McEachan, Conner, Taylor, & Lawton, 2011). Furthermore, even in short periods, intentions are sometimes poor predictors of actual behaviour, as indicated in research by Kor and Mullan (2011). This might be due to the capacity of respondents to overcome their natural impulses. For that reason, the usage of intention as a proxy to examine actual behaviour, while common among researchers, is sometimes inappropriate. Intention and actual behaviour are different concepts and should not be used interchangeably. People may intend to do many things, but end up not doing them.

The parsimonious model of this theory has been criticised as a limitation (Sniehotta, Presseau, & Araújo-Soares, 2014). Some of the variables that are deemed significant but omitted in the model are affect and emotions (Sheeran, Gollwitzer, & Bargh, 2013) as well as past behaviour (Kor & Mullan, 2011). Similarly, researchers have found that background factors, omitted in the TPB model, are critical in explaining behaviour (Manning & Bettencourt, 2011).

Ajzen (2011b) has responded to some of these criticism. For example, he stated that affect and emotions influence the constructs in TPB in two ways. One, these are background factors that impact the three types of beliefs (behavioural, normative and control). Two, the behavioural, normative and control beliefs that are easily accessed in our memory are helped by our affective states. Ajzen (2011b) also justified the exclusion of background factors such as demographics, personality type and values. According to him, these factors ~~are~~ are expected to influence intentions behaviour

indirectly by their effects on the theory's more proximal determinants" (Ajzen, 2011b, p. 1123) and therefore do not merit inclusion as main variables. However, he suggested that a few demographic variables may be included as control variables.

Another limitation in application is that the behaviours studied using this theory are normally self-reported. Only in rare instances are actual behaviours directly observed. The reliability of self-reported behavioural intention or actual behaviour is always questionable. Yet, this is a risk researchers have to take due to practical considerations. It is highly challenging to observe actual behaviours in their natural setting while attempting to create a natural setting in a laboratory is virtually impossible for many social science researches. Nonetheless, the fact that the theory largely continues to support empirically testable data attests to its robustness and relevance in social science research.

4.4 Theoretical Framework

The theoretical framework of this study is a fusion of human capital theory and TPB. Numerous researchers have combined two theories in the theoretical framework of their studies such as Lee (2012) who combined EMH and information overload theory and Moqbel et al. (2013) who fused TPB with technology acceptance model. The purpose of using a combination of theories is to complement the strengths of each while minimizing their weaknesses. The following paragraphs explain the theoretical framework of this study.

Human capital theory is an essential underpinning to this study because it explains the relationship between financial knowledge and financial behaviour or outcomes

(Lusardi & Mitchell, 2014). In this study, it is postulated that individual investors with high financial statement knowledge will more regularly and extensively use annual report financial statements. This in turn leads to superior investment decisions that contribute to financial well-being. As mentioned earlier, annual report financial statements knowledge is regarded as a type of human capital that individual investors obtain through formal education or self-education and experience.

Apart from financial statement knowledge, it is postulated that individual investors need to have certain other human capital attributes, namely diligence which is a combination self-discipline and thoroughness to have the patience and tenacity to consistently use annual report financial statements. Due to a lack of research on the subject, this study endeavours to examine the moderating influence of diligence on the relationship between financial statement knowledge and Malaysian individual investors' annual report financial statements usage.

Investor behaviour such as financial statements usage is presumably not influenced by knowledge and diligence alone. Ergo, it is important to examine other predictors such as attitudinal factors. Since human capital theory does not examine the relationship between these other variables, TPB serves a complementary purpose.

As discussed earlier, several studies have used TPB to examine individual investor behaviour with regard to investing in the stock market (Pascual-Ezama et al., 2013; Phan & Zhou, 2014; Sondari & Sudarsono, 2015). Therefore, the variables of this theory can be adapted for this study which examines how attitudes, subjective norm and perceived behavioural control influence a specific type of investor behaviour, namely usage of annual report financial statements by individual investors.

4.4.1 Inclusion of Additional Predictor Variables

Several additional predictor variables are included in this study, namely investment horizon attitude, investing luck attitude and trading attitude. These variables may initially appear unrelated to the TPB model but they are added for several reasons which are discussed as follows.

Firstly, the literature has demonstrated that there is a relationship between investment decision-making behaviour and the extent of financial statements usage. For instance, investors who employ fundamental analysis rely on accounting information in financial statements (Kumar et al., 2013) whereas chartists tend to examine short-term fluctuations in stock prices (Lo et al., 2000) instead using financial statements. Additionally, the literature on investor behaviour shows that individuals tend to make investment decisions based on how long they intend to hold on to their investments (Kaniel, Saar, & Titman, 2008), their perception of investing luck (Aspara & Tikkanen, 2011) and their inclination towards stock speculation or trading (Barber et al., 2009). Therefore, these attitudinal factors which directly influence investment decision-making would also impact financial statements usage as both are inter-related.

Secondly, interviews with ten experienced investors for the development of the questionnaire (discussed in further detail in Subsection 5.7.1 of Chapter 5) supported these inferences or postulations made from the literature. These investors reported that their annual report financial statements usage or the lack thereof was partly influenced by the three variables listed above.

Thirdly, the expert panelists who validated the items for the questionnaire unanimously opined that these variables were appropriate for explaining annual report financial statements usage among individual investors, notwithstanding their relevance to investment decision-making.

Fourthly, the TPB model is amenable to these variables. From the outset, Ajzen (1991) has deliberately left the TPB model open to additional predictor variables. Researchers have responded to this challenge by including several new variables to their research. While in many studies these additional variables are intuitively or directly related to the behaviour examined, others examine variables that initially might seem unrelated to the behaviour, but nonetheless influence it. Below is a summary of a selection of research papers that include these non-conventional additional variables.

Table 4.1: Summary of TPB-related Studies with Additional Predictor Variables

Author(s)	Additional Predictor Variable(s)	Behaviour(s) Examined
Ajzen et al. (2011)	Knowledge of Islam (S) Support for Islam and Muslims (S)	Attending a mosque service
Bobek and Hatfield (2003)	Moral obligation (S)	Taxpayers' compliance intention
Conner and McMillan (1999)	Self identity (S) Habit strength (S)	Cannabis use intention
Gird and Bagraim (2008)	Personality traits (S) Instrumental readiness (S) Social support (N.S.) Exposure to entrepreneurship (S)	Entrepreneurial intent
Johns et al. (2009)	Inconvenience (S) Performance (S) Organizational training (N.S.) Informal exchange of information between drivers (S)	Alternative fuel use
Manning and Bettencourt (2011)	Depression (S)	Medication adherence

Table 4.1: Summary of TPB-related Studies with Additional Predictor Variables (continued)

Author(s)	Additional Predictor Variable(s)	Behaviour(s) Examined
Moser (2015)	Protection of the environment (S) Willingness to pay (S)	Green purchasing behaviour
Lin (2013)	Promotional method (S) Perceived value (S)	High involvement purchasing behaviour
Lheureux et al. (2016)	Habit (S)	Speeding and driving under the influence of alcohol.
Richard, van der Pligt and de Vries (1996)	General affective reactions (S) Anticipated affective reactions (S)	Eating junk food Using soft drugs Drinking alcohol Studying hard
Rivis, Sheeran and Armitage (2011)	Personality (S) Social comparison (S)	Health promoting behaviour

Note:

S - Supported, N. S - Not Supported

For the sake of brevity, the usual predictor variables in TPB namely attitude towards the behaviour, subjective norm and perceived behavioural control are not shown. As can be seen in the preceding table, these non-conventional variables were incorporated by researchers in their model because they had some relevance to the behaviours studied. While a few of these variables were not supported, a majority were, albeit to varying degrees of significance. Nevertheless, these studies illustrate how additional variables are relevant in TPB models for certain behaviours and a failure to include them would instead have a deleterious effect on our understanding of the behaviour. For example, depression is not a TPB predictor but it increases the explanatory power of the model explaining medication adherence when included (Manning & Bettencourt, 2015).

At this juncture, it is stressed that these variables also fulfil the five requirements set out by Fishbein and Ajzen (2010, as cited in Ajzen, 2011b, p. 1119) for inclusion as new variables for the model. One, these variables are possible to define and measure

via scale items. Two, as will be shown in Chapter 6, these variables establish causality with action. Three, these attitudes are conceptually independent from the theory's existing variables. For instance, investment horizon attitude and trading frequency attitudes are distinct from attitude towards financial statements usage. Four, the additional variables proposed can be applicable to other research on stock investor behaviour. Finally, the inclusion of these variables improves the explanatory power of the model, as will be shown in the findings in Chapter 6.

Therefore, the inclusion of three attitudinal variables in the framework, namely investment horizon attitude, investing luck attitude and trading attitude is consistent with this tradition of examining additional predictor variables in the TPB model. More importantly, these variables are added because of their relevance to Research Objective 3 and Research Question 3. More will be discussed on each of these variables in the hypotheses development section.

4.4.2 Omission of Variable for Behavioural Intention

The theoretical framework streamlines TPB by omitting the construct on behavioural intention. This is due to several reasons. Firstly, the study seeks to examine actual behaviour and not intention to perform the behaviour. Therefore, including a variable for intention to perform the behaviour would invariably lead to the inclusion of more items in the questionnaire, thus increasing the incidence of respondent fatigue and possibly lower the response rate.

Secondly, numerous studies have utilised intention as a proxy of actual behaviour (for example, Buchan, 2005; Carpenter & Reimers, 2005; Cohen et al., 2010) with the

purpose of predicting behaviour or because the actual behaviour is sensitive or controversial (such as committing fraud). However, the behaviour examined in this study (usage of annual report financial statements among individual investors) is comparatively straightforward so it can be studied directly.

Thirdly, examining both intention and actual behaviour variables is best done intertemporally whereby intention is studied in the first period and actual behaviour after a suitable length of time has elapsed (Ajzen, 1991). This approach allows the researcher to investigate the extent to which intention translates into actual behaviour. Apart from research considerations, particularly the challenges of obtaining respondents who are willing to participate in what are effectively two surveys, it is believed that since intention is not a variable of interest in this study, it would be more appropriate to directly examine the influence of the independent variables on behaviour.

Fourthly, as discussed in the literature review, financial literacy is assessed through the direct relationships between financial knowledge, financial attitudes and financial behaviour. Including intention to use financial statements for investment decision-making as a mediator may weaken the relationship between these variables, especially that between financial statement knowledge and usage of financial statements, since knowledge is not a predictor of intention as per TPB. Furthermore, even in the TPB model, there is a direct relationship between perceived behavioural control and actual behaviour (Ajzen, 1991).

Finally, there are precedents for excluding behavioural intention in studies that adopt TPB (for instance, Dennis, Buchholtz, & Butts, 2009; George, 2004; Johns, Khovanova, & Welch, 2009; Lin, 2013; Moser, 2015; Warner & Aberg, 2006). In these studies, the

direct influence of the predictor variables on behaviour is examined without behavioural intention as a mediator. Even Ajzen (2011b) admitted that intention sometimes is a poor predictor of behaviour, a shortcoming that was criticised by Sniehotta et al. (2014). For these reasons, the variable for intention to perform behaviour is omitted in this study.

It must be stressed that the behaviour examined in this study is the usage of annual report financial statements and not the actual stock investment decision-making itself. A stock investment decision is made after considering various factors including the risk tolerance of the individual and availability of funds. The ultimate decision-making process itself falls outside the scope of this study. Usage of annual report financial statements is a precursor to the decision made, as are the evaluation of other sources of information, and it is a type of behaviour in itself.

In this regard, the relationship between the two type of behaviour, namely usage of annual report financial statements and the actual investment decision is analogous to studying for an exam and sitting for the exam. Studying for an exam constitutes a behaviour, as is sitting for the exam itself. Also, many stock investment decisions are not final. Investors may subsequently decide to increase their holdings of a security or they may elect to decrease or dispose all their holdings at whatever time and for whatever reason. This study examines the behaviour of using annual report financial statements each time before such decisions are made by Malaysian individual investors. The theoretical framework of this study is shown in Figure 4.2 as follows:

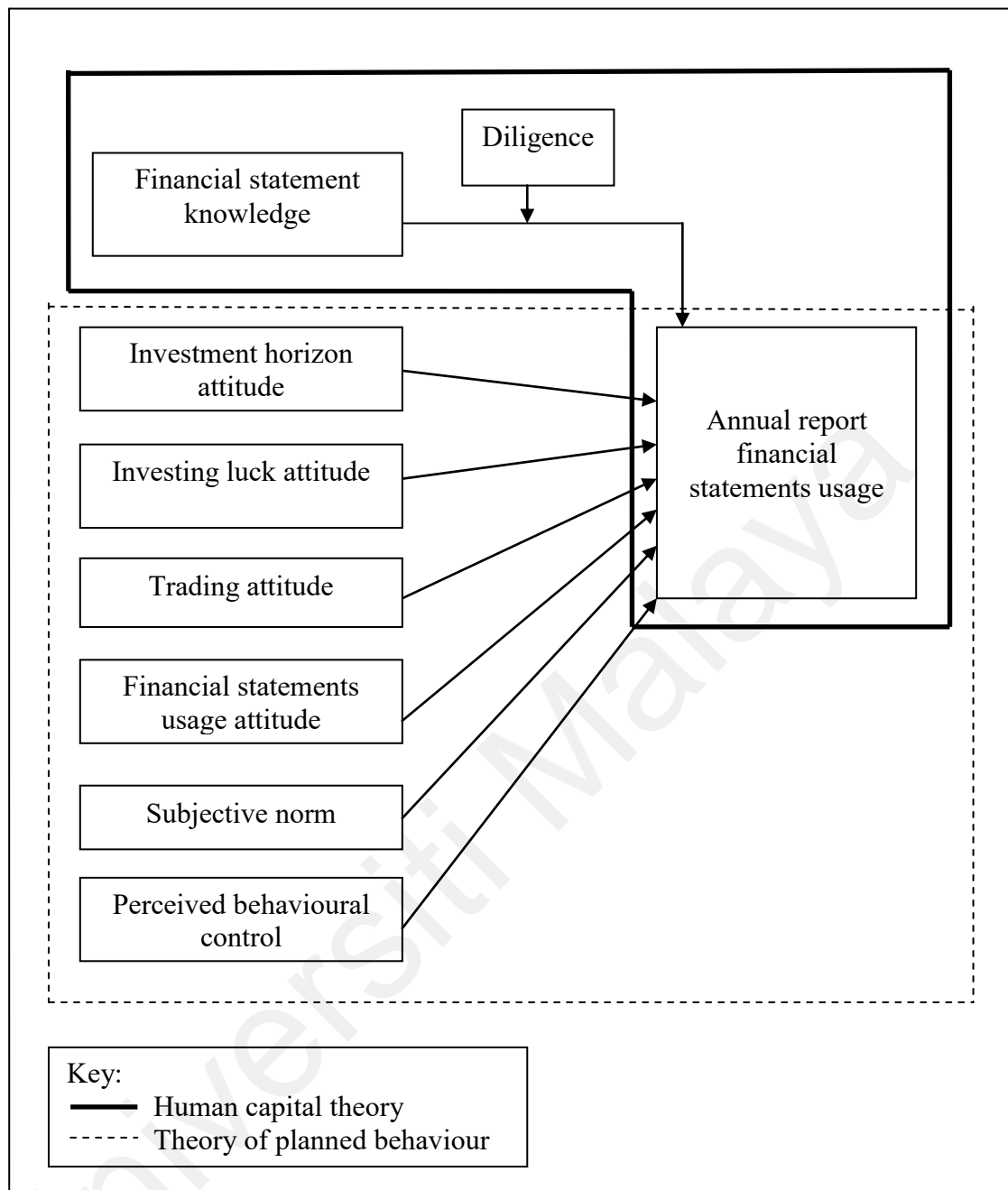


Figure 4.2: Theoretical Framework

In this framework, it is postulated that individual investors' annual report financial statements usage is influenced by seven variables. The first, financial statement knowledge is derived from human capital theory but can be justifiably included as a variable as per TPB based on the criteria set out by Fishbein and Ajzen (2010) (as cited in Ajzen, 2011b, p. 1119) discussed earlier. It is hypothesised that the influence of

financial statement knowledge on individual investors' annual report financial statements usage is moderated by diligence. The remaining six variables are based on TPB, namely investment horizon attitude, investing luck attitude, trading attitude, financial statements usage attitude, subjective norm and perceived behavioural control.

Subjective norm is a predictor variable as per TPB. In the context of this study, subjective norm refers to the investor imitating the usage of financial statements (or lack thereof) of significant others. Another predictor variable in TPB is perceived behavioural control. Here, perceived behavioural control refers to the confidence individual investors have in their ability to read and understand annual report financial statements. Since confidence is influenced by subjective knowledge as explained in Chapter 2, including this variable also allows for an assessment of the subjective knowledge of individual investors. The next section describes the hypotheses development.

4.5 Hypotheses Development

Hypotheses can be defined as "predictions about what the researcher expects the results to show" (Creswell, 2014, p. 53). According to the scientist and philosopher Bertrand Russell (2014, p. 522), "the framing of hypotheses is the most difficult part of scientific work, and the part where great ability is indispensable". There are two types of hypotheses namely quantitative and qualitative. Quantitative hypotheses predict the expected outcomes of relationships among variables (Creswell, 2014) and these are developed for this study. This section articulates the hypotheses developed for this study.

4.5.1 Financial Statement Knowledge

Financial knowledge is a type of human capital that translates into positive financial behaviour (Lusardi & Mitchell, 2014). Ample evidence in the literature support this assertion by demonstrating that financial knowledge is positively correlated with positive financial behavior that promotes financial well-being (Asaad, 2015; Atkinson & Messy, 2012; Babiartz & Robb, 2014; Robb, 2011). However, findings that indicate the contrary should not be discounted (Loke, 2015, 2016; Robb & Woodyard, 2011). Additionally, Parrotta and Johnson (1998) found that financial knowledge did not have a moderating effect between attitudes and behaviour.

It is possible that investors with high financial statement knowledge would make extensive use of annual report financial statements though it is also possible that such knowledge would not translate into this desired outcome. In other words, it is uncertain whether increased financial statement knowledge would lead to an increase in annual report financial statements usage among Malaysian individual investors. This is a fundamentally critical issue because financial education programmes are designed based on the assumption that increased financial knowledge via education translates into positive financial behavior (Atkinson et al., 2015; Chung & Park, 2014; Messy & Monticone, 2016; Poon & Olen, 2015; Worthington, 2013). Evidence to the contrary would necessitate a reappraisal of this assumption and changes to the way financial education programmes for new stock investors are formulated and conducted. Therefore, Hypothesis 1 is as follows:

H1: Financial statement knowledge positively influences individual investors' annual report financial statements usage, controlling for basic financial knowledge and demographic factors.

4.5.2 Diligence

The term due diligence arose from the United States' Securities Act 1933 and was used in the context of broker-dealer transactions. Since then, due diligence has become a common practice in business finance and refers to the thoroughness that must be exercised when examining the viability of a potential investment such as mergers and acquisitions. Individual investors too should exercise due diligence. Indeed, Statement of Financial Accounting Concepts No. 2 makes several references to investors –who are willing to study the information with reasonable diligence” (FASB, 2008), indicating that diligence is a characteristic that they should possess. Ideally, investors should diligently examine a company's financial statements to make a better appraisal of its long-term prospects.

In practice, however, many fail to do so. Annual report financial statements are inherently long and complex, placing tremendous demands on the reader. As Barber and Odean (2008) observed, individuals have temporal and cognitive limits of how much information they can process. Therefore, even though individual investors may be in possession of the knowledge and mental faculties to read and understand them, not all of them may choose to do so, due to cognitive issues, lack of time or even sheer laziness.

The fact that some investors are diligent while others are not might be due to psychological factors particularly, personality type. Research has demonstrated how personality type influences financial and investing behaviour (Durand, Newby, & Sanghani, 2008; Nga & Leong, 2013). Some investors have a personality with attributes such as being very logical, systematic, meticulous and conscientious. Others are

disorganised, emotional and dislike focusing on details. Many lie somewhere in between these two extremes. Tang et al. (2015, p. 382) used the term “self-discipline” to describe “a psychological factor required for individuals to diligently follow their financial plan and successfully convert responsible financial intentions into responsible financial behaviour.” They also stated that thoroughness is a prerequisite for successful financial planning (Tang et al., 2015, p. 383).

Skills, attributes and characteristics are regarded as elements of human capital (Boarini, d’Ercole & Liu, 2012). Researchers have shown that when non-cognitive skills such as self esteem and locus of control increase, the effect on behaviour equals or is more than a commensurate change in cognitive skills (Heckman, Stixrud & Urzue, 2006). In contrast, Herd (2010) reported that self-discipline had a limited mediating effect on the relationship between educational attainment and health outcomes among high school graduates.

The term diligence is used here to incorporate the concepts of self-discipline and thoroughness as proposed by Tang et al. (2015). Diligence is considered a type of human capital. Human capital theory is based on the premise that individuals will use their knowledge to maximise their utility. In relation to this study, human capital theory presupposes that financial knowledge obtained by investors will enable them to make better investment decisions. However, in addition to financial statement knowledge, investors need self-discipline to sacrifice time and other resources to consistently use annual report financial statements and thoroughness to read through at least a substantial portion of these financial statements. This leads to the presumption that diligence is selected as a moderating variable, similar to Herd (2010). Therefore, the following hypothesis is formulated in the light of the findings above:

H2: Diligence acts as a moderator on the relationship between financial statement knowledge and individual investors' annual report financial statements usage, controlling for basic financial knowledge and demographic factors.

4.5.3 Investment Horizon Attitude

Investment horizon profoundly influences investors' strategy (Kaniel et al., 2008) and perhaps by extension usage of financial statements. If investors have a short-term horizon attitude and regard stock investing as a get rich quick scheme, they would display investing behaviour according to this belief (Al-Tamimi, 2006; Monetary Authority of Singapore, 2005). However, if investors have a long-term horizon attitude and regard stock investing as a type of long-term savings (Monetary Authority of Singapore, 2005), then their investment behaviour would be different.

Jadlow and Mowen (2010) made a distinction between "investor" traits and "gambler" traits. According to them, those who have a present time orientation display gambler traits meaning that such individuals have a greater tendency to engage in stock speculation. These individuals are more likely to hold on to stocks for short periods and dispose them quickly in an attempt to make quick profits. As a result, they are more attuned to short-term signals such as sudden stock prices changes, developments in the company and operating environment as well as stock tips (Israelov & Katz, 2011). These investors are also drawn to stocks that have lottery features (Kumar, 2009b).

In contrast, individuals who have investor traits tend to hold on to stocks for long periods and realise their profits through dividends and stock price appreciation. These investors place greater importance on the long-term prospects of a company's stock and

are less influenced by short-term developments (Israelov & Katz, 2011). Since annual reports are published once a year, individual investors who want to make quick gains would be less reliant on the financial statements in annual reports compared to those who intend to hold on to stocks for extended periods. According to TPB, attitude towards a type of behaviour shapes that behaviour (Ajzen, 1991). Investment horizon attitude differs from this concept. However, it is regarded as a TPB variable in this study because it is postulated that investors with a long-term investment horizon attitude would more judiciously use financial statements for investment decision-making compared to those with an attitude in preference of short-term investing. Hence, Hypothesis 3a is:

H3a: Investment horizon attitude positively influences individual investors' annual report financial statements usage, controlling for basic financial knowledge and demographic factors.

4.5.4 Investing Luck Attitude

Some people are by nature fatalistic and a strong attitude towards luck permeates all aspects of their lives, including when investing. For instance, numerological superstition⁴⁷ is evident among individual investors in China (Bhattacharya, Kuo, Lin, & Zhao, 2017), to the extent that "lucky" numbered days influence stock market returns (Haggard, 2015) and firms list their IPO with lucky numerological listing codes (Hirshleifer, Jian, & Zhang, 2016). Indonesian investors believe some calendar dates are unlucky and are more risk adverse on those dates (Robiyanto & Puryandani, 2015).

⁴⁷ The belief that some numbers are lucky and others unlucky.

It is surmised that investors who strongly believe in luck would depend on good luck to guide investment decisions. Heuristics such as believing that a certain day is lucky for trading a specific stock (Robiyanto & Puryandani, 2015), having affect-based motivation that a stock has good luck connotations (Aspara & Tikkanen, 2011) and so on would be the guiding principles for such investors. This strong attitude towards investing luck would presumably render the investors to be less reliant on financial statements usage. In contrast, investors who have a low investing luck attitude would approach stock investing in a more systematic manner, relying instead on financial statements as sources of information about the stock. Investing luck attitude is not a predictor variable in the strict TPB sense. Nonetheless, it is considered a predictor variable in this research because attitude towards luck not only influences investment decision-making but also usage of financial statements. Therefore, the following hypothesis is developed:

H3b: Investing luck attitude negatively influences individual investors' annual report financial statements usage, controlling for basic financial knowledge and demographic factors.

4.5.5 Trading Attitude

Individual investors have a tendency to trade too frequently (Barber et al., 2009; Barber & Odean, 2013). This may emerge from the fallacious belief that active trading is profitable (Monetary Authority of Singapore, 2005). Active trading has severe financial implications. On an individual level, wealth destruction results because it has been empirically proven that individual investors consistently underperform passive funds (Linnainmaa, 2011) and fail to beat the market (Barber & Odean, 2000). On a

macro level, the noise created by high trading frequency increases stock market volatility (Foucault, Sraer, & Thesmar, 2011).

Yet, many individual investors cannot resist the lure of active trading in the erroneous belief that they can somehow beat the market. A common mistake by investors is that they sell stocks which have increased in value and hold on to ones that have declined. This is known as the disposition effect (Barber & Odean, 2013; Barberis & Xiong, 2009) as discussed in Chapter 3. A study on Taiwan revealed that overtrading led to a portfolio performance penalty of 3.8 percentage points and individual investor losses were equivalent to 2.5% of Taiwan's gross domestic product (Barber et al., 2009). Interestingly, trading frequency increases when investors feel more confident about their knowledge and skills, and it is more prevalent among overconfident investors (Graham, Harvey, & Huang, 2009; Grinblatt & Keloharju, 2009; Statman, Thorley, & Vorkink, 2006).

Clearly, trading attitude influences investment decision-making. Nonetheless, it may also impact usage of financial statements by individual investors. Investors who believe in actively trading are influenced more by short-term price fluctuations and other signals (Israelov & Katz, 2011) so it is postulated that they are less inclined to rely on annual report financial statements. While trading attitude is not a conventional TPB predictor variable, in the context of this study it is regarded as such for reasons discussed earlier. Hence, the next hypothesis is:

H3c: Trading attitude negatively influences individual investors' annual report financial statements usage, controlling for basic financial knowledge and demographic factors.

4.5.6 Financial Statements Usage Attitude

As discussed in Chapter 2, regulators, preparers, experts and scholars view financial statements as important sources of information about the performance of a firm. However, whether individual investors regard them as such is another issue. Research done in other countries indicates that individual investors rank annual report financial statements highly as sources of information about a company's performance (Al-Ajmi, 2009; De Zoysa & Rudkin, 2010). In Malaysia, the situation is less clear, though prior studies reported that individual investors claim performing financial analysis (Jamal et al., 2014; Nik Muhammad & Abdullah, 2009) which presumably is based on annual report financial statements usage.

Cognitive decision-making is incumbent on what type of information is obtained and how it is processed (Baron, 1998). Since investment decision-making is based on the sources of information obtained by investors, their attitudes on what sources of information are important to them are significant. TPB states that attitude towards a behaviour is associated with that behaviour (Ajzen, 1991). Therefore, it is likely that individual investors who have a positive attitude towards financial statements usage would be more likely to use annual report financial statements, which is why it is regarded as a TPB predictor variable here. Hence, the following is hypothesised:

H3d: Financial statements usage attitude positively influences individual investors' annual report financial statements usage, controlling for basic financial knowledge and demographic factors.

4.5.7 Subjective Norm

The influence of family, friends and other influential people is termed subjective norm (Carpenter & Reimers, 2005). Subjective norm is a predictor variable in TPB (Ajzen, 1991). It can exert a powerful social pressure on our financial behaviour. For instance, the saving habit and credit card behaviour of youths partly stems from the influence of their parents and other family members (Agarwalla et al., 2013; Ibrahim et al., 2009; Robb, 2011; Sabri & MacDonald, 2010; Tang et al., 2015). Chung and Park (2014) found that when college students had stronger networks with finance professors, they were more financially literate. Subjective norm impacts stock investing behaviour, especially if investors rely on the advice of trusted acquaintances. For example, in China, peer influence affects individual investor trading decisions (Ng & Wu, 2010). Similar trends can be observed in other parts of the world, though perhaps the magnitude is lower (for example, Barber & Odean, 2013).

Nobody becomes a stock investor in complete isolation. Most people are influenced by family, friends or even colleagues but there are others who are inspired by the media or even books written by successful investors. It is suggested that when individual investors feel people who are influential to them as investors also use annual report financial statements and expect them to do so, the likelihood the individual investor uses them increases.

For instance, if individual investors' parents consistently rely on financial statement analysis when investing in shares and exposed them from an early age to the merits of this approach, then the probability of the investors using financial statements increases. Similarly, if new investors' mentors undertake such an approach, then the investors

would feel compelled to mimic this behaviour. Furthermore, in situations where investors' circle of significant others are not stock investors, they might still be compelled to rely on financial statements if authors or media personalities who inspire their investing behaviour do so. Therefore, the next hypothesis is formulated:

H3e: Subjective norm positively influences individual investors' annual report financial statements usage, controlling for basic financial knowledge and demographic factors.

4.5.8 Perceived Behavioural Control

Perceived behavioural control is another predictor variable in TPB. It refers to how well individuals perceive performing a type of behaviour (Ajzen, 1991). By way of example, Ramayah et al. (2009, p. 274) stated that "when purchasing an innovative product, consumers may not only need more resources (time, information etc.) but also more self-confidence in making a proper decision." The same principles apply when investing in equities, which are complex financial products. Indeed, investors display greater confidence when they feel they are in control of their investment decisions (Wood & Zaichkowsky, 2004).

In this research, perceived behavioural control refers to how easy or difficult individual investors find understanding and using annual report financial statements. Perceived behavioural control is dependent on both subjective and objective annual report financial statements knowledge. Yet, subjective financial knowledge has been demonstrated to be correlated with confidence in performing certain behaviour and contributes to overconfidence (Asaad, 2015; Babiarz & Robb, 2014; Robb & Woodyard, 2011). Consequently, the next hypothesis is:

H4f: Perceived behavioural control positively influences individual investors' annual report financial statements usage, controlling for basic financial knowledge and demographic factors.

4.5.9 Demographic Differences in Variables

Financial education programmes are generally designed to target specific groups (Worthington, 2013). Malaysia has tremendous demographic diversity and it is important to discern these differences in the development of more holistic investor education programmes for financial statement literacy⁴⁸. This research represents a first step in that direction. Therefore, the following hypotheses are developed to examine demographic differences for the predictor variables as well as the dependent variable.

4.5.9.1 Financial Statement Knowledge Differences

Prior studies have noted significant differences in financial knowledge based on gender (Asaad, 2015; Klapper et al, 2015), ethnicity (Atkinson & Messy, 2011; Xu & Zia, 2012), age (Lusardi et al., 2014; Sabri & MacDonald, 2012), education level (Klapper et al, 2015; Xu & Zia, 2012) and employment sector (Loke, 2015). While there is little research on differences in financial statement knowledge, it is possible that there are demographic differences for this variable.

H4a: There are significant demographic differences for financial statement knowledge.

⁴⁸ Financial statement literacy is defined as the combination of financial statement knowledge, attitudes towards financial statements usage and usage of financial statements for investment decision-making.

4.5.9.2 Investment Horizon Attitude Differences

Prior research documenting demographic differences for investment horizon among individual investors is limited. Nonetheless, it is possible that there are significant demographic differences for investment horizon attitude. This is because each individual's investment horizon attitude is unique and based on personal characteristics, including demographic characteristics. Hence, the following is hypothesised:

H4b: There are significant demographic differences for investment horizon attitude.

4.5.9.3 Investing Luck Attitude Differences

Existing studies have demonstrated a prevalence of belief in luck and superstition among individual investors in Asian countries such as China (Bhattacharya et al., 2017) and Indonesia (Robiyanto & Puryandani, 2015). However, these and other studies have not documented demographic differences for investing luck, though it is likely that such differences are evident among individual investors. Luck is sometimes employed as a heuristic for making stock investments so examining what demographic groups are susceptible to this tendency is important. Therefore, it is postulated that demographic differences exist for investing luck attitude among Malaysian individual investors.

H4c: There are significant demographic differences for investing luck attitude.

4.5.9.4 Trading Attitude Differences

Research has shown that many individual investors are fond of trading (for example, Barber & Odean, 2000). Yet, it is unclear what demographic factors account for differences in trading attitude, though studies indicate that men are more aggressive

stock risk takers than women (Jacobsen et al., 2008). Hence, the following hypothesis is:

H4d: There are significant demographic differences for trading attitude.

4.5.9.5 Financial Statements Usage Attitude Differences

Several researchers have noted demographic differences for financial attitudes concerning spending and saving (Agarwalla et al., 2013; Atkinson & Messy, 2012). In a similar vein, it is postulated that demographic differences are evident for financial statements usage attitude.

H4e: There are significant demographic differences for financial statements usage attitude.

4.5.9.6 Subjective Norm Differences

As acknowledged by Ajzen (1991, 2011b), demographic factors influence the TPB model which is why they are often employed as control variables. Examining demographic differences for the subjective norm of Malaysian individual investors is of great relevance to this study because they indicate to what extent significant others influence investors' financial statement usage based on demographic factors, such as whether men are more easily influenced by the financial statements usage of significant others compared to women and so on.

H4f: There are significant demographic differences for subjective norm.

4.5.9.7 Perceived Behavioural Control Differences

Similar to subjective norm, it is pertinent to examine the extent to which the perceived behavioural control of using financial statements of individual investors differs among Malaysian individual investors. As in the case for attitudes and subjective norm, it is likely that there are significant demographic differences for the perceived behavioural control of Malaysian individual investors.

H4g: There are significant demographic differences for perceived behavioural control.

4.5.9.8 Annual Report Financial Statements Usage Differences

Several studies have noted demographic differences for financial behaviour (such as Atkinson & Messy, 2012; Sabri & MacDonald, 2010). Such demographic differences may also be present for individual investors' annual report financial statements usage.

H4h: There are significant demographic differences for annual report financial statements usage.

4.6 Research Framework

The research framework is derived from the theoretical framework and the hypotheses that were developed in the preceding section. The research framework is shown in Figure 4.3 on the following page.

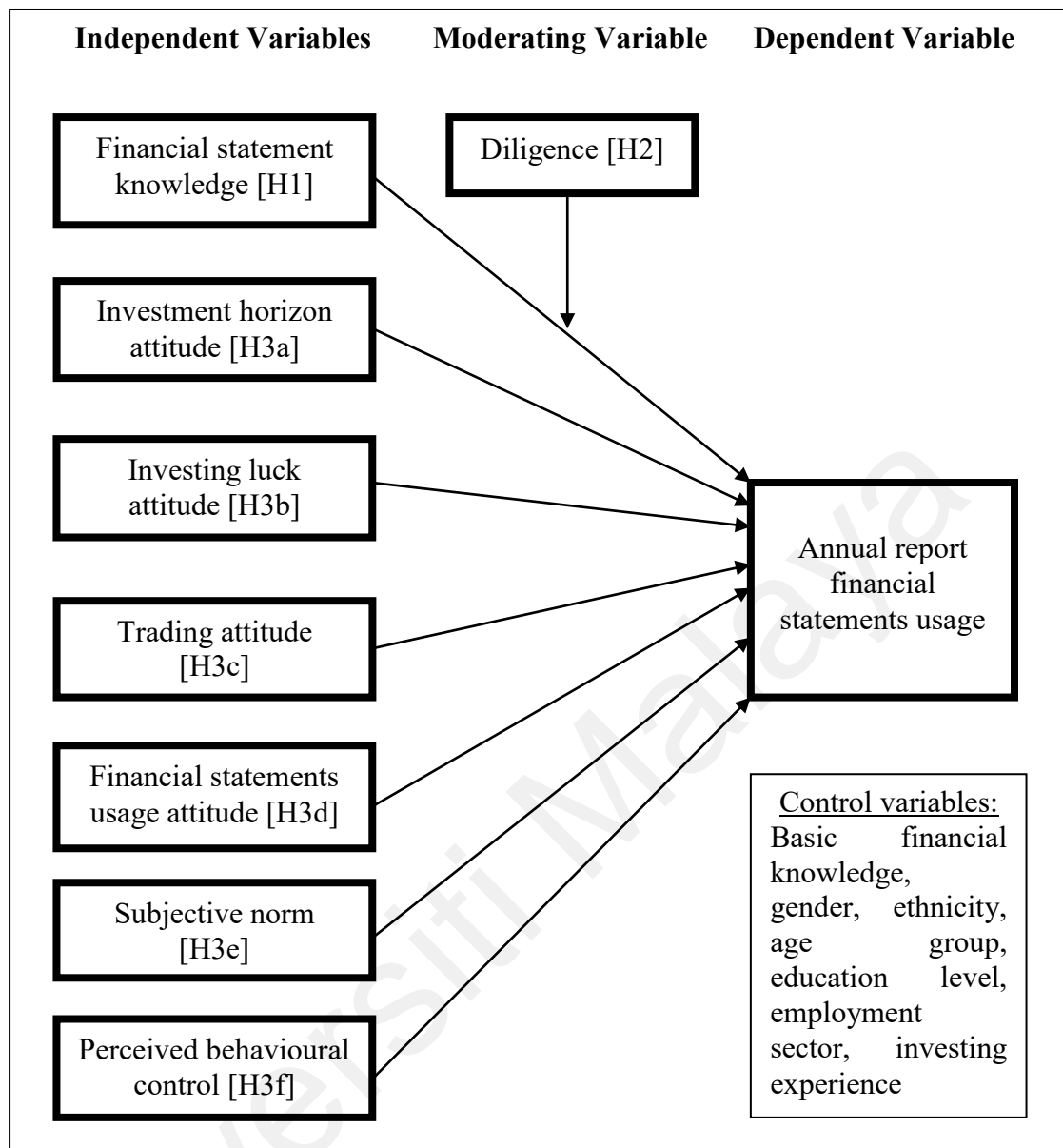


Figure 4.3: Research Framework

In this framework, the dependent variable is individual investors' annual report financial statements usage. This dependent variable is postulated to be influenced by seven independent variables and one moderating variable. The first, financial statement knowledge is believed to have a positive relationship with the dependent variable. It is also postulated that this relationship is moderated by another variable termed diligence which incorporates the constructs of self-discipline and thoroughness. Next, four attitudes are examined. They are investment horizon attitude, investing luck attitude,

trading attitude and financial statements usage attitude. The remaining two independent variables are subjective norm and perceived behavioural control.

4.7 Summary of Research Objectives, Research Questions and Hypotheses

The table below summarises the research objectives, research questions and hypotheses of this study.

Table 4.2: Summary of Research Objectives, Research Questions and Hypotheses

Research Objective (RO)	Research Question (RQ)	Research Hypotheses
RO1	RQ1	H1
RO2	RQ2	H2
RO3a	RQ3a	H3a
RO3b	RQ3b	H3b
RO3c	RQ3c	H3c
RO3d	RQ3d	H3d
RO3e	RQ3e	H3e
RO3f	RQ3f	H3f
RO4	RQ4	H4a to H4h

4.8 Chapter Summary

This chapter began with an outline of the theoretical perspective of this study, a theme which will be expanded in the next chapter's section on the research paradigm. This chapter also discussed the two theories underpinning this research, namely human capital theory and TPB, and the rationale behind their selection. The theoretical framework and research framework were also described. This was followed by a discussion on the hypotheses development. The next chapter describes the research methodology of this study.

CHAPTER 5: RESEARCH METHODOLOGY

5.1 Introduction

This chapter explains the research methodology employed to test the hypotheses articulated in the preceding chapter. Section 5.2 discusses the research paradigm of the study and Section 5.3 outlines the research design. The sampling method is described in Section 5.4 followed by the data collection method in Section 5.5. Details on the research instrument, questionnaire development and operationalisation and measurement of instrument comprise Sections 5.6, 5.7 and 5.8 respectively. Next is a review of the data analysis procedure in Section 5.9. The chapter ends with a summary in Section 5.10.

5.2 Research Paradigm

According to Bassey (1990), a paradigm is “a network of coherent ideas about the nature of the world and the functions of researchers which, adhered to by a group of researchers, conditions their thinking and underpins their search actions”. Indeed, a paradigm can be regarded as a broad framework of perceptions, understanding and beliefs within which theories and practices operate.

A research paradigm is important to researchers for several reasons. Firstly, the paradigm guides researchers in conducting their studies (Creswell, 2014). Secondly, it allows researchers to critically consider and evaluate hitherto unexamined approaches to research to select the most appropriate. Hence, the type of beliefs held by individual researchers based on their paradigm will often lead to embracing a qualitative,

quantitative or mixed methods approach in their research. Four research paradigms commonly used in accounting research are positivism, critical theory, pragmatism and interpretivism.

After critically evaluating these four paradigms, it was decided that positivism is the most appropriate paradigm for this research. The positivist approach⁴⁹ is quantitative, involves hypotheses testing and the use of empirical data, and is intended to establish causality and make generalisations that can be used to make predictions or recommendations (Creswell, 2014; Johnson & Duberley, 2000).

From the research questions and objectives, it is clear that this study will be quantitative in nature. All three research questions are best answered by information obtained via a standardised questionnaire survey of individual investors and the survey method is a feature of the positivist approach. Furthermore, statistical analyses, another element of positivism, are required to ascertain the relationship between the variables examined.

In addition, the positivist approach lends itself to making recommendations based on generalisations from research findings. The potential theoretical and practical contributions of this study necessitate generalisations to be made and the establishment of causality. It is also inevitable that the study be reductionist in nature because qualitative research like case studies, focus groups and detailed interviews will not enable generalisations to be made.

⁴⁹ Positivism has its antecedents in the Enlightenment, but by large, it was developed in the middle of the 19th Century by Auguste Comte (1798 – 1857), a French philosopher and sociologist (Johnson & Duberley, 2000). Positivism is variously known as the scientific method/approach or empirical science. Creswell (2014) made a distinction between positivism and postpositivism, in which the latter recognises that there is no absolute truth of knowledge.

A research paradigm has four major elements – ontology, epistemology, axiology and methodology. Ontology refers to how the viewer perceives the nature of reality. In the words of Burrell and Morgan (1979, as cited in Holden & Lynch, 2004, p. 5), it is “the product of one’s mind.” The second element of a research paradigm is epistemology. Epistemology is derived from two Greek words, *episteme* which means *knowledge* or *science* and *logos* which means *knowledge*, *information*, *theory* or *account* (Johnson & Duberley, 2000, p. 5). Hence, epistemology is preoccupied with the theory of knowledge. What constitutes knowledge, how we acquire knowledge and what is the relationship between the researcher and knowledge are all epistemological issues. The third element of a research paradigm is axiology. Derived from the Greek work *axia*, it means *value* or *worth*. Here, the role of research ethics and values as well as the researcher’s stance comes into play in conducting the research. The final element of a research paradigm is methodology and refers to the research process model.

Positivism is aligned with the ontology, epistemology and axiology of this study. Ontologically, reality is viewed in this study as a contextual field of information as per the objectivist viewpoint (Godfrey et al., 2010). Financial statements, which are prepared based on the presupposition of the commitment to rationalism (see Chapter 2), provide users with objective information that allows users to contextualise, among others, the performance of prospective investments in comparison with the other entities. Furthermore, the concept of financial literacy rests on the assumption that financial information is objective and the processing of financial facts is linear and rational (Ohlsson, 2012). Consequently, the two theories that underpin this research, namely human capital theory and the theory of planned behaviour were selected because they support the concept of investor rationality or objectivity.

The epistemological underpinning of this research is establishing causality and making generalisations, as described earlier. The axiology of this study is to undertake research in an objective, independent and value-free way. The methodology will be based on empiricism through the mathematical analyses of results obtained from a standardised questionnaire survey (Saunders, Lewis, & Thornhill, 2000). The next section outlines the research design.

5.3 Research Design

Explanatory studies can be defined as those “which establish causal relationships between variables” (Saunders et al., 2000, p. 98). This research is explanatory in nature. It seeks to establish relationships between the following independent variables: financial statements knowledge, investment horizon attitude, investing luck attitude, trading attitude, financial statements usage attitude, subjective norm, perceived behavioural control and the following dependent variable: annual report financial statements usage.

The hypothetico-deductive or scientific approach has been mentioned earlier as the paradigm of this research. This entails formulating, operationalising and testing hypotheses.

As discussed in Chapter 3, surveys have been widely used by researchers when examining financial literacy or to identify sources of information used for investment decision-making (for example, Al-Tamimi & Kalli, 2009; Atkinson & Messy, 2012; Jamal et al., 2014; Lusardi & Mitchell, 2011; Mahdzan and Tabiani, 2013; Monetary Authority of Singapore, 2005; Nga & Leong, 2013; Nik Muhammad & Abdullah, 2009; Pandit & Yeoh, 2014; Sabri & MacDonald, 2010) because this method is ideal for

obtaining information from a large sample size. After much deliberation and critical reading of the literature, it was decided that the survey method is the most appropriate choice for collecting data that fulfil the research objectives. The survey method is deemed ideal because it permits the collection of data from the population of individual investors in Malaysia in a cost-effective manner. Therefore, the survey method is employed in this study.

5.4 Sampling Method

In practice, it is often not feasible to survey all members of a population and therefore a representative sample is obtained for study. The population for this research comprises Malaysian individual investors transacting on Bursa Malaysia. To reiterate the definition stated in Chapter 1, individual investors or retail investors are people –who buy and sell securities for their personal account, and not for another company or organization” (Investopedia.com, n.d.). These are people who buy and sell securities as a side investment for themselves and comprise individuals such as doctors, lawyers, retirees and even housewives⁵⁰. They range from small investors dabbling in the stock market to high net worth individuals holding millions of ringgit in their stock portfolio.

Since it is mandatory for individual investors in Malaysia to open a central depository system (CDS) account with Bursa Malaysia to trade in stocks, the total number of individual CDS account holders is used as the sampling frame. One must be at least 18 years of age at the date of application to be able to open a CDS account

⁵⁰ Those working in the financial services sector such stockbrokers and fund managers also fall under the ambit of individual investors when they buy and sell securities for themselves.

(Bursa Malaysia, 2016b). According to the most recent publicly available data, there are approximately 2.49 million individual CDS account holders (Aruna, 2017).

5.4.1 Unit of Analysis

It is vital to determine the most appropriate unit of analysis for a study because the sample size and the data collection method stem from the unit of choice. Among the various types of units include organisations, departments, work groups and individuals (Zikmund, Babin, Carr, & Griffin, 2013). For this study, individual investors comprise the unit of analysis.

Target respondents are individual investors between the ages of 21 and 60. This range is chosen to examine the financial statement knowledge, attitudes and behaviour of investors in various age groups. While there are many individual investors aged above 60, they are not prioritised in this study because they are in a stage of their life cycle characterized by wealth disposal so their attitudes and behaviour would be different. Furthermore, research indicates that financial knowledge declines after 60 (Xu & Zia, 2012).

5.4.2 Sample Size

Once the unit of analysis is ascertained, the next step is to determine an appropriate sample size. There are numerous ways in which sample size is determined. Saunders et al. (2000) have suggested that the appropriate sample size is calculated based on the confidence level, the margin of error and the types of analyses undertaken. An approach proposed by Zikmund et al. (2013) and Malhotra (2010) involves the

confidence level, population standard deviation and error as inputs to the equation. However, the limitation of this method is that it is not applicable in circumstances where the population standard deviation is unknown, as is the case with this study.

Fowler (2009) proposed that sample size should be calculated based on the margin of error, the confidence level for this margin of error and the percentage of the sample that will respond in a given way and has provided a table for easy reference in determining sample size. Using the table provided by Fowler (2009), a margin of error of 5% and a confidence level of 95%, the required sample size for this study is 384 respondents.

5.4.3 Sampling Technique

There are various sampling techniques. These can be classified as random and non-random techniques. Random sampling is superior to non-random sampling because through the former technique, a representative sample that can be generalised is obtained (Creswell, 2014). However, it is difficult to obtain a purely random sample in many circumstances owing to the population size and dispersion of members. Indeed, prior studies in Malaysia on individual investors generally employed non-random techniques, particularly convenience sampling in surveys (for instance, Jamal et al., 2014; Lai et al., 2013; Tan et al., 2011).

Furthermore, following the implementation of the Personal Data Protection Act 2010 (PDPA) on 15 November 2013, information regarding the particulars of individual investors can no longer be divulged by organisations such as Bursa Malaysia or stock brokerage firms. Therefore, the research strategy entailed a purposive sampling

technique in which respondents were clients of a single stock brokerage firm who attended its investor seminars. Individuals who attend such seminars are more likely to have long-term investor traits since the subject matters are geared towards investing rather than speculation. Furthermore, since the seminars are in English, participants would have sufficient proficiency in the language to use English language financial statements and be able to answer the questionnaire.

Certain issues may arise from using a sample comprising individual investors of a single stock brokerage firm. A primary concern is the biases associated with the attributes of clients of that firm. However, as Yeoh (2010, p. 178) points out, that such biases are mitigated because firstly, Malaysian stockbrokerage firms are open to clients of all walks of life regardless of where they are based and secondly, the procedures for opening a CDS account is simple and straightforward. Local stock brokerage firms do not discriminate clients based on wealth so firms may have both high net worth individuals and small investors as clients. Also, a study revealed that individual investor behaviour among unrelated stock brokerage firms is highly correlated (Jackson, 2003), hence, the risk of bias is reduced since investors are likely to behave in a similar manner, regardless of which stock brokerage firms they are clients.

The stockbrokerage firm that distributed the questionnaires to its clients is one of the largest and most established in Malaysia with branches and representatives throughout the country. Hence, its clients may be regarded as encompassing a fairly diverse cross section of the individual investor population in the country. In addition, the investor education seminars in which the questionnaires were distributed were conducted in three major regions in Peninsular Malaysia

The approach of relying on data from a single stock brokerage firm as representative of the individual investor population has many precedents (for example, Barber & Odean, 2000; Ben-David & Hirshleifer, 2012; Kumar, 2009a). While the sample sizes in the aforementioned studies are considerably larger than that of this research, the total individual investor population in the US is of a much greater magnitude compared to Malaysia. Hence, the sample size is comparable relative to the investing population of prior studies. Additionally, Lease et al. (1974) generalised findings of a survey that employed a sample comprising 3, 000 investors, or 10% of client of a single New York stock brokerage firm. The response rate of that study was 40% or approximately 1, 000 individual investors. Though smaller, the sample in this research can be regarded as more representative than the study by Lease et al. (1974) because it encompasses different regions instead of being confined to a single city.

In this study, a degree of randomness is achieved since investors attended these seminars at their discretion. Furthermore, there is adequate diversity since the seminars were conducted in three different regions in Peninsular Malaysia. Another reason why this sampling method is selected will be elaborated in the next section.

5.5 Data Collection Method

This research involves the collection of primary data only. Primary data was collected through a self-administered questionnaire survey of individual investors in Malaysia. The data collection method of this study was selected due to two main considerations.

Firstly, since the researcher is not privy to obtain contact details of individual investors as per the PDPA, a stock brokerage firm was enlisted to distribute the questionnaires to potential respondents on the researcher's behalf. A large Malaysian stockbrokerage firm headquartered in Kuala Lumpur consented to render assistance on the condition of anonymity. Questionnaires were distributed during weekend seminars that the stock brokerage firm conducts regularly for its clients⁵¹. These seminars were conducted in Kuala Lumpur, Johor Bahru and Penang, and represented different regions in Peninsular Malaysia. Respondents were requested to answer the questionnaire during a 30 minute seminar break. The same firm distributed the pilot survey questionnaire to its clients in an earlier weekend seminar in Kuala Lumpur. A similar method was adopted by Khan et al. (2016) in which questionnaires were distributed to participants in investment seminars conducted at Bursa Malaysia. In another study, Ali et al. (2015) distributed questionnaires to participants of investment educational seminars organised by Permodalan Nasional Berhad (PNB)⁵² using such an approach.

Secondly, this data collection method was also selected to minimise the possibility of respondents "cheating" on the financial statement knowledge questions. Other approaches such as take home, mail or online questionnaires are suitable where opinions are sought but less so if the purpose is to ascertain the actual knowledge level of respondents. There is higher probability of respondents reading up the correct answers to the financial statement knowledge questions they do not know if either one of these methods was used, resulting in a less accurate assessment of their actual financial statement knowledge. By asking respondents to answer the questionnaire during a fixed period of 30 minutes, there was less time and opportunity for them to read up the

⁵¹ Financial statement analysis is not one of the topics discussed during these seminars. Hence, the answers provided by respondents for the multiple choice questions reflect their actual financial statement knowledge and is not based on what they learned during the seminar.

⁵² The largest fund management company in Malaysia.

answers to the financial knowledge questions. Furthermore, since those who attended the seminars were generally complete strangers to one another, the probability of individuals sharing and discussing answers was minimised.

5.6 Research Instrument

The research instrument was a printed self-administered questionnaire which is deemed apt for this type of study (Atkinson & Messy, 2012; Ibrahim et al., 2009; Loke, 2015; Lusardi & Mitchell, 2011; Lusardi et al., 2014; Sabri & MacDonald, 2010). The questionnaire was in English because the study is concerned with financial statements of annual reports published in English.

The printed questionnaire consisted of seven pages. The first page contained a covering letter which outlined the objective of the study and invited the respondent to participate in the survey. Instructions for answering the questions as well as assurances of confidentiality and anonymity of responses were also stated on the first page.

The questionnaire comprised eleven sections, namely Section A to Section K. Section A concerned the moderating variable on diligence and comprised four items. Section B was on investment horizon attitude and consisted of three items. Investing luck attitude consisted of three items, made up Section C. Section D examined trading attitude using three items. Financial statements usage attitude, via three items was studied in Section E. Section F evaluated subjective norm using four items while Section G was on perceived behavioural control with four items. Section H consisted of three multiple choice questions on basic financial knowledge (a control variable) followed by Section I on financial statement knowledge consisting of eight multiple

choice questions. Section J was on the dependent variable which is annual report financial statements usage and comprised three items. The final part of the questionnaire, Section K contained six demographic questions. A sample of the questionnaire is provided in Appendix C. In summary, the questionnaire is shown in Table 5.1 as follows:

Table 5.1: Research Questionnaire

Section	Variable	Items
A	Diligence	A1 to A4
B	Investment horizon attitude	B1 to B3
C	Investing luck attitude	C1 to C3
D	Trading attitude	D1 to D3
E	Financial statements usage attitude	E1 to E3
F	Subjective norm	F1 to F4
G	Perceived behavioural control	G1 to G4
H	Basic financial knowledge	H1 to H3
I	Financial statement knowledge	I1 to I8
J	Annual report financial statements usage	J1 to J3
K	Demographic questions	K1 to K6

The questionnaire was designed in this particular manner to encourage participation. It began with general items on the respondents' level of diligence (Section A) and progressed to items on their attitudes, subjective norm and perceived behavioural control in relation to annual report financial statements usage (Sections B to G). This was followed by multiple choice questions on basic financial knowledge and financial statement knowledge (Section H and I respectively) and items on annual report financial statements usage (Section J). Financial knowledge questions were deliberately placed before usage items to allow investors to reflect on whether they possessed sufficient financial statement knowledge before answering about the extent of their annual report financial statements usage. This was done to mitigate the possibility of respondents

providing socially desirable answers on their annual report financial statements usage. The next section describes the questionnaire development process.

5.7 Questionnaire Development

While there is a large corpus of research on financial literacy, to the best of the researcher's knowledge, published papers that have examined financial statement knowledge are limited. Even in the accounting literature, few studies have examined financial statement knowledge, and those that do rely on secondary data of trading and other activities (such as Callen et al., 2016) instead of assessing the actual financial statement knowledge of users. Similarly, in the wealth of literature on individual investor behaviour, studies that contextualise usage of annual report financial statements through the lens of TPB were lacking. Therefore, the questionnaire design represents an original methodological contribution to the literature. This section describes the questionnaire development process.

5.7.1 Preliminary Questionnaire Development

The first stage of the preliminary questionnaire development was generating items derived from the variables based on instruments in the existing literature. The second stage comprised field interviews with ten individual investors who have at least seven years of experience. These investors comprised a doctor, a lawyer, two engineers, one IT manager, two teachers, a retired company secretary and two employees in the financial services sector. The interviews were conducted either in the homes of the investors or in public places and lasted an hour on average. The investors were asked to share with the researcher their investment philosophy and the importance they placed on

annual report financial statements usage. These investors were also asked about what influenced their annual report financial statements usage or the lack thereof. Seven of the investors used annual report financial statements to varying degrees while the remaining three did not use them at all. The interview findings supported the variables derived from the literature. Indeed, the investors were of the opinion that financial statement knowledge, investment horizon attitude, investing luck attitude, trading attitude, financial statements usage attitude, subjective norm and perceived behavioural control influenced financial statements usage. The list of TPB items was subsequently emailed to these investors to solicit their opinion on the appropriate scale anchors. This approach provided face validity for the anchors for the TPB items, consistent with the practice recommended by Ajzen (2006).

An advantage of adopting TPB in the research framework is that detailed instructions about questionnaire design are provided (Ajzen, 2006, 2011a). These guidelines were meticulously adhered to when preparing the TPB-related sections of the questionnaire. For example, Ajzen (2006) recommended beginning with a relatively large set of 20 to 30 items to measure attitudes. Analysis of reliability such as Cronbach's alpha can be utilised to narrow the list of items, as was done in this study which had an initial list of 26 items to measure various investor attitudes. Factor analysis was performed to separate these items into appropriate factors. More on the investor attitudes will be discussed in Section 5.8 on the operationalisation and measurement of the research instrument.

As mentioned earlier, an instrument assessing financial statement knowledge was lacking in the extant literature. Therefore, tremendous care was taken in the development of an instrument for this purpose. Atkinson and Messy (2011) noted that

financial literacy is a complex phenomenon that eludes direct measurement by a single question. Hence, a comprehensive set of questions is needed to test financial knowledge. When measuring financial literacy, Lusardi and Mitchell (2011, p. 2) urged adhering to the four principles of simplicity, relevance, brevity and capacity to differentiate. Additionally, Atkinson and Messy (2011, p. 659) exhorted using questions that “have been tested and proven to be of high quality and unbiased”. The researcher is mindful of the need to ensure clarity, relevance and brevity, so that this section of the questionnaire did not intimidate respondents by resembling an examination question paper on financial reporting.

An initial list of twenty financial knowledge questions was prepared. These were in the form of multiple choice questions, consistent with the majority of studies that evaluate financial knowledge. These multiple choice questions assess the knowledge of key financial concepts used in financial statements and the application of these concepts through ratio analysis. Apart from input obtained from field interviews, “The Beginners’ Guide to Financial Statements” (U.S. Securities and Exchange Commission, 2007) and books on using financial statements for investing⁵³ formed the basis of evaluating the areas of financial statement knowledge that informed individual investors must possess. The questions were obtained from accounting and finance textbooks. These twenty questions were first tested on a group of 64 business diploma students to ascertain the level of difficulty⁵⁴.

⁵³ Such as “The Intelligent Investor”(Graham & Zweig, 2006) and “Common Stocks and Uncommon Profits”(Fisher, 2003).

⁵⁴ Elliott, Hodge, Kennedy, and Pronk (2007) provided empirical evidence that MBA students were reliable proxies for unsophisticated nonprofessional investors as they displayed similar behaviour except when making decisions. Therefore, these students of a private college in Johor were selected on the premise that they display comparable levels of financial statement knowledge as average individual investors in Malaysia. Test results revealed average performance, indicating that the questions were of reasonable levels.

A preliminary list of 62 items was generated. This list of items and their measures were then subject to content validity via review by an expert panel of six members. Details of these panelists and a summary of their comments are provided in Appendix A and Appendix B, respectively. In brief, the expert panel unanimously rated nine questions as most appropriate for assessing financial statement knowledge. These nine questions were selected for the pilot study instrument. Several items were recommended for removal by the expert panel. Notably, the original list comprised five items on risk tolerance. However, several of the panel members opined that this variable had no relationship with financial statements usage with one stating that he has yet to encounter an instrument that validates risk tolerance in a meaningful way. Hence, this variable was subsequently removed from the research framework and questionnaire.

A pilot study questionnaire comprising 48 items (including 6 demographic questions) was subsequently prepared from the feedback given by the expert panel. The demographic questions were on gender, ethnicity, age group, education level, employment sector and investing experience. The demographic items selected were modelled after Loke (2015) and Loke (2016). More on the pilot study is discussed next.

5.7.2 Pilot Study

Conducting a pilot study is important for several reasons. One, it serves as a trial run for the actual questionnaire so that the questions, format and scales can be refined (Creswell, 2014; Saunders et al., 2000). Two, it allows the researcher to assess the reliability and validity of the questionnaire (Creswell, 2014).

A pilot study was conducted in July 2016. A total of 30 respondents is sufficient for a pilot study (Zikmund et al., 2013). Nonetheless, it is vital that the pilot study group shares the same characteristics as the sample. The primary advantage of this pilot study group is that it shared the same attributes of the subsequent research sample. The pilot questionnaire was administered to 40 individual investors who were clients of the same stock brokerage firm as the subsequent research respondents. Respondents comprised participants of a seminar conducted by the stock brokerage firm in its Kuala Lumpur branch in late July 2016. Responses from eight investors were discarded as they contained one or more incomplete items leaving a total of 32 usable questionnaires.

Participants were monitored by the marketing personnel of the firm to assess the time they took to complete the questionnaire. They were also provided with a form to write their comments, if any. In general, participants found the instructions clear and easy to follow. They were also able to understand the questions and did not report any ambiguity in wording. While participants were able to complete answering all questions within the allotted time, some commented that there were too many questions. Therefore, analysis was done to determine whether there were items that warranted deletion. This is discussed in the following paragraphs.

The reliability of the pilot questionnaire was assessed using two measures. The first was Cronbach's alpha and the second was corrected item-total correlations. According to Hair, Black, Babin, and Anderson (2010), a Cronbach's alpha of .70 is regarded as the lower limit, but an alpha of .60 is acceptable for exploratory studies. While Hair et al. (2010) propose that item-total correlations should be in excess of .50, others (such as de Vaus, 2014; Pallant, 2011) contend that item-total correlations of .30 and above are acceptable. The reliability test results for the pilot study are shown in Table 5.2:

Table 5.2: Reliability Test for Pilot Study

Variable	Original		Adjusted	
	Items	Cronbach's α	Items	Cronbach's α
Financial statement knowledge	9	.68	8	.69
Investment horizon attitude	8	.72	3	.84
Investing luck attitude	5	.63	3	.85
Trading attitude	3	.85	3	.85
Financial statements usage attitude	5	.31	3	.78
Subjective norm	5	.56	4	.78
Perceived behavioural control	4	.67	4	.67
Diligence	4	.72	4	.72
Annual report financial statements usage	3	.95	3	.95

As can be seen in Table 5.2, several variables originally had Cronbach's alphas of less than .70. The item-total correlations were examined to ascertain whether certain items warranted removal to improve the reliability of the variables. Furthermore as mentioned earlier, Cronbach's alpha can be used to narrow down the list of TPB items in a questionnaire (Ajzen, 2006). In general, items with a corrected item-total correlation of less than .30 were deleted from the questionnaire. Upon removal of these items, reliability improved. Furthermore, since some of the pilot study respondents commented that the questionnaire was too long, deleting these items had the added benefit of decreasing the questionnaire length by a page, thereby reducing respondent fatigue and encouraging greater participation.

5.7.3 Final Questionnaire Development

The final questionnaire incorporated the findings of the pilot study. The wording of instructions and questions were retained since respondents of the pilot study experienced no problems in understanding them. Minor alterations were made to the sequencing of items in Sections B, C, F and G due to deletions. Another difference between the pilot questionnaire and the final version was that for the multiple choice questions (Section H and Section I), there was an option for “Refuse to answer” in the pilot questionnaire. This was consistent with the questionnaire design of Lusardi and Mitchell (2011). However, pilot study respondents did not choose this option so it was removed, following the example of Potrich, Vieira, and Mendes-Da-Silva (2016).

5.8 Operationalisation and Measurement of Instrument

This section outlines the operationalisation and measurement of the independent variables, moderating variable, dependent variable and control variables of this study.

5.8.1 Independent Variables

There are seven independent variables in this research, the operationalisation and measurement of which are as follows.

5.8.1.1 Financial Statement Knowledge

This variable is defined as the actual knowledge level of individual investors of terms and concepts in financial statements contained in annual reports. These financial

statements are the balance sheet (statement of financial position), income statement and cash flow statement. Hence, this variable examines the objective financial statement knowledge of individual investors. As described in Chapter 3, a distinction is made between objective financial knowledge and subjective financial knowledge. The latter assesses self-perceived financial knowledge by respondent and is prone to bias and subjectivity. Objective financial knowledge is acknowledged as superior measure because it evaluates actual knowledge, and it is employed for this study. The variable was measured using eight multiple choice questions with four options each. Consistent with Lusardi and Mitchell (2011), included was the option for “Do not know”. The correct answers for each question were averaged to arrive at a final score for financial statement knowledge of the respondent. The list of questions is shown in Table 5.3.

Table 5.3: Financial Statement Knowledge Questions

Code	Item	To test knowledge of
I1	The net profit or loss of a particular period of time is reported on the... <input type="checkbox"/> Income Statement <input type="checkbox"/> Statement of Financial Position <input type="checkbox"/> Statement of Changes in Owners' Equity <input type="checkbox"/> Do not know	Income statement
I2	A statement of financial position is: <input type="checkbox"/> A statement listing the company's total assets less any liabilities and capital at a particular point in time <input type="checkbox"/> A statement listing what the company owes at a particular point in time <input type="checkbox"/> A statement listing the company's income and expenditure for the year <input type="checkbox"/> Do not know	Statement of financial position
I3	Depreciation is... <input type="checkbox"/> The amount spent to buy non-current assets <input type="checkbox"/> The part of the cost of the non-current asset consumed during its period of use by the firm <input type="checkbox"/> The amount of money spent replacing non-current assets <input type="checkbox"/> Do not know	Income statement, Statement of financial position

Table 5.3: Financial Statement Knowledge Questions (continued)

Code	Item	To test knowledge of
I4	Working capital is a term meaning... <input type="checkbox"/> The amount of capital invested by the company <input type="checkbox"/> The excess of the current assets over the current liabilities <input type="checkbox"/> The capital less drawings <input type="checkbox"/> Do not know	Statement of financial position
I5	Which of the following is a cash inflow? <input type="checkbox"/> Redemption of debentures <input type="checkbox"/> Rights issue <input type="checkbox"/> Bonus issue <input type="checkbox"/> Do not know	Cash flow statement
I6	From the following list identify a current liability <input type="checkbox"/> Accounts payable <input type="checkbox"/> Mortgage on the premises <input type="checkbox"/> Accounts receivable <input type="checkbox"/> Do not know	Statement of financial position
I7	Which of these would be included within non-current assets? <input type="checkbox"/> Inventories held for resale <input type="checkbox"/> Land and buildings <input type="checkbox"/> Short-term inventories and deposits <input type="checkbox"/> Do not know	Statement of financial position
I8	If the EPS is 12 sen and the market price of the share is RM3.60 the Price/Earnings ratio would be: <input type="checkbox"/> 3.33% <input type="checkbox"/> 3 times <input type="checkbox"/> 30 times <input type="checkbox"/> Do not know	Income statement, Ratio analysis

Sources: Larson, Jensen, and Carroll (2001), Wood and Sangster (2008a) and Wood and Sangster (2008b)

These eight questions assessed various aspects of financial statement knowledge such as familiarity with key concepts and ratio analysis. They were obtained from accounting textbooks, namely Larson et al. (2001), Wood and Sangster (2008a) and Wood and Sangster (2008b). While a larger set of questions would enable more detailed assessment of financial statement knowledge, the number of questions was limited to eight for the following reasons. Firstly, it was done to reduce respondent fatigue and secondly, to promote greater participation in the survey. The marketing personnel of the stock brokerage provided input that from their experience, clients

would be willing to answer up to eight knowledge questions and that too many questions would deter participation. This was supported by comments from some participants of the pilot study who expressed a preference for fewer questions. Thirdly, the number of questions is consistent with other studies that assess advanced financial knowledge, for example, Mahdzan and Tabiani (2013) and Lusardi (2015).

5.8.1.2 Investment Horizon Attitude

This is defined as the length of time the individual investors believe they will hold on to their stock investments based on their investment objectives. This variable examined the underlying goals respondents have in investing in stocks which in turn influences their annual report financial statements usage. The list of items for this variable is shown in Table 5.4 below.

Table 5.4: Investment Horizon Attitude Items

Code	Items
	The following list contains some frequent objectives that investors have in owning stocks. Please rate each of these objectives in terms of their importance to you:
B1	Long-term capital appreciation
B2	Dividend income
B3	To me, investing in stocks is a form of long-term savings.

Sources: Lease et al. (1974) and Monetary Authority of Singapore (2005)

The three items in the construct were obtained from the instruments of Lease et al. (1974) and the Monetary Authority of Singapore (2005). They were measured using a 7-point Likert scale. For items B1 and B2, the range was from irrelevant (1) to very important (7) while for B3, the range was highly disagree (1) to highly agree (7). The mean value of the three items denotes the investment horizon attitude with a higher number indicating an attitude that favours a longer investment horizon.

5.8.1.3 Investing Luck Attitude

This refers to the degree to which individual investors regard luck as playing a significant role when investing in stocks. Therefore, investors ranged from having low to high reliance on investing luck. Three items, shown in Table 5.5, measured this construct, each of which employed a 7-point Likert scale ranging from highly disagree (1) to highly agree (7). These items were obtained from the instruments used by Monetary Authority of Singapore (2005), Wood and Zaichkowsky (2004) and World Values Survey (2016).

Table 5.5: Investing Luck Attitude Items

Code	Items
C1	Investing in stocks is all about luck.
C2	When one of my investments performs poorly, I feel unlucky.
C3	Hard work doesn't generally bring success; it's more of a matter of luck and connections.

Sources: Monetary Authority of Singapore (2005), Wood and Zaichkowsky (2004) and World Values Survey (2016)

5.8.1.4 Trading Attitude

This is defined as the attitude investors have regarding how frequently they need to trade to make a profit on a stock. It indirectly measures the perceived holding period for a stock by individual investors. The list of items for this variable is shown in Table 5.6 on the following page. These items were adapted from the instrument by Lease et al. (1974) and suggestions by the expert panel. All three items were measured using a 7-point Likert scale ranging from strongly disagree (1) to strongly agree (7).

Table 5.6: Trading Attitude Items

Code	Items
D1	To me, the individual investor who regularly trades stocks is likely to fare better financially than the individual who holds out for the long run.
D2	To me, the more often I trade in stocks, the better my chances of making a profit on my investments.
D3	To me, trading costs increase the long-run compounded annualised growth rates of my stock investments.

Sources: Lease et al. (1974), expert panel.

5.8.1.5 Financial Statements Usage Attitude

This is defined as the extent to which individual investors perceive using financial statements in annual report as important. This variable was measured through three items using a 7-point Likert scale. Items were derived from the guidelines set in the theory of planned behaviour (Ajzen, 2006, 2011a) as well as the preliminary field interviews with experienced investors and validated by the expert panel. Table 5.7 lists out the items for this variable.

Table 5.7: Financial Statements Usage Attitude Items

Code	Items
E1	Financial statements in annual reports are important sources of information about the performance of companies.
E2	To me, using financial statements in annual reports to help make stock investment decisions is _____.
E3	To me, using financial statements in annual reports to help make stock investment decisions is _____.

References: Ajzen (2006) and Ajzen (2011a)

The range for item E1 was strongly disagree (1) to strongly agree (7) while it is unnecessary (1) to necessary (7) for item E2 and meaningless (1) to meaningful (7) for item E3.

5.8.1.6 Subjective Norm

Subjective norm is defined as the extent to which individual investors believe others who are significant to them as investors use annual report financial statements and expect them to do so as well. To measure subjective norm, Ajzen (2006) recommended including questions that can capture descriptive norms, meaning whether the behaviour in question is performed by significant others. In addition, questions with an injunctive quality can be asked to add variability to the structure of questions. Both descriptive and injunctive questions are employed in this questionnaire. A 7-point Likert scale was used to measure the four items for this construct. These items are shown in Table 5.8.

Table 5.8: Subjective Norm Items

Code	Items
F1	Most people close to me have regularly used financial statements in annual reports for the past 12 months to help them make investment decisions to buy or sell stocks.
F2	People whose opinions I respect as investors encourage me to use financial statements in annual reports for making investment decisions to buy or sell stocks.
F3	Most people like me regularly use financial statements in annual reports to help them make investment decisions to buy or sell stocks.
F4	The people in my life whose opinions I value as investors _____ financial statements in annual reports for the past 12 months to help them make investment decisions to buy or sell stocks.

References: Ajzen (2006) and Ajzen (2011a)

Similar to the previous variable, items were derived from the guidelines set in the theory of planned behaviour (Ajzen, 2006, 2011a) as well as the preliminary field interviews with investors and expert panel feedback. Items F1 to F3 ranged from strongly disagree (1) to strongly agree (7) while F4 ranged from do not use (1) to always use (7).

5.8.1.7 Perceived Behavioural Control

As mentioned in Chapter 4, perceived behavioural control is defined in the context of the study as individual investors' perceived ease or difficulty of understanding and using annual report financial statements. This is based on investors' level of confidence in using financial statements which in turn is influenced by their subjective annual report financial statements knowledge. The four items for this variable, shown in Table 5.9, were measured using a 7-point Likert scale.

Table 5.9: Perceived Behavioural Control Items

Code	Items
G1	I find financial statements in annual reports easy to understand.
G2	For the past 12 months, I have found it easy to use financial statements in annual reports when making decisions to buy or sell stocks.
G3	For the past 12 months, if I wanted to, I could have used financial statements in annual reports when making decisions to buy or sell stocks.
G4	Using financial statements in annual reports as sources of information to help me decide on whether to buy or sell stocks is...

References: Ajzen (2006) and Ajzen (2011a)

Ajzen (2006, p. 7) suggested that "a direct measure of perceived behavioral control should capture people's confidence that they are capable of performing the behavior under investigation". Hence, items should be related to the ease of performing a specific behaviour or the likelihood that it could be done by the respondent. Alternatively, respondents could be asked about the extent to which they believe they have control over the behaviour. As in the preceding TPB related sections, items were derived from the guidelines set in the theory of planned behaviour (Ajzen, 2006, 2011a) as well as the preliminary field interviews with investors and expert panel validation. Items G1 to G3 range from strongly disagree (1) to strongly agree (7) while G4 ranged from completely impossible (1) to completely possible (7).

5.8.2 Moderating Variable

In numerous studies, the moderating variable is categorical and the independent variable continuous. However, an influential paper on moderating and mediating variables by Baron and Kenny (1986) stated that both moderating and mediating variables can be continuous. TPB also makes allowances for continuous moderating variables (Ajzen, 2011b). The moderating variable in this study is termed diligence and it is defined as the degree to which individual investors demonstrate self-discipline and thoroughness. Four items were tested on self-discipline and thoroughness. These are shown in Table 5.10.

Table 5.10: Diligence Items

Code	Items
A1	I am self-disciplined.
A2	I spend considerable effort researching my investments.
A3	After I have spent a lot of time researching an investment, I am more likely to act on this information (buy or sell).
A4	I am a _____ person.

Sources: Tang et al. (2015) and Wood and Zaichkowsky (2004)

Items were derived from the instruments by Tang et al. (2015) and Wood and Zaichkowsky (2004). Items A1 to A3 were measured using a 7-point Likert scale ranging from strongly disagree (1) to strongly agree (7). Item A4 was measured using a 5-point Likert scale that ranges from careless (1) to thorough (5).

5.8.3 Dependent Variable

The dependent variable is annual report financial statements usage among Malaysian individual investors. It is operationalised as how often in the past 12 months, individual investors have used the three financial statements in annual reports as sources of

information when making decisions whether to buy or sell stocks. The three items for this variable were usage of balance sheet (statement of financial position), usage of income statement and usage of cash flow statement, respectively for investment decision-making to buy or sell stocks. The variable was measured using a 7-point Likert scale for each item which ranges from never (1) to always (7).

Ajzen (2006, p. 2) stated that the behaviour studied be defined according to “Target Action, Context, and Time”. Despite this specific nature of this definition, Ajzen (2006) pointed out that the generality of one or more of the elements can be increased through aggregation. Nonetheless, the principle of compatibility must be adhered to so that definitions of other constructs match the exact same elements. The target action in this study is the usage of annual report financial statements by individual investor and the context refers to investment decision-making purposes. 12 months was selected as the cutoff time for financial statements usage because field interviews with individual investors revealed that this is appropriate as investors would surely want to buy or sell shares within this time period and use financial statements for this purpose.

Once again, items were developed from the guidelines set in the theory of planned behaviour (Ajzen, 2006, 2011a) as well as preliminary field interviews with investors and validated by the expert panel. These items are shown in Table 5.11.

Table 5.11: Annual Report Financial Statements Usage Items

Code	Items
	Please estimate how often in the past 12 months you have used the following financial statements in annual reports to help you make a decision on whether to buy or sell a stock:
J1	Income statement
J2	Balance sheet (Statement of financial position)
J3	Cash flow statement

References: Ajzen (2006) and Ajzen (2011a)

5.8.4 Control Variables

Seven control variables are included in this study. They comprise basic financial knowledge and six demographic variables - gender, ethnicity, age group, education level, employment sector and investing experience. These are discussed as follows.

5.8.4.1 Basic Financial Knowledge

Prior studies show that basic financial knowledge influences financial behaviour (Atkinson & Messy, 2012; Loke, 2016; Lusardi & Mitchell, 2011). Therefore, the controlling effect of basic financial knowledge on the financial statements usage of individual investors needs to be taken into consideration.

Table 5.12: Basic Financial Knowledge Questions

Code	Item	To test knowledge of
H1	Suppose you had RM100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow? <input type="checkbox"/> More than RM102 <input type="checkbox"/> Exactly RM102 <input type="checkbox"/> Less than RM102 <input type="checkbox"/> Do not know	Interest rates
H2	Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, what would you be able to buy with the money in this account? <input type="checkbox"/> More than today <input type="checkbox"/> Exactly the same <input type="checkbox"/> Less than today <input type="checkbox"/> Do not know	Inflation
H3	Do you think that the following statement is true or false? –Buying a single company stock usually provides a safer return than a stock mutual fund.” <input type="checkbox"/> True <input type="checkbox"/> False <input type="checkbox"/> Do not know	Risk diversification

Source: Lusardi and Mitchell (2011)

Three multiple choice questions, shown in Table 5.12, were used to assess basic financial knowledge. These questions were obtained from the instrument by Lusardi and Mitchell (2011) which are widely used to assess basic financial knowledge.

5.8.4.2 Demographic Variables

As described in Chapter 3, numerous financial literacy studies reveal that demographic variables influence financial behaviour. Furthermore, in TPB, Azjen (2011b, p. 1123) noted that most empirical studies include demographic characteristics as control variables. The demographic variables employed in this study were converted into dummy variables, as shown in Table 5.13 below.

Table 5.13: Measurement of Dummy Variables

Control Variable	Dummy Variables
Gender	Male = 1, otherwise 0
Ethnicity	Malay = 1, otherwise 0 Chinese = 1, otherwise 0 Indian and Others = 1, otherwise 0
Age group	Twenties = 1, otherwise 0 Thirties = 1, otherwise 0 Forties = 1, otherwise 0 Fifties = 1, otherwise 0
Education level	SPM = 1, otherwise 0 Diploma = 1, otherwise 0 Bachelor = 1, otherwise 0 Postgraduate = 1, otherwise 0
Employment sector	Government = 1, otherwise 0 Private = 1, otherwise 0 Self employed = 1, otherwise 0 Not working = 1, otherwise 0
Investing experience	Less than one year = 1, otherwise 0 One to three years = 1, otherwise 0 Four to nine years = 1, otherwise 0 Ten years or more = 1, otherwise 0

The control variables for this study were gender, ethnicity, age group, education level, employment sector and investing experience. The combination of these demographic variables as control variables emulated the study by Chung and Park (2014) as it was deemed most apt for this research.

5.9 Data Analysis Procedure

Data collected from questionnaires were subject to several statistical analyses using Statistical Package for the Social Sciences (SPSS) software. Steps in the data analysis procedure are described as follows.

5.9.1 Data Screening and Cleaning

Prior to data entry, a codebook was prepared. The codebook was the point of reference in determining whether there were errors in data entry. The two step procedure suggested by Pallant (2011) was adopted. The first step was to check whether data were out of range (outliers) and the second was to find and rectify errors in the data file. This entailed rechecking the questionnaires to determine the errors. Apart from errors, missing data and how to remedy it is problematic for any researcher. Hair et al. (2010) stated that the type of missing data must be determined to decide on the appropriate course of action. Some missing data are ignorable while others are not. The extent and the randomness of the missing data were then determined before a missing data treatment method was selected. However, the various methods such as substituting either a neutral value or imputed response or deletions (casewise or pairwise) have their own limitations which could pose challenges at the analysis stage

(Hair et al., 2010). To overcome this problem, data was screened prior to entry to remove questionnaires with missing responses.

5.9.2 Tabulation of Mean Scores

Data manipulation entails transforming raw data in a useable form to perform analyses and test hypotheses (Pallant, 2011). One such manipulation is the tabulation of mean or average scores for each variable. The continuous financial knowledge variables were collapsed into categorical variables, namely, low, medium and high basic financial knowledge as well as low, medium and high financial statement knowledge. Furthermore, the six demographic variables were converted into dummy variables using the classification method shown in Table 5.13.

5.9.3 Descriptive Statistics

Descriptive statistics such as frequencies and percentages were calculated for the six demographic variables, namely gender, ethnicity, age group, education level, employment sector and investing experience. Additionally, the frequency and percentages of responses for the financial knowledge questions were computed to show how many respondents answered correctly, incorrectly and did not know the answer to each question. Other descriptive statistics that were calculated comprised the mean, median and standard deviation for each non-categorical item.

5.9.4 Factor Analysis

Factor analysis is a data reduction technique (Pallant, 2011, p. 181). There are two types of factor analysis, namely exploratory factor analysis (EFA) and confirmatory factor analysis. The former seeks to identify underlying dimensions or factors that explain the correlation among a set of variables (Malhotra, 2010, p. 739). The latter is a precursor of structural equation modeling (SEM). In this research, principal component analysis (PCA) was done to identify the number of factors extracted based on the items in the questionnaire and to ascertain if they corresponded with the intended variables. The items were rotated orthogonally (varimax) to identify the rotated component matrix for the various components.

5.9.5 Reliability Analysis

The variables of this research were measured using scales. Scale reliability is important for any study (Pallant, 2011). Two methods were used to assess scale reliability of both the pilot study and research data. The first was Cronbach's alpha. An alpha of 0.7 and above is generally required, though a value of .60 and above is acceptable for exploratory research (Hair et al., 2010, p. 125). However, Pallant (2011, p. 97) noted that alpha values are quite sensitive to the number of items in the scale and that in short scales with fewer than ten items, it is common to find alpha values as low as .5. The second method was to examine the corrected item to total correlations. According to Field (2009, p. 678), if the correlation value is less than .3, the corresponding item does not correlate well with the overall scale and should be omitted.

5.9.6 Tests for Statistical Assumptions

According to Hair et al. (2010), there are four fundamental assumptions in statistical theory. These are normality, homoscedasticity, linearity and multicollinearity. Appropriate statistical tests were done for each of these assumptions for data obtained for this research. Parametric statistical analysis can only be done on data that fulfil these four statistical assumptions so these tests are vital.

A normal distribution of data is bell-shaped, symmetrical, and has identical measures of central tendency (Malhotra, 2010). However, as Pallant (2011, p. 92) observed, the scores of measurement scales often do not fall into a nice, normally distributed curve. The issue here is how much the distribution veers from normality. According to Hair et al. (2010, p. 71), “If the variation from the normal distribution is sufficiently large, all resulting statistical tests are invalid, because normality is required to use the F and t statistics”. For this study, normality was assessed based on skewness and kurtosis. A threshold of between -1.00 and $+1.00$ is regarded as an acceptable range for normality and values that exceed these are regarded as significant departures from normality (Morgan, Griego, & Gloeckner, 2001).

Homoscedasticity refers to the assumption where “the variability in scores for one continuous variable is roughly the same at all values of another continuous variable” (Tabachnick & Fidell, 2007, p. 85). Homoscedasticity is desired to demonstrate that the variance of the dependent variable in the dependency relationship is not merely confined to a narrow range of the independent values (Hair et al., 2010). Homoscedasticity was assessed graphically through the scatterplot of the regression standardised residual.

It is assumed that the relationship between the dependent variable and independent variables as per regression analysis is linear. Linearity was assessed using the normal probability plots of each variable and the regression standardised residual.

Multicollinearity is defined as “the extent to which a variable can be explained by other variables in the analysis” (Hair et al., 2010, p. 93). Multicollinearity among the independent variables was assessed using the correlation matrix, tolerance and variance inflation factor (VIF). First, the correlation matrix of the independent variables was examined. Correlations of .90 and more denoted substantial collinearity (Hair et al., 2010). Next, multicollinearity was assumed to be present when the tolerance value was less than .10 and a VIF value of above 10 (Pallant, 2011).

5.9.7 Preliminary Analysis

Three types of preliminary analysis were done. Firstly, a series of independent samples T-test was performed. Such tests are employed to compare the mean scores of a continuous dependent variable and one independent variable with two categories (Pallant, 2011) and the T-tests that were performed for this study was to examine gender differences among the dependent variable and predictor variables. Secondly, a series of Analysis of Variance (ANOVA) was conducted on the remaining five demographic variables (ethnicity, age group, education level, employment sector and investing experience) and the dependent variable as well as predictor variables. These five variables had more than two categories each, so T-tests could not be performed. ANOVA was used to determine if samples from two or more groups had significant differences (Hair et al., 2010). The effect size of T-tests and ANOVA differences was

evaluated based on the guidelines proposed by Cohen (1988)⁵⁵. Finally, correlation analysis was done. This type of analysis involves determining the correlation coefficient which is “an index that quantifies the linear relationship between a pair of variables” (Everitt & Skrondal, 2010, p. 107). The coefficient ranges from -1.0 which indicates a perfect negative correlation to +1.0 which indicates a perfectly positive correlation. The correlations among variables were tabulated using Pearson’s product moment correlation coefficient⁵⁶.

5.9.8 Multiple Regression Analysis

According to Hair et al. (2010), multiple regression analysis is used to analyse the relationship between one dependent variable and several independent variables. Hierarchical multiple regression analysis was done to analyse the relationship between annual report financial statement usage (dependent variable), seven independent variables which are financial statement knowledge, investor horizon attitude, investing luck attitude, trading frequency attitude, financial statements usage attitude, subjective norm and perceived behavioural control, and one moderating variable term diligence. The control variables are basic financial knowledge, gender, ethnicity, age group, education level, employment sector and investing experience.

Hierarchical multiple regression analysis was done because this method allows the researcher to examine the unique contribution of each predictor that is added to the model, controlling for the effects of other predictor variables and it allows for the tabulation of the effect size of the variable. Several scholars have noted that it is

⁵⁵ In which a small effect size is denoted when $\eta^2 = .01$, medium effect size when $\eta^2 = .06$ and a large effect size when $\eta^2 = .14$ (Cohen, 1988, pp. 284 - 287).

⁵⁶ These were interpreted as small ($r = .10$ to $.29$), medium ($r = .30$ to $.49$) and large ($r = .50$ to 1.0) (Cohen, 1988, pp. 79 - 81).

insufficient to merely examine the statistical significance of the variable as the effect size should be ascertained as well (Altman, 2004; McCloskey & Zikial, 1996; Ziliak & McCloskey, 2004). Hence, the effect size of the predictor variables was determined in addition to their statistical significance. The effect size was evaluated via Cohen's f^2 , which is more appropriate for multiple regression analysis (Cohen, 1988)⁵⁷. Four research models were developed and are described as follows.

Model 1

In this first iteration, the influence of the six demographic variables and basic financial knowledge on the dependent variable was examined. This model is expressed in the following equation:

$$\begin{aligned} \text{Usage}_i = & \beta_0 + \beta_1 \text{BFK}_i + \beta_2 \text{Male}_i + \beta_3 \text{Malay}_i + \beta_4 \text{IndianOthers}_i + \beta_5 \text{Thirties}_i + \beta_6 \text{Forties}_i \\ & + \beta_7 \text{Fifties}_i + \beta_8 \text{SPM}_i + \beta_9 \text{Bachelor}_i + \beta_{10} \text{Postgraduate}_i + \beta_{11} \text{Government}_i + \\ & \beta_{12} \text{Selfemployed}_i + \beta_{13} \text{Notworking}_i + \beta_{14} \text{Lessthanoneyear}_i + \beta_{15} \text{Fourtonineyears}_i + \\ & \beta_{16} \text{Tenyyearsormore}_i + \varepsilon_i \end{aligned}$$

Where:

Usage_i = Annual report financial statements usage; BFK_i = Basic financial knowledge; Male_i = Male; Malay_i = Malay; IndianOthers_i = Indian or Others; Thirties_i = 30-39; Forties_i = 40-49; Fifties_i = 50-59; SPM_i = SPM; Bachelor_i = Bachelor degree; Postgraduate_i = Master or PhD degree; Government_i = Government sector;

⁵⁷ Here, a small effect size is denoted when Cohen's $f^2 = 0.02$, medium effect size when Cohen's $f^2 = 0.15$ and a large effect size when Cohen's $f^2 = 0.35$ (Cohen, 1988, pp. 410 - 413).

Selfemployed_{*i*} = Self-employed; Notworking_{*i*} = Pensioner or unemployed;
 Lessthanoneyear_{*i*} = Less than one year investing experience; Fourtonineyears_{*i*} = 4-9
 years investing experience; Tenyearsormore_{*i*} = Ten or more years investing experience;
 ε_i = error

Model 2

In this second iteration, the influence of seven predictor variables on the dependent variable was examined. The demographic variables and basic financial knowledge were regarded as control variables. This relationship is expressed in the following equation:

$$\begin{aligned} \text{Usage}_i = & \beta_0 + \beta_1 \text{BFK}_i + \beta_2 \text{Male}_i + \beta_3 \text{Malay}_i + \beta_4 \text{IndianOthers}_i + \beta_5 \text{Thirties}_i + \beta_6 \text{Forties}_i \\ & + \beta_7 \text{Fifties}_i + \beta_8 \text{SPM}_i + \beta_9 \text{Bachelor}_i + \beta_{10} \text{Postgraduate}_i + \beta_{11} \text{Government}_i + \\ & \beta_{12} \text{Selfemployed}_i + \beta_{13} \text{Notworking}_i + \beta_{14} \text{Lessthanoneyear}_{it} + \beta_{15} \text{Fourtonineyears}_i + \\ & \beta_{16} \text{Tenyearsormore}_i + \beta_{17} \text{FSK}_i + \beta_{18} \text{Horizon}_i - \beta_{19} \text{Luck}_i - \beta_{20} \text{Trading}_i + \\ & \beta_{21} \text{UsageAttitude}_i + \beta_{22} \text{SubjectiveNorm}_i + \beta_{23} \text{PCB}_i + \varepsilon_i \end{aligned}$$

Where:

Usage_{*i*} = Annual report financial statements usage; BFK_{*i*} = Basic financial knowledge;
 Male_{*i*} = Male; Malay_{*i*} = Malay; IndianOthers_{*i*} = Indian or Others; Thirties_{*i*} = 30-39;
 Forties_{*i*} = 40-49; Fifties_{*i*} = 50-59; SPM_{*i*} = SPM; Bachelor_{*i*} = Bachelor degree;
 Postgraduate_{*i*} = Master or PhD degree; Government_{*i*} = Government sector;
 Selfemployed_{*i*} = Self-employed; Notworking_{*i*} = Pensioner or unemployed;
 Lessthanoneyear_{*i*} = Less than one year investing experience; Fourtonineyears_{*i*} = 4-9
 years investing experience; Tenyearsormore_{*i*} = Ten or more years investing experience;
 FSK_{*i*} = Financial statement knowledge; Horizon_{*i*} = Investment horizon attitude; Luck_{*i*} =

Investing luck attitude; $Trading_i$ = Trading attitude; $UsageAttitude_i$ = Financial statements usage attitude; $SubjectiveNorm_i$ = Subjective norm; PCB_i = Perceived behavioural control; ε_i = error

Model 3

In this third iteration, the variable “Diligence” was added as a predictor variable while the variables listed in Model 2 were held as control variables. The equation for Model 3 is as follows:

$$Usage_i = \beta_0 + \beta_1 BFK_i + \beta_2 Male_i + \beta_3 Malay_i + \beta_4 IndianOthers_i + \beta_5 Thirties_i + \beta_6 Forties_i + \beta_7 Fifties_i + \beta_8 SPM_i + \beta_9 Bachelor_i + \beta_{10} Postgraduate_i + \beta_{11} Government_i + \beta_{12} Selfemployed_i + \beta_{13} Notworking_i + \beta_{14} Lessthanoneyear_{it} + \beta_{15} Fourtonineyears_i + \beta_{16} Tenyearsormore_i + \beta_{17} FSK_i + \beta_{18} Horizon_i - \beta_{19} Luck_i - \beta_{20} Trading_i + \beta_{21} UsageAttitude_i + \beta_{22} SubjectiveNorm_i + \beta_{23} PCB_i + \beta_{24} Diligence_i + \varepsilon_i$$

Where:

$Usage_i$ = Annual report financial statements usage; BFK_i = Basic financial knowledge; $Male_i$ = Male; $Malay_i$ = Malay; $IndianOthers_i$ = Indian or Others; $Thirties_i$ = 30-39; $Forties_i$ = 40-49; $Fifties_i$ = 50-59; SPM_i = SPM; $Bachelor_i$ = Bachelor degree; $Postgraduate_i$ = Master or PhD degree; $Government_i$ = Government sector; $Selfemployed_i$ = Self-employed; $Notworking_i$ = Pensioner or unemployed; $Lessthanoneyear_i$ = Less than one year investing experience; $Fourtonineyears_i$ = 4-9 years investing experience; $Tenyearsormore_i$ = Ten or more years investing experience; FSK_i = Financial statement knowledge; $Horizon_i$ = Investment horizon attitude; $Luck_i$ = Investing luck attitude; $Trading_i$ = Trading attitude; $UsageAttitude_i$ = Financial

statements usage attitude; SubjectiveNorm_{*i*} = Subjective norm; PCB_{*i*} = Perceived behavioural control; Diligence_{*i*} = Diligence; ε_i = error

Model 4

In this final iteration, the moderator was added as a predictor variable. The variables listed in Model 3 were held as control variables. The equation for Model 4 is as follows:

$$\begin{aligned} Usage_i = & \beta_0 + \beta_1 BFK_i + \beta_2 Male_i + \beta_3 Malay_i + \beta_4 IndianOthers_i + \beta_5 Thirties_i + \beta_6 Forties_i \\ & + \beta_7 Fifties_i + \beta_8 SPM_i + \beta_9 Bachelor_i + \beta_{10} Postgraduate_i + \beta_{11} Government_i + \\ & \beta_{12} Selfemployed_i + \beta_{13} Notworking_i + \beta_{14} Lessthanoneyear_{it} + \beta_{15} Fourtonineyears_i + \\ & \beta_{16} Tenyearsormore_i + \beta_{17} FSK_i + \beta_{18} Horizon_i - \beta_{19} Luck_i - \beta_{20} Trading_i + \\ & \beta_{21} UsageAttitude_i + \beta_{22} SubjectiveNorm_i + \beta_{23} PCB_i + \beta_{24} Diligence_i + \beta_{25} FSK * Diligence_i \\ & \varepsilon_i \end{aligned}$$

Where:

Usage_{*i*} = Annual report financial statements usage; BFK_{*i*} = Basic financial knowledge; Male_{*i*} = Male; Malay_{*i*} = Malay; IndianOthers_{*i*} = Indian or Others; Thirties_{*i*} = 30-39; Forties_{*i*} = 40-49; Fifties_{*i*} = 50-59; SPM_{*i*} = SPM; Bachelor_{*i*} = Bachelor degree; Postgraduate_{*i*} = Master or PhD degree; Government_{*i*} = Government sector; Selfemployed_{*i*} = Self-employed; Notworking_{*i*} = Pensioner or unemployed; Lessthanoneyear_{*i*} = Less than one year investing experience; Fourtonineyears_{*i*} = 4-9 years investing experience; Tenyearsormore_{*i*} = Ten or more years investing experience; FSK_{*i*} = Financial statement knowledge; Horizon_{*i*} = Investment horizon attitude; Luck_{*i*} = Investing luck attitude; Trading_{*i*} = Trading attitude; UsageAttitude_{*i*} = Financial

statements usage attitude; SubjectiveNorm_{*i*} = Subjective norm; PCB_{*i*} = Perceived behavioural control; Diligence_{*i*} = Diligence; FSK*Diligence_{*i*} = Moderator ε_i = error

5.10 Chapter Summary

This chapter outlined the research methodology of the study. In short, positivism was selected as the research paradigm as it is the most suitable for fulfilling the research objectives. This is an explanatory study that adopts the hypothetico-deductive approach. The research population consists of individual investors in Malaysia. Based on a 95% confidence level and a 5% margin of error, the minimum sample size is 384 individuals. A printed seven page self-administered questionnaire was the research instrument. Details on questionnaire design as well as the operationalisation and measurement of instruments were described. Respondents comprised clients of a major stock brokerage firm from Kuala Lumpur, Johor Bahru and Penang. The data analysis procedure was also discussed. Prior to analysis, data was screened and cleaned. The average scores for each variable were tabulated. The statistical procedures employed comprised generation of descriptive statistics, factor analysis, tests of normality, reliability analysis, T-tests, ANOVA and multiple regression analysis. The next chapter discusses the findings of this study. Figure 5.1 on the following page summarises the research process.

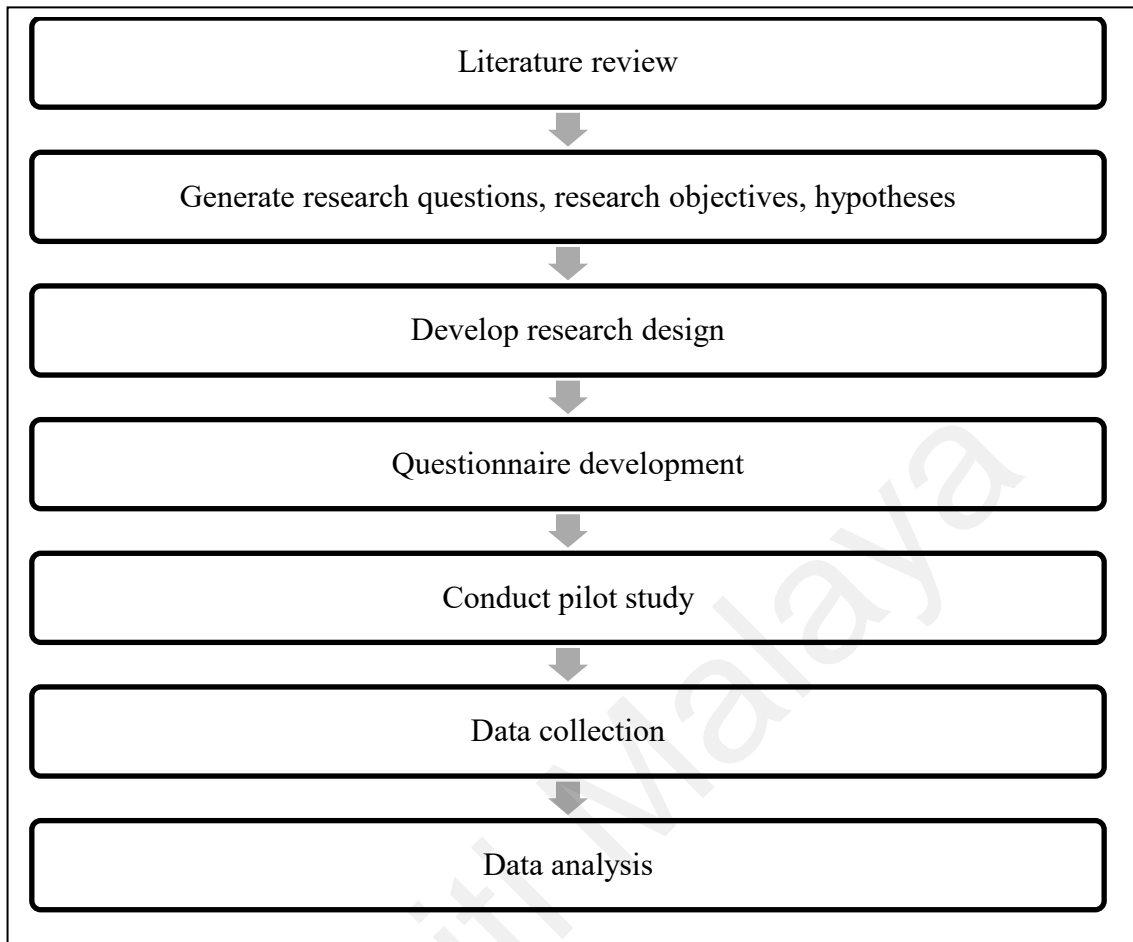


Figure 5.1: Research Process

The next chapter discusses the findings of the study.

CHAPTER 6: FINDINGS

6.1 Introduction

This chapter reports the findings of this study. It begins with the data collection results in Section 6.2 and then describes the profile of respondents in Section 6.3. Results of the financial knowledge and usage of annual report financial statements by investors are reported in Section 6.4 and Section 6.5 respectively. This is followed by the descriptive statistics in Section 6.6. Next are the findings of factor analysis (Section 6.7), reliability tests (Section 6.8) and the statistical assumptions tests (Section 6.9). Section 6.10 displays the findings for demographic differences among variables. The correlations and multiple regression analysis results are then reported in Section 6.11 and Section 6.12 respectively. The results of hypothesis testing are presented in Section 6.13 and Section 6.14 is a chapter summary.

6.2 Data Collection Results

Data collection commenced in mid-August 2016 and concluded in mid-November 2016. Printed questionnaires were submitted in advance to personnel of the stock brokerage firm who distributed the questionnaires to respondents during weekend investor talks conducted by the firm. The seminars during which questionnaires were distributed were held between August 20, 2016 and November 12, 2016. The researcher collected the completed questionnaires from the stock brokerage firm in stages.

In total 423 individuals attended the various seminars but a few declined to participate in the survey. Questionnaires from 414 respondents were received. Out of these, 15 contained one or more incomplete answers and were not included in the final sample. This left a total of 399 usable questionnaires for analysis, which is adequate since the minimum sample size requirement is 384 respondents. The high response rate of 94.3% mitigates the non-response bias that might occur. The next section describes the profile of respondents.

6.3 Profile of Respondents

Of the total 399 respondents, 57.6% or 230 were males while the remaining 169 were females. Compared to previous research on individual investors in Malaysia which were dominated by male respondents (Jamal et al., 2014; Khan et al., 2016; Lai et al., 2013; Nik Muhammad & Abdullah, 2009; Yeoh, 2010), this study had a higher percentage of female respondents. This might be due to the comparatively high number of female participants during the investment seminars during which the survey was conducted.

Chinese comprised 64.4% of respondents while 19.3% were Malays and 15.8% Indians. The remaining 0.5% of respondents was of other ethnic groups. While the racial composition does not reflect Malaysian demographics, it is indicative of the individual investor population. As pointed out by Yeoh (2010), despite Malays being the majority, their percentage of direct stock ownership is approximately 22%, while Indian stock ownership is the lowest of the three. Hence, the three major races are sufficiently represented in the sample.

The majority of respondents were below the age of 40. The largest group (48.9%) was in their 20s followed by those in their 30s (34.3%). Those in their 40s and 50s comprised 14.0% and 2.8% of respondents respectively. In terms of educational attainment, 78.9% of respondents had a diploma qualification or above. The figures were higher than the national average of 16.37% (Ministry of Education Malaysia, 2016) and suggestive of the relationship between educational attainment and stock ownership (van Rooij et al., 2007).

77.9% of respondents were employed in the private sector and 14.5% were self-employed. Merely 3.8% were from the government sector while another 3.5% were unemployed (such as housewives and students) and the remaining 0.3% consisted of pensioners. The very large percentage of private sector employees and the self-employed is unsurprising since individuals in these categories are entirely responsible for their retirement savings and need to augment them through investing. In contrast, government sector employees are guaranteed pensions and other benefits such as healthcare upon retirement, so they have less urgency to invest. A study by Duasa and Abdullah Yusof (2013) found that government employees in Malaysia had lower risk tolerance and this might also account for their low stock market participation.

Many of the respondents had three years or less of stock investing experience. 10.8% were new investors who had less than one year's experience while another 55.6% had experience investing in stocks between one and three years. 30.6% of respondents had four to nine years' experience while 3.0% reported having 10 years' or more of experience. Table 6.1 summarises the profile of respondents.

Table 6.1: Profile of Respondents

Demographic characteristics		Frequency (N=399)	Percentage (%)
Gender	Male	230	57.6
	Female	169	42.4
Ethnicity	Malay	77	19.3
	Chinese	257	64.4
	Indian	63	15.8
	Others	2	0.5
Age group	21 to 29	195	48.9
	30 to 39	137	34.3
	40 to 49	56	14.0
	50 to 59	11	2.8
Education level	SPM ⁵⁸	84	21.1
	Diploma ⁵⁹	239	59.9
	Bachelor degree ⁶⁰	63	15.8
	Master degree	12	3.0
	PhD degree	1	0.2
Employment sector	Government	15	3.8
	Private	311	77.9
	Self-employed	58	14.5
	Pensioner	1	0.3
	Unemployed	14	3.5
Investing experience	Less than 1 year	43	10.8
	1 to 3 years	222	55.6
	4 to 9 years	122	30.6
	10 years or more	12	3.0

6.4 Financial Knowledge of Respondents

The financial knowledge of respondents is discussed in some detail because it is an indicator of their aptitude to use financial statements.

⁵⁸ Full name in Malay: Sijil Pelajaran Malaysia or Malaysian Certificate of Education. Equivalent to the General Certificate of Education: Ordinary Level (GCE O Level).

⁵⁹ On average a two year course post-SPM which is equivalent to an associate degree.

⁶⁰ In Malaysia, the entry requirement for a bachelor degree is the Sijil Tinggi Pelajaran Malaysia (STPM) or matriculation qualification, both of which are equivalent to the General Certificate of Education: Advanced Level (GCE A Level), and the duration of a bachelor's degree ranges from three to four years (five years for a medical degree). However, students with a diploma qualification can gain entry into an undergraduate programme and are exempted from the first year of the course.

6.4.1 Basic Financial Knowledge

Conventional wisdom assumes that investors are more financially sophisticated than non-investors and should possess higher financial knowledge. Findings in this study reveal a somewhat different picture.

Table 6.2: Correct Responses to Basic Financial Knowledge Questions

Number of Correct Answers	Frequency (N=399)	Percentage (%)
0	21	5.3
1	130	32.6
2	221	55.4
3	27	6.7

Table 6.2 presents the number of correct responses for basic financial knowledge questions. To recap, these are the three questions by Lusardi and Mitchell (2011) mentioned in Chapter 5. A majority of respondents possessed moderate levels of basic financial knowledge with 55.4% obtaining two correct answers while 6.7% correctly answered all three questions. Even so, 32.6% of respondents were only able to answer one question correctly and 5.3% of respondents could not answer any of the three questions correctly. How well respondents fared in each question are shown in Table 6.3 below.

Table 6.3: Breakdown of Responses to Basic Financial Knowledge Questions

Question	Response	Frequency (N=399)	Percentage (%)
H1	Correct	88	22.0
	Incorrect	276	69.2
	Do not know	35	8.8
H2	Correct	252	63.2

Table 6.3: Breakdown of Responses to Basic Financial Knowledge Questions (continued)

Question	Response	Frequency (N=399)	Percentage (%)
H2	Incorrect	107	26.8
	Do not know	40	10.0
H3	Correct	313	78.4
	Incorrect	41	10.3
	Do not know	45	11.3

Of the three questions, respondents seemed to find H1 the most difficult. Merely 22.0% of respondents gave the correct answer to question H1. This is unfortunate since this question is designed to evaluate basic mathematical ability regarding interest calculation. Respondents fared better in question H2 as 63.2% could answer it correctly and fared their best in question H3 with 78.4% providing the correct answer, indicating that they had a better understanding of the time value of money and diversification of risk, respectively. A comparison is made with other studies in Malaysia that adopt similar questions, as shown in Table 6.4 below.

Table 6.4: Percentage of Correct Answers in Comparable Studies

Author(s)	Percentage of Correct Answers		
	Interest calculation	Inflation	Diversification
Loke (2015)	54.3	59.0	43.8
Ali et al. (2015)	22.0	61.7	Not applicable

Therefore, the findings of the study are comparable with others that employ similar instruments for other groups of people. This indicates that individual investors do not have higher levels of basic financial knowledge than the general population, which supports the assertion by Altman (2012, p. 677) that stock ownership does not improve financial literacy. The next section shows how well respondents fared in financial statement knowledge questions.

6.4.2 Financial Statement Knowledge

High financial statement knowledge is essential for effectively understanding financial statements. As indicated in Table 6.5 below, respondents demonstrated fairly high levels of financial statement knowledge. The largest group comprised respondents who obtained six correct answers (26.3%). Another 21.1% of respondents answered seven questions correctly but only one respondent or 0.2% of the sample got all correct answers. On the other end of the spectrum, eight respondents or 2.0% of the sample did not answer any question correctly.

Table 6.5: Correct Responses to Financial Statement Knowledge Questions

Number of correct answers	Responses (N=399)	Percentage (%)
0	8	2.0
1	19	4.8
2	30	7.5
3	44	11.0
4	47	11.8
5	61	15.3
6	105	26.3
7	84	21.1
8	1	0.2

These responses are further categorised into low, medium and high levels of financial statement knowledge, using a scoring method similar to other studies (Atkinson & Messy, 2012; Loke, 2015). Those who fall in the low category scored 3 or less while those in the medium category scored from 4 to 6. Those who scored 7 or 8 were categorised as possessing high financial statement knowledge. As indicated in Table 6.6, 25.3% of respondents possessed low financial statement knowledge while another 53.4% had medium financial statement knowledge. Approximately 21.3% of respondents had high financial statement knowledge.

Table 6.6: Levels of Financial Statement Knowledge among Respondents

Level	Responses (N=399)	Percentage (%)
Low	101	25.3
Medium	213	53.4
High	85	21.3

The breakdown of responses for financial statement knowledge questions is shown in Table 6.7 below.

Table 6.7: Breakdown of Responses to Financial Statement Knowledge Questions

Question	Response	Frequency (N=399)	Percentage (%)
I1	Correct	281	70.4
	Incorrect	73	18.3
	Do not know	45	11.3
I2	Correct	297	74.4
	Incorrect	58	14.5
	Do not know	44	11.1
I3	Correct	311	77.9
	Incorrect	58	14.5
	Do not know	30	7.5
I4	Correct	66	16.5
	Incorrect	295	73.9
	Do not know	38	9.5
I5	Correct	172	43.1
	Incorrect	177	44.4
	Do not know	50	12.5
I6	Correct	270	67.7
	Incorrect	84	21.1
	Do not know	45	11.2
I7	Correct	278	69.7
	Incorrect	87	21.8
	Do not know	34	8.5
I8	Correct	255	63.9
	Incorrect	71	17.8
	Do not know	73	18.3

70.4% of respondents correctly answered question I1 which was on the concept of net profit/loss while 74.4% understood what a statement of financial position shows (question I2). 77.9% of respondents were familiar with the concept of depreciation (question I3). However, merely 16.5% correctly answered question I4 which was on the meaning of the term “working capital”. Fewer than half, or 43.1% of respondents understood what is a cash inflow (question I5) while 67.7% were able to identify a current liability (question I6). 69.7% of respondents were able to correctly answer question I7 which was to identify a non-current asset. Many respondents (63.9%) possessed the ability to calculate the accounting ratio question (I8).

6.5 Annual Report Financial Statements Usage

This study provides empirical evidence of the extent of annual report financial statement usage among individual investors in Malaysia. The level of usage of the three main financial statements in annual reports among individual investors is summarised in Table 6.8 below. The income statement had the highest mean score followed by the cash flow statement and the balance sheet. Hence, it is inferred that the income statement was the most widely used financial statements among respondents. The cash flow statement was the second most widely used and the balance sheet the least widely used of the three financial statements.

Table 6.8: Annual Report Financial Statements Usage among Respondents

Type of Financial Statement	Mean	Median	Standard deviation	Min	Max
Income statement	4.11	4.00	1.41	1	7
Balance sheet	3.77	4.00	1.38	1	7
Cash flow statement	3.95	4.00	1.55	1	7

6.6 Descriptive Statistics

Table 6.9 below summarises the descriptive statistics of the variables and items studied including the moderating variable and control variable for basic financial knowledge.

Table 6.9: Descriptive Statistics

Variable	Item	N	Min	Max	Mean	Std. Deviation	Variable Mean
Diligence	A1	399	1	7	4.26	1.43	4.00
	A2	399	1	7	4.04	1.35	
	A3	399	1	7	4.28	1.38	
	A4	399	1	5	3.42	0.93	
Investment horizon attitude	B1	399	1	7	5.04	1.15	4.92
	B2	399	1	7	5.06	1.20	
	B3	399	1	7	5.07	1.20	
Investing luck attitude	C1	399	1	7	4.66	1.40	4.58
	C2	399	1	7	4.46	1.37	
	C3	399	1	7	4.63	1.34	
Trading attitude	D1	399	1	7	4.72	1.19	4.60
	D2	399	1	7	4.68	1.32	
	D3	399	1	7	4.38	1.25	
Financial statements usage attitude	E1	399	1	7	4.53	1.33	4.42
	E2	399	1	7	4.37	1.31	
	E3	399	1	7	4.35	1.38	
Subjective norm	F1	399	1	7	4.39	1.36	4.29
	F2	399	1	7	4.27	1.38	
	F3	399	1	7	4.20	1.47	
	F4	399	1	7	4.31	1.39	
Perceived behavioural control	G1	399	1	7	4.21	1.35	4.31
	G2	399	1	7	4.47	1.42	
	G3	399	1	7	4.17	1.34	
	G4	399	1	7	4.38	1.31	

Table 6.9: Descriptive Statistics (continued)

Variable	Item	N	Min	Max	Mean	Std. Deviation	Variable Mean
Basic financial knowledge	H1	399	0	1	0.22	0.42	0.44
	H2	399	0	1	0.63	0.48	
	H3	399	0	1	0.78	0.41	
Financial statement knowledge	I1	399	0	1	0.70	0.46	0.61
	I2	399	0	1	0.74	0.44	
	I3	399	0	1	0.78	0.42	
	I4	399	0	1	0.17	0.37	
	I5	399	0	1	0.43	0.50	
	I6	399	0	1	0.68	0.47	
	I7	399	0	1	0.70	0.46	
	I8	399	0	1	0.64	0.48	
Annual report financial statements usage	J1	399	1	7	4.11	1.41	3.94
	J2	399	1	7	3.77	1.38	
	J3	399	1	7	3.95	1.55	

The minimum range for items H1 to I8 was 0 and the maximum range was 1 because these are knowledge questions in which respondents scored either 1 if the answer was correct or 0 if the answer was wrong. For item A4, the minimum score was 1 and the maximum score was 5 because that was the maximum limit for that item. For all other items, the range was between 1 and 7. No outliers were identified as responses were within the ranges set for each variable and item.

6.7 Factor Analysis

A principal component analysis (PCA) was conducted on 27 scale items of the questionnaire. Before performing the PCA, the suitability of data for factor analysis was ascertained. The correlation matrix showed the presence of many coefficients with .3 and above. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) value

was .87 which exceeded the recommended value (Pallant, 2011). Bartlett's Test of Sphericity $\chi^2 (351) = 5386.87, p < .001$, demonstrating that the correlations between items were sufficiently large for PCA. Eight components had eigenvalues of more than 1 and in combination explained over 72% of the variance. The scree plot supported this position and it was decided to retain all 8 components. For samples of 350 and above, factor loadings of .3 are statistically significant (Hair et al., 2010, p. 117) and this basis was adopted when examining the factor loadings for the components. Table 6.10 as follows shows the factor loadings after varimax rotation.

Table 6.10: Factor Loadings for Exploratory Factor Analysis with Varimax Rotation

Items	1	2	3	4	5	6	7	8
F4	.81	.11	.21	.06	.02	.03	.17	.09
F3	.80	.08	.20	-.03	.10	.07	.02	.07
F1	.74	.12	.22	.02	.04	.26	.02	.01
F2	.73	.09	.19	.12	.05	.28	.19	.08
A1	.16	.85	.06	.05	.02	.04	-.06	.07
A2	.05	.83	.12	.09	.10	.02	.01	.05
A3	.11	.82	.04	.03	-.01	-.14	.04	.10
A4	.04	.78	.07	.07	.01	.08	.09	.03
G4	.21	.10	.80	.08	-.05	.16	-.05	.05
G3	.29	.13	.73	.13	.08	.08	.13	.20
G2	.26	.12	.67	.04	.09	.21	.10	.14
G1	.04	.02	.65	.07	.02	.24	.09	.28
C3	.01	.09	.07	.85	.13	.13	.11	-.02
C1	.04	.10	.09	.84	.09	.07	-.03	-.03
C2	.03	.04	.06	.83	.08	-.14	.11	.10
D1	.09	.04	.09	.04	.86	.04	.03	-.03
D2	.28	.06	.06	.14	.85	.10	-.08	-.16
D3	.12	.01	-.17	.03	.81	-.16	.14	.17
J1	.19	.12	.08	.15	-.07	.69	.04	.17
J3	.22	.12	.06	-.04	-.05	.66	.08	.17
J2	.08	.09	.19	.11	.11	.63	.07	.24
E1	.27	.13	.25	.08	-.05	.24	.82	.21
E3	.13	-.15	.05	-.04	.06	.09	.81	.15

Table 6.10: Factor Loadings for Exploratory Factor Analysis with Varimax Rotation (continued)

Items	1	2	3	4	5	6	7	8
E2	.05	.23	.11	.05	-.21	.13	.77	-.10
B2	.08	.05	-.04	.18	.04	.13	.08	.86
B1	.12	.08	.27	.03	-.02	.17	.03	.78
B3	.11	.09	.21	.01	-.05	.04	-.06	.63

The items that cluster on the same components suggest that component 1 represents subjective norm, component 2 diligence, component 3 perceived behavioural control, component 4, investing luck attitude, component 5 trading frequency attitude, component 6 annual report financial statements usage, component 7 financial statements usage attitude and component 8 investment horizon attitude. These factors were used as variables for the rest of the analysis for this study.

6.8 Reliability Analysis

Reliability tests were conducted on all the items for the independent, moderating, dependent and continuous control variables for this study. Table 6.11 shows the mean, standard deviation, corrected item-to-total correlations for each item as well as Cronbach's alpha for each variable.

Table 6.11: Cronbach's Alpha of Variables

Items	Mean	Standard Deviation	Corrected Item-to-Total Correlation	Cronbach's alpha
Diligence				.85
A1	4.26	1.43	.75	
A2	4.04	1.35	.71	
A3	4.28	1.38	.70	
A4	3.42	0.93	.64	

Table 6.11: Cronbach's Alphas of Variables and Items (continued)

Items	Mean	Standard Deviation	Corrected Item-to-Total Correlation	Cronbach's alpha
Investment horizon attitude				.75
B1	5.04	1.15	.59	
B2	5.06	1.20	.58	
B3	5.07	1.20	.54	
Investing luck attitude				.82
C1	4.66	1.40	.68	
C2	4.46	1.37	.66	
C3	4.63	1.34	.71	
Trading attitude				.81
D1	4.72	1.19	.70	
D2	4.68	1.32	.64	
D3	4.38	1.25	.63	
Financial statements usage attitude				.79
E1	4.53	1.33	.50	
E2	4.37	1.31	.73	
E3	4.35	1.38	.67	
Subjective norm				.86
F1	4.39	1.36	.70	
F2	4.27	1.38	.71	
F3	4.20	1.47	.68	
F4	4.31	1.39	.72	
Perceived behavioural control				.83
G1	4.21	1.35	.66	
G2	4.47	1.43	.69	
G3	4.17	1.34	.67	
G4	4.38	1.31	.64	
Basic financial knowledge				.89
H1	0.22	0.42	.74	
H2	0.63	0.48	.79	
H3	0.78	0.41	.81	
Financial statement knowledge				.63
I1	0.70	0.48	.55	
I2	0.74	0.44	.49	
I3	0.78	0.42	.46	

Table 6.11: Cronbach's Alphas of Variables and Items (continued)

Items	Mean	Standard Deviation	Corrected Item-to-Total Correlation	Cronbach's alpha
I4	0.17	0.37	-.37	
I5	0.43	0.50	.11	
I6	0.68	0.49	.53	
I7	0.70	0.46	.41	
I8	0.64	0.48	.51	
Annual report financial statements usage				.88
J1	4.11	1.41	.81	
J2	3.77	1.38	.70	
J3	3.95	1.55	.78	

All variables had a Cronbach's alpha of more than .6, which is the cutoff point used for this study. The financial statement variable had a Cronbach's alpha of .63, which is the lowest among the ten variables. Three variables had Cronbach's alpha above .70 while six scored above .80.

In addition, all items with the exception of two had corrected item to total correlations above .30. While the literature suggests that items with low correlations be considered for deletion, items K7 and K8 were retained because they were deemed essential in evaluating financial statement knowledge by the expert panel. As in the case of multiple choice questions, the low correlation could be possibly due to fewer respondents answering them correctly as a result of low financial statement knowledge and not because these items contribute weakly to the overall scale.

6.9 Tests for Statistical Assumptions

As explained in the preceding chapter, it is important for the research data to fulfil statistical assumptions so that multivariate analysis such as regression analysis can be conducted. This section describes the various tests that were conducted to ascertain if the data fulfilled these statistical assumptions.

6.9.1 Normality

As stated in Chapter 5, normality was assessed through skewness and kurtosis of the variables. All variables with the exception of financial statement knowledge, had skewness of within ± 3.0 standard error and kurtosis of ± 10.0 standard error as recommended by Kline (2011). Nonetheless, the negative skewness and negative kurtosis (platykurtic distribution) of the financial statement knowledge variable was still within the absolute value of ± 1.0 deemed acceptable by Morgan et al. (2001). Furthermore, the detrimental effects of non-normality are reduced by larger sample sizes, and are negligible in sample sizes of 200 or more (Hair et al., 2010, p. 72).

The Shapiro-Wilks test was also performed on the variables. A significance level of 0.05 and above indicates normality of distribution. Results showed that all variables examined were normally distributed. A summary of the normality tests performed on the variables is shown in Table 6.12 as follows.

Table 6.12: Normality Tests for Variables

Variable		Skewness		Kurtosis		Shapiro -Wilks
		Statistics	Standard error	Statistics	Standard error	
Financial knowledge	statement	-0.71	0.12	-0.46	0.24	0.05
Diligence		-0.29	0.12	-0.32	0.24	0.20
Investment attitude	horizon	-0.28	0.12	0.32	0.24	0.11
Investing luck attitude		-0.33	0.12	0.11	0.24	0.14
Trading attitude		-0.35	0.12	0.24	0.24	0.18
Financial usage attitude	statements	-0.34	0.12	-0.35	0.24	0.26
Subjective norm		-0.35	0.12	-0.31	0.24	0.23
Perceived control	behavioural	-0.22	0.12	-0.89	0.24	0.32
Annual report statements usage	financial	-0.33	0.12	-0.63	0.24	0.29

6.9.2 Homoscedasticity and Linearity

The scatterplots of the regression standardised residuals are shown in Appendix F. The scatterplots indicate that the conditions of homoscedasticity were met. The Mahalanobis distances of the data output for the model inspected to detect outliers in the scatterplots. While there were a few that exceeded the critical value of 24.32 for the model, these amounted to 1% of the total cases, which is deemed acceptable by Pallant (2011). To determine whether cases warrant deletion, Tabachnick and Fidell (2007) suggested examining the Cook's value and removing cases with values that exceed 1. The maximum value of the regression output for each model was approximately 0.1, so all cases were retained. As can be seen in Appendix E, the normal probability plots were linear for all variables. The normal probability plots of the regression standardised residuals (Appendix G) also revealed a linear relationship between the dependent variable and predictor variables in each model.

6.9.3 Multicollinearity

This was assessed in two ways. First, examining the correlation matrix of the independent variables did not reveal correlations in excess of .90. Second, multicollinearity was evaluated using tolerance and variance inflation factor (VIF). As can be seen in Table 6.13, there was an absence of multicollinearity, since the tolerance of each variable was more than .10 and the VIF were less than 10.

Table 6.13: Collinearity Diagnostics (Tolerance and VIF)

Variable	Tolerance	VIF
Financial statement knowledge	.86	1.16
Diligence	.88	1.14
Moderator	.90	1.11
Investment horizon attitude	.66	1.52
Investing luck attitude	.84	1.19
Trading attitude	.86	1.17
Financial statements usage attitude	.65	1.54
Subjective norm	.59	1.71
Perceived behavioural control	.45	2.20

In summary, the various statistical tests for statistical assumptions revealed no major violations of the assumption of normality, linearity, homoscedasticity and multicollinearity so parametric tests were used for analysis.

6.10 Demographic Differences Among Variables

These differences were examined via two difference methods. Independent samples T-tests were performed to identify differences between males and females whereas ANOVA was performed on the remaining five demographic variables.

6.10.1 Financial Statement Knowledge Differences

Table 6.14 below shows the T-test results for financial statement knowledge differences between males and females. As can be seen, there were no significant gender differences for the variable.

Table 6.14: Gender Differences for Financial Statement Knowledge

Gender	N=399	M	SD	<i>t</i>	<i>p</i>	η^2
Male	230	0.60	0.24	-0.40	.688	-
Female	169	0.61	0.24			

Table 6.15 shows the ANOVA results for financial statement knowledge differences among five demographic variables. Significant financial knowledge differences were found in terms of education level.

Table 6.15: Other Demographic Differences for Financial Statement Knowledge

Variable	N=399	M	SD	<i>F</i>	<i>p</i>	η^2
Ethnicity						
Malay	77	0.61	0.24	0.38	.770	-
Chinese	257	0.60	0.24			
Indian or Others	65	0.63	0.24			
Age Group						
21 to 29	195	0.62	0.22	0.69	.557	-
30 to 39	137	0.59	0.26			
40 to 49	56	0.61	0.23			
50 to 59	11	0.55	0.25			
Education Level						
SPM	84	0.55	0.26	4.38	.005	.03
Diploma	239	0.64	0.22			
Bachelor degree	63	0.54	0.25			
Postgraduate degree	13	0.61	0.24			

Table 6.15: Other Demographic Differences for Financial Statement Knowledge (continued)

Variable	N=399	M	SD	<i>F</i>	<i>p</i>	η^2
Employment Sector						
Government	15	0.48	0.39	3.57	.148	-
Private	311	0.62	0.22			
Self-employed	58	0.61	0.23			
Not working	15	0.45	0.29			
Investing Experience						
Less than 1 year	43	0.66	0.18	1.25	.290	-
1 to 3 years	222	0.59	0.24			
4 to 9 years	122	0.61	0.24			
10 years or more	12	0.58	0.30			

6.10.2 Investment Horizon Attitude Differences

Table 6.16 shows the T-test results for investment horizon attitude differences between males and females. As shown, there were no significant gender differences for investment horizon attitude.

Table 6.16: Gender Differences for Investment Horizon Attitude

Gender	N=399	M	SD	<i>t</i>	<i>p</i>	η^2
Male	230	5.06	0.98	0.23	.819	-
Female	169	5.04	0.94			

Table 6.17 on the following page depicts the ANOVA results for investment horizon attitude differences among five demographic variables. Significant differences were evident for ethnicity and education level.

Table 6.17: Other Demographic Differences for Investment Horizon Attitude

Variable	N=399	M	SD	<i>F</i>	<i>p</i>	η^2
Ethnicity						
Malay	77	5.02	0.86	3.89	.009	.03
Chinese	257	5.15	0.96			
Indian or Others	65	4.71	1.04			
Age Group						
21 to 29	195	5.06	0.92	0.51	.509	-
30 to 39	137	5.00	1.02			
40 to 49	56	5.11	0.93			
50 to 59	11	5.33	1.09			
Education Level						
SPM	84	4.92	0.85	4.13	.007	.03
Diploma	239	5.00	0.97			
Bachelor degree	63	5.43	0.93			
Postgraduate degree	13	4.92	1.40			
Employment Sector						
Government	15	5.00	0.78	0.11	.956	-
Private	311	5.06	0.95			
Self-employed	58	5.05	1.13			
Not working	15	4.93	0.92			
Investing Experience						
Less than 1 year	43	5.16	0.77	1.67	.172	-
1 to 3 years	222	5.07	1.03			
4 to 9 years	122	5.04	0.86			
10 years or more	12	4.47	1.25			

6.10.3 Investing Luck Attitude Differences

Table 6.18 shows the T-test results for investing luck attitude differences between males and females while Table 6.19 shows the ANOVA results for investing luck attitude differences among five demographic variables. There were significant differences only for gender.

Table 6.18: Gender Differences for Investing Luck Attitude

Gender	N=399	M	SD	<i>t</i>	<i>p</i>	η^2
Male	230	4.48	1.22	-2.04	.040	.01
Female	169	4.72	1.11			

Table 6.19: Other Demographic Differences for Investing Luck Attitude

Variable	N=399	M	SD	<i>F</i>	<i>p</i>	η^2
Ethnicity						
Malay	77	4.51	1.03	1.46	.224	-
Chinese	257	4.66	1.21			
Indian or Others	65	4.37	1.19			
Age Group						
21 to 29	195	4.61	1.10	0.78	.505	-
30 to 39	137	4.59	1.27			
40 to 49	56	4.55	1.17			
50 to 59	11	4.06	1.31			
Education Level						
SPM	84	4.38	1.08	2.28	.079	-
Diploma	239	4.56	1.09			
Bachelor degree	63	4.85	1.44			
Postgraduate degree	13	4.92	1.57			
Employment Sector						
Government	15	4.29	1.09	0.86	.463	-
Private	311	4.63	1.17			
Self-employed	58	4.42	1.17			
Not working	15	4.49	1.36			
Investing Experience						
Less than 1 year	43	4.57	1.14	1.34	.260	-
1 to 3 years	222	4.69	1.17			
4 to 9 years	122	4.44	1.21			
10 years or more	12	4.28	1.01			

6.10.4 Trading Attitude Differences

Table 6.20 below highlights the T-test results for trading attitude differences between males and females. There were no significant gender differences for trading attitude.

Table 6.20: Gender Differences for Trading Attitude

Gender	N=399	M	SD	<i>t</i>	<i>p</i>	η^2
Male	230	4.46	1.16	-0.71	.480	-
Female	169	4.64	0.93			

Table 6.21 shows the ANOVA results for trading attitude differences among five demographic variables. Significant differences were only found for age group.

Table 6.21: Other Demographic Differences for Trading Attitude

Variable	N=399	M	SD	<i>F</i>	<i>p</i>	η^2
Ethnicity						
Malay	77	4.55	0.92	0.175	.913	-
Chinese	257	4.59	1.10			
Indian or Others	65	4.68	1.10			
Age Group						
21 to 29	195	4.63	0.99	5.30	.001	0.04
30 to 39	137	4.77	1.06			
40 to 49	56	4.16	1.13			
50 to 59	11	4.12	1.43			
Education Level						
SPM	84	4.60	0.92	1.89	.131	-
Diploma	239	4.52	1.07			
Bachelor degree	63	4.87	1.11			
Postgraduate degree	13	4.72	1.48			
Investing Experience						
Less than 1 year	43	4.47	0.95	1.55	.201	-
1 to 3 years	222	4.69	1.02			
4 to 9 years	122	4.50	1.13			
10 years or more	12	4.28	1.38			

6.10.5 Financial Statements Usage Attitude Differences

The following table shows the T-test results for financial statements usage attitude differences between males and females. There was a significant difference between males and females.

Table 6.22: Gender Differences for Financial Statements Usage Attitude

Gender	N=399	M	SD	<i>t</i>	<i>p</i>	η^2
Male	230	4.31	1.18	-2.26	.024	.01
Female	169	4.56	1.02			

The table below shows the ANOVA results for financial statements usage attitude differences among five demographic variables. Significant differences were found for age group and investing experience.

Table 6.23: Other Demographic Differences for Financial Statements Usage Attitude

Variable	N=399	M	SD	<i>F</i>	<i>p</i>	η^2
Ethnicity						
Malay	77	4.50	1.22	1.46	.226	-
Chinese	257	4.46	1.13			
Indian or Others	65	4.16	0.93			
Age Group						
21 to 29	195	4.66	1.10	6.88	.000	.05
30 to 39	137	4.22	1.07			
40 to 49	56	4.04	1.18			
50 to 59	11	4.30	0.92			
Education Level						
SPM	84	4.25	1.06	1.01	.387	-
Diploma	239	4.48	1.14			
Bachelor degree	63	4.42	1.07			
Postgraduate degree	13	4.23	1.37			

Table 6.23: Other Demographic Differences for Financial Statements Usage Attitude (continued)

Variable	N=399	M	SD	<i>F</i>	<i>p</i>	η^2
Employment Sector						
Government	15	4.09	1.41	0.99	.397	-
Private	311	4.45	1.12			
Self-employed	58	4.43	1.05			
Not working	15	4.07	1.00			
Investing Experience						
Less than 1 year	43	4.75	0.96	5.16	.002	.04
1 to 3 years	222	4.49	1.17			
4 to 9 years	122	4.13	1.05			
10 years or more	12	4.89	0.84			

6.10.6 Subjective Norm Differences

The following table shows the T-test results for perceived behavioural control differences between males and females. There was a significant difference between males and females.

Table 6.24: Gender Differences for Subjective Norm

Gender	N=399	M	SD	<i>t</i>	<i>p</i>	η^2
Male	230	4.12	1.23	-3.47	.001	.03
Female	169	4.52	1.05			

Table 6.25 on the next page summarises the ANOVA results for subjective norm differences among five demographic variables. Significant differences were noted for age group and investing experience.

Table 6.25: Other Demographic Differences for Subjective Norm

Variable	N=399	M	SD	<i>F</i>	<i>p</i>	η^2
Ethnicity						
Malay	77	4.10	1.28	1.72	.163	-
Chinese	257	4.39	1.14			
Indian or Others	65	4.13	1.12			
Age Group						
21 to 29	195	4.48	1.10	5.49	.001	.04
30 to 39	137	4.26	1.14			
40 to 49	56	3.82	1.31			
50 to 59	11	3.80	1.30			
Education Level						
SPM	84	4.17	1.27	0.49	.687	-
Diploma	239	4.30	1.07			
Bachelor degree	63	4.40	1.27			
Postgraduate degree	13	4.37	1.65			
Employment Sector						
Government	15	4.75	1.51	2.30	.077	-
Private	311	4.33	1.15			
Self-employed	58	4.00	1.15			
Not working	15	4.10	1.11			
Investing Experience						
Less than 1 year	43	4.69	1.01	4.94	.002	.04
1 to 3 years	222	4.39	1.20			
4 to 9 years	122	4.01	1.13			
10 years or more	12	3.98	0.77			

6.10.7 Perceived Behavioural Control Differences

Table 6.26 depicts the T-test results for perceived behavioural control differences between males and females. There was a significant difference between males and females.

Table 6.26: Gender Differences for Perceived Behavioural Control

Gender	N=399	M	SD	<i>t</i>	<i>p</i>	η^2
Male	230	4.11	1.13	-4.43	.000	.05
Female	169	4.58	1.00			

Table 6.27 highlights the ANOVA results for perceived behavioural control differences among five demographic variables. Significant perceived behavioural control differences were found in terms of age group, employment sector and investing experience.

Table 6.27: Other Demographic Differences for Perceived Behavioural Control

Variable	N=399	M	SD	<i>F</i>	<i>p</i>	η^2
Ethnicity						
Malay	77	4.18	1.10	1.07	.361	-
Chinese	257	4.38	1.12			
Indian or Others	65	4.17	1.05			
Age Group						
21 to 29	195	4.53	1.01	7.84	.000	.06
30 to 39	137	4.24	1.11			
40 to 49	56	3.82	1.21			
50 to 59	11	3.72	1.07			
Education Level						
SPM	84	4.11	1.03	1.58	.193	-
Diploma	239	4.39	1.04			
Bachelor degree	63	4.23	1.34			
Postgraduate degree	13	4.50	1.47			
Employment Sector						
Government	15	4.58	1.18	3.09	.027	.03
Private	311	4.36	1.09			
Self-employed	58	4.14	1.08			
Not working	15	3.60	1.18			
Investing Experience						
Less than 1 year	43	4.87	0.82	7.81	.000	.06
1 to 3 years	222	4.38	1.11			
4 to 9 years	122	4.00	1.10			
10 years or more	12	4.04	1.16			

6.10.8 Annual Report Financial Statements Usage Differences

Table 6.28 as follows shows the T-test results for annual report financial statements usage differences between males and females. Significant differences for gender were found.

Table 6.28: Gender Differences for Annual Report Financial Statements Usage

Gender	N=399	M	SD	<i>t</i>	<i>p</i>	η^2
Male	230	3.76	1.34	-3.41	.001	.03
Female	169	4.19	1.18			

Table 6.29 below summarises the ANOVA results for annual report financial statements usage differences among five demographic variables. With the exception of ethnicity, significant differences were found for the remaining four demographic variables.

Table 6.29: Other Demographic Differences for Annual Report Financial Statements Usage

Variable	N=399	M	SD	<i>F</i>	<i>p</i>	η^2
Ethnicity						
Malay	77	3.82	1.35	1.60	.188	-
Chinese	257	4.04	1.29			
Indian or Others	65	3.69	1.23			
Age Group						
21 to 29	195	4.24	1.23	7.91	.000	.06
30 to 39	137	3.75	1.22			
40 to 49	56	3.45	1.39			
50 to 59	11	3.51	1.73			
Education Level						
SPM	84	3.56	1.25	4.73	.003	.03
Diploma	239	4.12	1.26			
Bachelor degree	63	3.74	1.26			
Postgraduate degree	13	4.18	1.74			

Table 6.29: Other Demographic Differences for Annual Report Financial Statements Usage (continued)

Variable	N=399	M	SD	<i>F</i>	<i>p</i>	η^2
Employment Sector						
Government	15	3.33	1.76	4.57	.004	.03
Private	311	4.03	1.27			
Self-employed	58	3.86	1.15			
Not working	15	2.98	1.26			
Investing Experience						
Less than 1 year	43	4.67	1.11	8.07	.000	.06
1 to 3 years	222	4.00	1.28			
4 to 9 years	122	3.60	1.28			
10 years or more	12	3.69	1.19			

6.11 Correlations

This section shows Pearson's correlations among the independent and dependent variables. As can be seen in Table 6.30 on the next page, there is a positive correlation between the dependent variable and most of the independent variables which is statistically significant at the 1% level. In descending order, the largest correlations are between the dependent variable and perceived behavioural control ($r = .69, p < .01$), subjective norm ($r = .65, p < .01$), financial statements usage attitude ($r = .60, p < .01$), financial statement knowledge ($r = .53, p < .01$) and investment horizon attitude ($r = .20, p < .01$). Small negative correlations are evident between the dependent variable and investment luck attitude ($r = -.01$) as well as with trading frequency attitude ($r = -.10$).

Table 6.30: Pearson's Correlations among Variables

	Usage	FSK	HA	LA	TA	UA	SN	PCB
Usage	1							
FSK	.53**	1						
HA	.20**	.08	1					
LA	-.10*	.01	.17**	1				
TA	-.01*	.02	.08	.25**	1			
UA	.60**	.27**	.09	.13*	.02	1		
SN	.65**	.25**	.23**	.16**	.14**	.39**	1	
PCB	.69**	.34**	.19**	.21**	.10*	.58**	.61**	1

Notes:

* $p < .05$ (2-tailed), ** $p < .01$ (2-tailed)

Usage = Annual report financial statements usage; FSK = Financial statement knowledge; HA = Investment horizon attitude; LA = Investing luck attitude; TA = Trading attitude; UA = Financial statements usage attitude; SN = Subjective norm; PCB = Perceived behavioural control; D = Diligence

6.12 Multiple Regression Analysis

Multiple regression analysis was conducted on four models derived from the research framework. The results are shown in this section.

Model 1

Here, basic financial knowledge and the demographic variables are the predictor variables. This model is intended to examine the effects of these variables on the dependent variable and is expressed in the following equation:

$$\begin{aligned} \text{Usage}_i = & \beta_0 + \beta_1 \text{BFK}_i + \beta_2 \text{Male}_i + \beta_3 \text{Malay}_i + \beta_4 \text{IndianOthers}_i + \beta_5 \text{Thirties}_i + \beta_6 \text{Forties}_i \\ & + \beta_7 \text{Fifties}_i + \beta_8 \text{SPM}_i + \beta_9 \text{Bachelor}_i + \beta_{10} \text{Postgraduate}_i + \beta_{11} \text{Government}_i + \\ & \beta_{12} \text{Selfemployed}_i + \beta_{13} \text{Notworking}_i + \beta_{14} \text{Lessthanoneyear}_{it} + \beta_{15} \text{Fourtonineyears}_i + \\ & \beta_{16} \text{Tenyyearsormore}_i + \varepsilon_i \end{aligned}$$

Where:

Usage_{*i*} = Annual report financial statements usage; BFK_{*i*} = Basic financial knowledge; Male_{*i*} = Male; Malay_{*i*} = Malay; IndianOthers_{*i*} = Indian or Others; Thirties_{*i*} = 30-39; Forties_{*i*} = 40-49; Fifties_{*i*} = 50-59; SPM_{*i*} = SPM; Bachelor_{*i*} = Bachelor degree; Postgraduate_{*i*} = Master or PhD degree; Government_{*i*} = Government sector; Selfemployed_{*i*} = Self-employed; Notworking_{*i*} = Pensioner or unemployed; Lessthanoneyear_{*i*} = Less than one year investing experience; Fourtonineyears_{*i*} = 4-9 years investing experience; Tenyearsormore_{*i*} = Ten or more years investing experience; ε_i = error

The results of multiple regression analysis for Model 1 are shown in Table 6.31 below.

Table 6.31: Multiple Regression Analysis for Model 1

Predictor Variables	<i>B</i>	<i>SE B</i>	β
Constant	4.03	.19	
Basic financial knowledge	0.20	.27	.04
Male	-0.33	.14	-.13*
Malay	-0.01	.17	-.00
Indian or Others	-0.18	.18	-.05
30 - 39	-0.22	.16	-.08
40 - 49	-0.41	.23	-.11
50 - 59	-0.46	.43	-.06
SPM	-0.41	.17	-.13*
Bachelor	-0.26	.18	-.07

Table 6.31: Multiple Regression Analysis for Model 1 (continued)

Predictor Variables	B	SE B	β
Postgraduate	0.30	.36	.04
Government	-0.44	.34	-.06
Self employed	-0.00	.18	.00
Not working	-0.98	.34	-.14**
Less than 1 year	0.72	.21	.17**
4 to 9 years	0.18	.17	-.07
10 years or more	0.14	.41	.02
R ²			0.15
F			4.32**

Notes:

* $p < .005$ (2-tailed), ** $p < .0005$ (2-tailed)

This model explained 15% of the variance in annual report financial statements usage ($F(16, 382) = 4.32, p < .0005$). Only a few variables such as having less than one year's investing experience ($\beta = .17, p < .0005$) and not working ($\beta = -.14, p < .0005$) have limited influence on the dependent variable.

Model 2

Basic financial knowledge and the demographic variables are the control variables in the first step while the seven independent variables are included in the second step. This relationship is expressed in the following equation:

$$\begin{aligned} \text{Usage}_i = & \beta_0 + \beta_1 \text{BFK}_i + \beta_2 \text{Male}_i + \beta_3 \text{Malay}_i + \beta_4 \text{IndianOthers}_i + \beta_5 \text{Thirties}_i + \beta_6 \text{Forties}_i \\ & + \beta_7 \text{Fifties}_i + \beta_8 \text{SPM}_i + \beta_9 \text{Bachelor}_i + \beta_{10} \text{Postgraduate}_i + \beta_{11} \text{Government}_i + \\ & \beta_{12} \text{Selfemployed}_i + \beta_{13} \text{Notworking}_i + \beta_{14} \text{Lessthanoneyear}_i + \beta_{15} \text{Fourtonineyears}_i + \end{aligned}$$

$$\beta_{16}Tenyearsormore_i + \beta_{17}FSK_i + \beta_{18}Horizon_i - \beta_{19}Luck_i - \beta_{20}Trading_i + \beta_{21}UsageAttitude_i + \beta_{22}SubjectiveNorm_i + \beta_{23}PCB_i + \varepsilon_i$$

Where:

Usage_{*i*} = Annual report financial statements usage; BFK_{*i*} = Basic financial knowledge; Male_{*i*} = Male; Malay_{*i*} = Malay; IndianOthers_{*i*} = Indian or Others; Thirties_{*i*} = 30-39; Forties_{*i*} = 40-49; Fifties_{*i*} = 50-59; SPM_{*i*} = SPM; Bachelor_{*i*} = Bachelor degree; Postgraduate_{*i*} = Master or PhD degree; Government_{*i*} = Government sector; Selfemployed_{*i*} = Self-employed; Notworking_{*i*} = Pensioner or unemployed; Lessthanoneyear_{*i*} = Less than one year investing experience; Fourtonineyears_{*i*} = 4-9 years investing experience; Tenyearsormore_{*i*} = Ten or more years investing experience; FSK_{*i*} = Financial statement knowledge; Horizon_{*i*} = Investment horizon attitude; Luck_{*i*} = Investing luck attitude; Trading_{*i*} = Trading attitude; UsageAttitude_{*i*} = Financial statements usage attitude; SubjectiveNorm_{*i*} = Subjective norm; PCB_{*i*} = Perceived behavioural control; ε_i = error

The results of multiple regression analysis for Model 2 are shown in Table 6.32 as follows.

Table 6.32: Multiple Regression Analysis for Model 2

Predictor Variables	<i>B</i>	<i>SE B</i>	β
Constant	-0.41	.32	
Step 1: Demographic variables			
Basic financial knowledge	0.04	.16	.07
Male	-0.07	.08	-.03
Malay	-0.01	.10	-.00
Indian or Others	-0.09	.10	-.03
30 - 39	-0.03	.09	-.01
40 - 49	-0.05	.13	-.01

Table 6.32: Multiple Regression Analysis for Model 2 (continued)

Predictor Variables	<i>B</i>	<i>SE B</i>	β
50 - 59	0.03	.25	.00
SPM	-0.16	.10	-.05
Bachelor	-0.16	.11	-.05
Postgraduate	0.27	.21	.04
Government	-0.56	.20	-.08*
Self employed	0.08	.10	.02
Not working	-0.39	.20	-.06*
Less than 1 year	0.25	.12	.06*
4 to 9 years	-0.11	.10	-.04
10 years or more	-0.17	.24	-.02*
Step 2: Independent variables			
Financial statement knowledge	1.49	.17	.27**
Investment horizon attitude	0.05	.04	.04*
Investing luck attitude	-0.04	.03	-.04*
Trading attitude	-0.10	.04	-.08*
Financial statements usage attitude	0.28	.04	.24**
Subjective norm	0.39	.04	.35**
Perceived behavioural control	0.24	.05	.21**
R ²			0.72
ΔR^2			0.57
F			42.44**
ΔF			109.88

Notes:

* $p < .005$ (2-tailed), ** $p < .0005$ (2-tailed)

This model explained 72% of the variance in annual report financial statements usage ($F(23, 375) = 42.44, p < .0005$). The independent variables explained an additional 57% of the variance in annual report financial statements usage, after controlling for the demographic variables and basic financial knowledge. The combined effect size of these variables was large (Cohen's $f^2 = 2.04$). The effect size of each variable will be highlighted Section 6.14. Subjective norm ($\beta = .35, p < 0.0005$), financial statement knowledge ($\beta = .27, p < 0.0005$), financial statements usage attitude ($\beta = .24, p < .0005$), perceived behavioural control ($\beta = .21, p < .0005$) and investment

horizon attitude ($\beta = .04, p < .005$) each had a positive influence on the dependent variable. In contrast, trading attitude ($\beta = -.80, p < .005$) and investing luck attitude ($\beta = -.40, p < .005$) negatively influenced the dependent variable.

Model 3

Basic financial knowledge and the demographic variables are the control variables in the first step while the seven independent variables are included in the second step and diligence as an additional independent variable in the third step. The equation for Model 3 is as follows:

$$\begin{aligned} \text{Usage}_i = & \beta_0 + \beta_1 \text{BFK}_i + \beta_2 \text{Male}_i + \beta_3 \text{Malay}_i + \beta_4 \text{IndianOthers}_i + \beta_5 \text{Thirties}_i + \beta_6 \text{Forties}_i \\ & + \beta_7 \text{Fifties}_i + \beta_8 \text{SPM}_i + \beta_9 \text{Bachelor}_i + \beta_{10} \text{Postgraduate}_i + \beta_{11} \text{Government}_i + \\ & \beta_{12} \text{Selfemployed}_i + \beta_{13} \text{Notworking}_i + \beta_{14} \text{Lessthanoneyear}_i + \beta_{15} \text{Fourtonineyears}_i + \\ & \beta_{16} \text{Tenyearsormore}_i + \beta_{17} \text{FSK}_i + \beta_{18} \text{Horizon}_i - \beta_{19} \text{Luck}_i - \beta_{20} \text{Trading}_i + \\ & \beta_{21} \text{UsageAttitude}_i + \beta_{22} \text{SubjectiveNorm}_i + \beta_{23} \text{PCB}_i + \beta_{24} \text{Diligence}_i + \varepsilon_i \end{aligned}$$

Where:

Usage_i = Annual report financial statements usage; BFK_i = Basic financial knowledge; Male_i = Male; Malay_i = Malay; IndianOthers_i = Indian or Others; Thirties_i = 30-39; Forties_i = 40-49; Fifties_i = 50-59; SPM_i = SPM; Bachelor_i = Bachelor degree; Postgraduate_i = Master or PhD degree; Government_i = Government sector; Selfemployed_i = Self-employed; Notworking_i = Pensioner or unemployed; Lessthanoneyear_i = Less than one year investing experience; Fourtonineyears_i = 4-9 years investing experience; Tenyearsormore_i = Ten or more years investing experience; FSK_i = Financial statement knowledge; Horizon_i = Investment horizon attitude; Luck_i =

Investing luck attitude; $Trading_i$ = Trading attitude; $UsageAttitude_i$ = Financial statements usage attitude; $SubjectiveNorm_i$ = Subjective norm; PCB_i = Perceived behavioural control; $Diligence_i$ = Diligence; ε_i = error

The results of multiple regression analysis for Model 3 are shown in Table 6.33 below.

Table 6.33: Multiple Regression Analysis for Model 3

Predictor Variables	<i>B</i>	<i>SE B</i>	β
Constant	-0.51	.32	
Step 1: Demographic variables			
Basic financial knowledge	0.02	.16	.00
Male	-0.06	.08	-.02
Malay	-0.01	.10	-.00
Indian or Others	-0.07	.11	-.02
30 - 39	-0.03	.09	-.01
40 - 49	-0.05	.13	-.01
50 - 59	0.01	.25	.00
SPM	-0.17	.10	-.05
Bachelor	-0.16	.11	-.05
Postgraduate	0.27	.21	.04
Government	-0.60	.20	-.08*
Self employed	0.09	.10	.03
Not working	-0.39	.20	-.06*
Less than 1 year	0.26	.12	.06*
4 to 9 years	-0.12	.10	-.04
10 years or more	-0.19	.24	-.03*
Step 2: Independent variables			
Financial statement knowledge	1.47	.17	.27**
Investment horizon attitude	0.05	.04	.04*
Investing luck attitude	-0.05	.03	-.07*
Trading attitude	-0.10	.04	-.08*
Financial statements usage attitude	0.28	.04	.24**
Subjective norm	0.38	.04	.35**
Perceived behavioural control	0.24	.04	.21**

Table 6.33: Multiple Regression Analysis for Model 3 (continued)

Predictor Variables	<i>B</i>	<i>SE B</i>	β	
Step 3: Diligence as predictor				
Diligence	0.05	.04	.04*	
R ²				0.73
ΔR^2				0.01
F				42.97**
ΔF				4.01

Notes:

* $p < .005$ (2-tailed), ** $p < .0005$ (2-tailed)

This model explained 73% of the variance in annual report financial statements usage ($F(24, 374) = 42.97, p < .0005$). Diligence explained an additional 1% of the variance in annual report financial statements usage, after controlling for the demographic variables, basic financial knowledge and the independent variables. The effect size for the addition of this variable was small (Cohen's $f^2 = 0.04$). Subjective norm ($\beta = .35, p < .0005$), financial statement knowledge ($\beta = .27, p < .0005$), financial statements usage attitude ($\beta = .24, p < .0005$), perceived behavioural control ($\beta = .21, p < .0005$), investment horizon attitude ($\beta = .04, p < .005$) and diligence ($\beta = .04, p < .005$) each had a positive influence on the dependent variable. In contrast, trading attitude ($\beta = -.80, p < .005$) and investing luck attitude ($\beta = -.70, p < .005$) negatively influenced the dependent variable.

Model 4

In this model, basic financial knowledge and the demographic variables are the control variables in the first step while the seven independent variables are included in the second step and diligence as an additional independent variable in the third step. The final step entails adding the moderator as a predictor variable in the model. The equation for Model 4 is as follows:

$$\begin{aligned}
\text{Usage}_i = & \beta_0 + \beta_1 \text{BFK}_i + \beta_2 \text{Male}_i + \beta_3 \text{Malay}_i + \beta_4 \text{IndianOthers}_i + \beta_5 \text{Thirties}_i + \beta_6 \text{Forties}_i \\
& + \beta_7 \text{Fifties}_i + \beta_8 \text{SPM}_i + \beta_9 \text{Bachelor}_i + \beta_{10} \text{Postgraduate}_i + \beta_{11} \text{Government}_i + \\
& \beta_{12} \text{Selfemployed}_i + \beta_{13} \text{Notworking}_i + \beta_{14} \text{Lessthanoneyear}_i + \beta_{15} \text{Fourtonineyears}_i + \\
& \beta_{16} \text{Tenyyearsormore}_i + \beta_{17} \text{FSK}_i + \beta_{18} \text{Horizon}_i - \beta_{19} \text{Luck}_i - \beta_{20} \text{Trading}_i + \\
& \beta_{21} \text{UsageAttitude}_i + \beta_{22} \text{SubjectiveNorm}_i + \beta_{23} \text{PCB}_i + \beta_{24} \text{Diligence}_i + \beta_{25} \text{FSK} * \text{Diligence}_i \\
& \varepsilon_i
\end{aligned}$$

Where:

Usage_{*i*} = Annual report financial statements usage; BFK_{*i*} = Basic financial knowledge; Male_{*i*} = Male; Malay_{*i*} = Malay; IndianOthers_{*i*} = Indian or Others; Thirties_{*i*} = 30-39; Forties_{*i*} = 40-49; Fifties_{*i*} = 50-59; SPM_{*i*} = SPM; Bachelor_{*i*} = Bachelor degree; Postgraduate_{*i*} = Master or PhD degree; Government_{*i*} = Government sector; Selfemployed_{*i*} = Self-employed; Notworking_{*i*} = Pensioner or unemployed; Lessthanoneyear_{*i*} = Less than one year investing experience; Fourtonineyears_{*i*} = 4-9 years investing experience; Tenyearsormore_{*i*} = Ten or more years investing experience; FSK_{*i*} = Financial statement knowledge; Horizon_{*i*} = Investment horizon attitude; Luck_{*i*} = Investing luck attitude; Trading_{*i*} = Trading attitude; UsageAttitude_{*i*} = Financial statements usage attitude; SubjectiveNorm_{*i*} = Subjective norm; PCB_{*i*} = Perceived behavioural control; Diligence_{*i*} = Diligence; FSK*Diligence_{*i*} = Moderator ε_i = error

The results of multiple regression analysis for Model 4 are shown in Table 6.34 on the next page.

Table 6.34: Multiple Regression Analysis for Model 4

Predictor Variables	<i>B</i>	<i>SE B</i>	<i>β</i>
Constant	-0.72	.45	
Step 1: Demographic variables			
Basic financial knowledge	0.01	.16	.00
Male	-0.06	.08	-.02
Malay	-0.02	.10	-.17
Indian or Others	-0.08	.11	-.02
30 - 39	-0.03	.09	-.01
40 - 49	-0.04	.13	-.11
50 - 59	0.03	.25	.00
SPM	-0.17	.10	-.05
Bachelor	-0.16	.11	-.05
Postgraduate	0.27	.21	.04
Government	-0.56	.20	-.08*
Self employed	0.10	.11	.03
Not working	-0.38	.20	-.06
Less than 1 year	0.26	.12	.06*
4 to 9 years	-0.12	.10	-.04
10 years or more	-0.19	.24	-.03
Step 2: Independent variables			
Financial statement knowledge	1.87	.60	.33**
Investment horizon attitude	0.06	.04	.04*
Investing luck attitude	-0.05	.03	-.05*
Trading attitude	-0.10	.04	-.08*
Financial statements usage attitude	0.28	.04	.24**
Subjective norm	0.38	.04	.34**
Perceived behavioural control	0.25	.05	.21**
Step 3: Diligence as predictor			
Diligence	0.04	.09	.03*
Step 4: Moderating variable			
Moderator	0.03	.14	.02*
R ²			0.75
ΔR ²			0.02
F			44.07**
ΔF			8.10

Notes:

* $p < .005$ (2-tailed), ** $p < .0005$ (2-tailed)

This model explained 75% of the variance in annual report financial statements usage ($F(25, 373) = 44.07, p < .0005$). The moderating variables explained an additional 2% of the variance in annual report financial statements usage, after controlling for the basic financial knowledge, demographic variables, the independent variables and diligence. The effect size for the addition of this variable was small (Cohen's $f^2 = 0.08$).

Subjective norm ($\beta = .34, p < .0005$), financial statement knowledge ($\beta = .33, p < .0005$), financial statements usage attitude ($\beta = .24, p < .0005$), perceived behavioural control ($\beta = .21, p < .0005$), investment horizon attitude ($\beta = .04, p < .005$), diligence ($\beta = .03, p < .005$) and the moderator ($\beta = .02, p < .005$) each had a positive influence on the dependent variable. In contrast, trading attitude ($\beta = -.80, p < .005$) and investing luck attitude ($\beta = -.50, p < .005$) negatively influenced the dependent variable.

6.13 Results of Hypotheses Testing

This section reports the results of the hypotheses that were tested.

H1: Financial statement knowledge positively influences individual investors' annual report financial statements usage, controlling for basic financial knowledge and demographic factors.

Multiple regression analysis reveals that financial statement knowledge has a positive influence on individual investors' annual report financial statement usage after controlling for basic financial knowledge and demographic factors. This is evident in Model 2 ($\beta = .27, p < .0005$), Model 3 ($\beta = .27, p < .0005$), and Model 4 ($\beta = .33, p <$

.0005). The effect size of this variable is also large (Cohen's $f^2 = 0.38$). Hence, Hypothesis H1 is supported.

H2: Diligence acts as a moderator on the relationship between financial statement knowledge and individual investors' annual report financial statements usage, controlling for basic financial knowledge and demographic factors.

When included as an independent variable, diligence positively influences individual investors' annual report financial statement usage after controlling for basic financial knowledge and demographic factors. This is evident in both Model 3 ($\beta = .04, p < .005$) and Model 4 ($\beta = .03, p < .005$), though the effect size is small (Cohen's $f^2 = 0.04$). As a moderator ($\beta = .02, p < .005$), it also has a positive influence on the dependent variable after controlling for basic financial knowledge and demographic factors. The effect size is small (Cohen's $f^2 = 0.08$). Therefore, Hypothesis H2 is supported.

H3a: Investment horizon attitude positively influences individual investors' annual report financial statements usage, controlling for basic financial knowledge and demographic factors.

Multiple regression analysis shows that after controlling for basic financial knowledge and demographic factors, investment horizon attitude has a positive influence on individual investors' annual report financial statement usage as evidenced in Model 2 ($\beta = .04, p < .005$), Model 3 ($\beta = .04, p < .005$), and Model 4 ($\beta = .04, p < .005$). The effect size of this variable is small (Cohen's $f^2 = 0.03$). Hence, Hypothesis H3a is supported.

H3b: Investing luck attitude negatively influences individual investors' annual report financial statements usage, controlling for basic financial knowledge and demographic factors.

According to multiple regression analysis, investing luck attitude has a negative influence on individual investors' annual report financial statement usage as shown in Model 2 ($\beta = -.40, p < 0.005$), Model 3 ($\beta = -.70, p < .005$), and Model 4 ($\beta = -.50, p < .005$), after controlling for basic financial knowledge and demographic factors. The effect size of this variable is small (Cohen's $f^2 = 0.02$). Therefore, Hypothesis H3b is supported.

H3c: Trading attitude negatively influences individual investors' annual report financial statements usage, controlling for basic financial knowledge and demographic factors.

Multiple regression analysis reveals that trading attitude has a negative influence on individual investors' annual report financial statement usage as found in Model 2 ($\beta = -.80, p < .005$), Model 3 ($\beta = -.80, p < .005$), and Model 4 ($\beta = -.80, p < .005$) after controlling for basic financial knowledge and demographic factors. The effect size of this variable is small (Cohen's $f^2 = 0.07$). Therefore, Hypothesis H3c is supported.

H3d: Financial statements usage attitude positively influences individual investors' annual report financial statements usage, controlling for basic financial knowledge and demographic factors.

Based on multiple regression analysis, after controlling for basic financial knowledge and demographic factors, financial statements usage attitude has a positive influence on individual investors' annual report financial statement usage as shown in Model 2 ($\beta = .24, p < .0005$), Model 3 ($\beta = .24, p < .0005$), and Model 4 ($\beta = .24, p < .0005$). The effect size of this variable is also large (Cohen's $f^2 = 0.39$). Hence, Hypothesis H3d is supported.

H3e: Subjective norm positively influences individual investors' annual report financial statements usage, controlling for basic financial knowledge and demographic factors.

From multiple regression analysis, subjective norm has a positive influence on individual investors' annual report financial statement usage as shown in Model 2 ($\beta = .35, p < .0005$), Model 3 ($\beta = .35, p < .0005$), and Model 4 ($\beta = .34, p < .0005$) after controlling for basic financial knowledge and demographic factors. The effect size of this variable is also large (Cohen's $f^2 = 0.4$). Consequently, Hypothesis H3e is supported.

H3f: Perceived behavioural control positively influences individual investors' annual report financial statements usage, controlling for basic financial knowledge and demographic factors.

Multiple regression analysis reveals that after controlling for basic financial knowledge and demographic factors, perceived behavioural control has a positive influence on individual investors' annual report financial statement usage as revealed in Model 2 ($\beta = .21, p < .0005$), Model 3 ($\beta = .21, p < .0005$), and Model 4 ($\beta = .21, p <$

.0005). The effect size of this variable is small (Cohen's $f^2 = 0.07$). Therefore, Hypothesis H3f is supported.

H4a: There are significant demographic differences for financial statement knowledge.

There are statistically significant differences for education level in which the financial statement knowledge of those with SPM ($M = 0.55$, $SD = 0.26$) is significantly different from those with a diploma ($M = 0.64$, $SD = 0.22$). There are also significant differences between those with a diploma and a bachelor degree ($M = 0.54$, $SD = 0.26$) while those with a post graduate degree ($M = 0.62$, $SD = 0.24$) do not differ significantly from the other groups. However, the effect size is small ($\eta^2 = .03$). There are no statistically significant differences for gender, ethnicity, age group, employment sector and investing experience. Nonetheless on account of the differences for education level, Hypothesis H4a is supported.

H4b: There are significant demographic differences for investment horizon attitude.

For investment horizon attitude, there are significant albeit small effect size ($\eta^2 = .03$) differences between the Chinese ($M = 5.15$, $SD = 0.96$) and Indians ($M = 4.72$, $SD = 1.04$). No significant differences are found between other ethnic groups. There are also significant differences in terms of education level, particularly between those with a diploma ($M = 5.01$, $SD = 0.97$) and bachelor degree ($M = 5.42$, $SD = 0.93$), though the effect size is small ($\eta^2 = .03$). There are no significant investment horizon attitude differences in terms of gender, age group, employment sector and investing experience. Nevertheless, Hypothesis H4b is supported.

H4c: There are significant demographic differences for investing luck attitude.

No significant differences are noted for ethnicity, age group, education level, employment sector and investing experience. There are significant investing luck attitude differences between males ($M = 4.48$, $SD = 1.22$) and females ($M = 4.73$, $SD = 1.11$), although the effect size is small ($\eta^2 = 0.01$). Hence, Hypothesis H4c is supported.

H4d: There are significant demographic differences for trading attitude.

No significant differences for trading attitude are noted for gender, ethnicity, education level, employment sector and investing experience. However, there are significant differences for age group, specifically between those in their 20s ($M = 4.63$, $SD = 0.99$) and their 40s ($M = 4.16$, $SD = 1.13$) as well as between those in their 30s ($M = 4.77$, $SD = 1.06$) and those in their 40s. The effect size is small ($\eta^2 = .04$). Consequently, Hypothesis H4d is supported.

H4e: There are significant demographic differences for financial statements usage attitude.

There are significant differences between males ($M = 4.31$, $SD = 1.18$) and females ($M = 4.56$, $SD = 1.02$) for financial statements usage attitude, though the effect size is small ($\eta^2 = .01$). In contrast, there are no significant differences in terms of ethnicity, education level and employment sector. There are significant small effect size ($\eta^2 = .05$) differences in terms of age group between those in their 20s ($M = 4.66$, $SD = 1.10$) and those in their 30s ($M = 4.23$, $SD = 1.07$) and 40s ($M = 4.04$, $SD = 4.30$). Significant differences are also noted for investing experience particularly between those with less than one year of experience ($M = 4.75$, $SD = 0.96$) and those with 4 to 9

years of experience ($M = 4.13$, $SD = 1.05$), though the effect size is small ($\eta^2 = .04$). Therefore, Hypothesis H4e is supported.

H4f: There are significant demographic differences for subjective norm.

There is a significant small effect size ($\eta^2 = .03$) difference between males ($M = 4.12$, $SD = 1.23$) and females ($M = 4.52$, $SD = 1.05$). No significant differences are discerned in terms of ethnicity, education level and employment sector. However, significant age group differences are identified for those in their 20s ($M = 4.48$, $SD = 1.10$) and in their 40s ($M = 3.82$, $SD = 1.31$). The effect size was small ($\eta^2 = .04$). Similarly, there are significant differences in terms of investing experience, particularly between those with less than one year of experience ($M = 4.69$, $SD = 1.01$) and those with 4 to 9 years of experience ($M = 4.01$, $SD = 1.13$), though the effect size is small ($\eta^2 = .04$). Hence, Hypothesis H4f is supported.

H4g: There are significant demographic differences for perceived behavioural control.

Significant differences for perceived behavioural control are found between males ($M = 4.10$, $SD = 1.13$) and females ($M = 4.58$, $SD = 1.01$), although the effect size is small ($\eta^2 = .05$). There are no significant ethnic and education level differences. Significant differences are noted for age group, specifically between those in their 20s ($M = 4.53$, $SD = 1.01$) and 40s ($M = 3.82$, $SD = 1.07$), and the effect size was medium ($\eta^2 = 0.06$). Significant differences are found for employment sector, particularly between those in the private sector ($M = 4.36$, $SD = 1.09$) and those unemployed ($M = 4.14$, $SD = 1.09$), though the effect size is small ($\eta^2 = .03$). Medium size effect ($\eta^2 = .06$) differences are noted in terms of investing experience particularly between those

with less than one year of experience ($M = 4.87$, $SD = 0.82$) and those with 1 to 3 years of experience ($M = 4.38$, $SD = 1.11$) and those with 4 to 9 years of experience ($M = 4.00$, $SD = 1.10$). Therefore, Hypothesis H4g is supported.

H4h: There are significant demographic differences for annual report financial statements usage.

Significant differences are found for annual report financial statements usage between males ($M = 3.76$, $SD = 1.34$) and females ($M = 4.19$, $SD = 1.18$), though the effect size is small ($\eta^2 = .03$). Once again, there are no significant differences in terms of ethnicity. Nonetheless, there are significant medium effect size ($\eta^2 = .06$) differences in terms of age group specifically between those in their 20s ($M = 4.24$, $SD = 1.23$) and those in their 30s ($M = 3.76$, $SD = 1.22$) and 40s ($M = 3.45$, $SD = 1.39$). Significant education level differences are also noted between those with a SPM qualification ($M = 3.56$, $SD = 1.25$) and those with a diploma ($M = 4.12$, $SD = 1.26$), though the effect size is small ($\eta^2 = .03$). There are also significant annual report financial statements usage differences between those employed in the private sector ($M = 4.03$, $SD = 1.27$) and the unemployed ($M = 2.98$, $SD = 1.26$), though the effect size is small ($\eta^2 = .03$). Medium effect size ($\eta^2 = .06$) differences are also noted between those with less than one year of experience ($M = 4.67$, $SD = 1.11$) and those with 1 to 3 years of experience ($M = 4.00$, $SD = 1.28$). Therefore, Hypothesis H4f is supported.

6.14 Chapter Summary

This chapter discussed the findings of this study. Table 6.35 summarises the results of the hypotheses tested using hierarchical multiple regression analysis. All hypotheses

are supported. The next chapter discusses the major findings in relation to the research objectives and concludes the thesis.

Table 6.35: Summary of Hypothesis Testing Results

Hypothesis	Supported/ Not Supported
H1	Supported
H2	Supported
H3a	Supported
H3b	Supported
H3c	Supported
H3d	Supported
H3e	Supported
H3f	Supported
H4a	Supported
H4b	Supported
H4c	Supported
H4d	Supported
H4e	Supported
H4f	Supported
H4g	Supported
H4h	Supported

CHAPTER 7: DISCUSSION AND CONCLUSION

7.1 Introduction

This chapter discusses the findings of the previous chapter in Section 7.2. It also highlights the implications of this study in Section 7.3 and its contributions in Section 7.4. The limitations and suggestions for future research are discussed in Section 7.5. Section 7.6 which is the Conclusion ends the study.

7.2 Discussion

The key findings of this research in relation to the four research objectives stated in Chapter 1 are discussed in this section.

7.2.1 Research Objective 1:

To examine the influence of financial statement knowledge on Malaysian individual investors' annual report financial statements usage.

Multiple regression analysis revealed that financial statement knowledge had a statistically significant relationship with Malaysian individual investors' annual report financial statements usage after controlling for basic financial knowledge and demographic factors. The effect size of this variable was large. Furthermore, of the seven independent variables examined, financial statement knowledge had the second highest correlation with the dependent variable, underscoring its importance in affecting annual report financial statement usage. Hence, findings demonstrate that financial

statement knowledge influences Malaysian individual investors' annual report financial statements usage.

Prior financial literacy studies have reported a positive correlation between different types of financial knowledge and financial behaviour, such as knowledge of the stock market and stock investing (Arora & Marwaha, 2013) as well as knowledge of the pension system and financial savings (Landerretche & Martinez, 2013). Therefore, findings are consistent with these studies.

Several scholars have found that basic financial knowledge influences financial behaviour (such as Atkinson & Messy, 2012; Loke, 2016; Lusardi & Mitchell, 2008). Thus, basic financial knowledge was employed as a control variable in this study. Nonetheless, all four models showed that basic financial knowledge did not have a statistically significant influence on the dependent variable. In contrast, there was a large effect size and statistically significant correlation between financial statement knowledge and annual report financial statements usage. This demonstrates that financial statement knowledge is a better predictor of Malaysian individual investors' annual report financial statement usage compared to basic financial knowledge.

Furthermore, the low correlation between basic financial knowledge and financial statement knowledge ($r = 0.16$, $p < 0.01$) shows that individuals with high basic financial literacy may not have high financial statement knowledge and vice-versa. As such, financial statement knowledge can be regarded as a specialised type of financial knowledge that individuals must expend time, effort and cost to acquire and is not necessarily possessed by those with high basic financial knowledge. Since prior studies have demonstrated that financial statements usage leads to superior investment decision-

making and portfolio returns (Francis & Schipper, 1999; Piotroski, 2000), the corollary is that financial statement knowledge can be regarded as a type of human capital that contributes to superior investment decision-making, which is accordance with human capital theory. Hence, this study provides empirical support that human capital theory is appropriate in explaining the relationship between financial statement knowledge and individual investors' annual report financial statements usage.

7.2.2 Research Objective 2:

To determine the extent to which diligence moderates the relationship between financial statement knowledge and Malaysian individual investors' annual report financial statements usage.

It was stated in Chapter 4 that annual report financial statements are inherently long and complex. Individuals may require more than financial statement knowledge to be willing to spend time and effort to read and understand them. This study employed the term diligence to describe the combination of self-discipline and thoroughness. It was hypothesised that diligence would act as a moderator on the relationship between financial statement knowledge and Malaysian individual investors' annual report financial statements usage.

When diligence was added as an independent variable in hierarchical multiple regression analysis, it had a statistically significant correlation with annual report financial statements usage in both Model 3 ($\beta = 0.04, p < 0.005$) and Model 4 ($\beta = 0.03, p < 0.005$). Furthermore, when the moderator was incorporated into Model 4 of hierarchical multiple regression analysis, there was a statistically significant relationship with the dependent variable ($\beta = 0.02, p < 0.005$) after controlling for basic financial

knowledge and demographic factors. Even though the effect size was small, diligence nonetheless had a positive moderating effect on the relationship between financial statement knowledge and annual report financial statements usage.

The moderating influence of diligence partially explains the paradox of why some individual investors with high financial statement knowledge do not consistently use annual report financial statements, *ceteris paribus*. In accordance with the presumption in human capital theory, high financial statement knowledge should logically translate into high annual report financial statements usage since investors would have the requisite knowledge to understand them but as preliminary interviews with experienced investors and the research findings revealed, this is not always the case. Findings demonstrated that in order to consistently use annual report financial statements, individual investors need diligence combined with financial statement knowledge.

Therefore, diligence represents a human capital skill that is important to stock investors because it has a positive influence on the extent to which they use annual report financial statements. By highlighting the role played by diligence, this study extends the application of human capital theory to the skills needed by stock investors.

7.2.3 Research Objective 3:

To examine the influence of the following on Malaysian individual investors' annual report financial statements usage:

- a. Investment horizon attitude**
- b. Investing luck attitude**
- c. Trading attitude**
- d. Financial statements usage attitude**

- e. **Subjective norm**
- f. **Perceived behavioural control**

7.2.3.1 Investment Horizon Attitude and Annual Report Financial Statements Usage

Investment horizon attitude is not one of the conventional predictors in TPB. Despite that, multiple regression analysis revealed that this variable had a positively influence on Malaysian individual investors' annual report financial statements usage after controlling for basic financial knowledge and demographic factors. The effect size was small. Nonetheless, findings demonstrated that a longer investment horizon was related to greater usage of financial statements which supports the literature stating that investment horizon impacts the behaviour of individual investors (such as Al-Tamini, 2006; Monetary Authority of Singapore, 2005). Findings also showed that with regards to the behaviour studied, this additional independent variable can be included in a TPB-based framework as it improves its overall predictive ability.

7.2.3.2 Investing Luck Attitude and Annual Report Financial Statements Usage

Similar to investment horizon attitude, investing luck attitude was hypothesised as an additional predictor variable that would influence the dependent variable in this partially TPB-based framework. Multiple regression analysis revealed that investing luck attitude had a statistically negative correlation with individual investors' annual report financial statements usage after controlling for basic financial knowledge and demographic factors. Notwithstanding the small effect size, this merits its inclusion in

the research framework and serves to extend the application of TPB in the realm of financial statements usage behaviour of individual investors.

Findings indicate that those reliant on investing luck are less inclined to undertake financial statement analysis when investing in stocks, suggesting that these individuals display gambling tendencies. Prior studies have shown that investors who believe in investing luck are reliant on heuristics when making investment decisions (Aspara & Tikkanen, 2011; Bhattacharya et al., 2017; Chandra & Kumar, 2012). In contrast, those who meticulously research their investment are less reliant on luck (Nga & Leong, 2013). Therefore, investing luck attitude negatively influences Malaysian individual investors' annual report financial statements usage.

7.2.3.3 Trading Attitude and Annual Report Financial Statements Usage

Trading attitude was another additional predictor variable for this partially TPB-based framework. Findings showed that trading attitude had a negative relationship with individual investors' annual report financial statements usage after controlling for basic financial knowledge and demographic factors. The effect size was small. Findings indicate that investors who favour trading are less inclined to use annual report financial statements. Why this is so can be attributed to a combination of two factors.

The first is overconfidence among investors which causes them to trade more frequently. While some studies have found a positive association between knowledge and trading frequency (Graham et al., 2009; Liivamägi, 2016), others reported that in addition, risk-seeking behaviour influenced overtrading (Grinblatt & Keloharju, 2009). Hence, it could be while they may have high financial statement knowledge, risk-

seeking investors who are overconfident about their stock trading skills may feel little need to do due diligence such as examining a firm's financial statements.

The second factor is due to the inherent nature of stock trading. Since stock trading is dependent on short-term price fluctuations (Israelov & Katz, 2011) that have little relevance to the firm's annual financial performance, traders (as opposed to long-term investors) are less reliant on financial statements usage. Therefore, in the context of this research, TPB is enhanced by the inclusion of this predictor variable.

7.2.3.4 Financial Statements Usage Attitude and Annual Report Financial Statements Usage

Multiple regression analysis documented that attitude towards financial statements usage was positively correlated with individual investors' annual report financial statements usage after controlling for basic financial knowledge and demographic factors. This predictor variable had the third highest correlation with the dependent variable and the effect size was large. Investors with a positive attitude towards financial statements usage, such as regarding financial statements as useful and important, reported higher usage of annual report financial statements. This is consistent with the TPB literature that demonstrates a strong positive association between attitudes towards a type of behaviour and the behaviour itself (for instance, Ajzen, 1991; Dennis et al., 2009; Rutherford & DeVaney, 2009). Consequently, TPB is a suitable theoretical basis explaining the relationship between attitude towards financial statements usage and Malaysian individual investors' annual report financial statements usage.

7.2.3.5 Subjective Norm and Annual Report Financial Statements Usage

The study found that subjective norm was positively associated with individual investors' annual report financial statements usage after controlling for basic financial knowledge and demographic factors. Indeed, if the individual investor's significant others for investing use (do not use) annual report financial statements, the investors would be more (less) likely to do so. Again, this is consistent with the TPB literature regarding the positive association between subjective norm and behaviour (for instance, Ajzen, 1991; Rutherford & DeVaney, 2009; Warner & Aberg, 2006) and supports TPB as a theoretical basis of the study.

Multiple regression analysis revealed that amongst all the predictor variables, subjective norm elicited the highest correlation with the dependent variable and the effect size was the largest of all (Cohen's $f^2 = 0.4$). This shows that subjective norm is highly influential in motivating the annual report financial statements usage of individual investors. If significant others use annual report financial statement the individual investor is likely to mimic this behaviour.

One explanation for this phenomenon is that individual investors may regard one or several other investors as exemplars of successful investors. When their exemplars use annual report financial statement, these investors feel compelled to emulate them to achieve investing success. As mentioned in Chapter 4, these exemplars can consist of family and friends. On the other hand, if these exemplars do not utilise financial statements, the investors may regard them as unnecessary or unimportant. A similar inference was made by Gopi and Ramayah (2007) regarding subjective norm and internet stock trading in Malaysia.

Another explanation for this phenomenon is that investors interact and behave similarly with like-minded peers. So if significant others rely on financial statements usage, the investor is likely to do so and vice versa. Indeed, several financial literacy studies document the link between socialising agents (such as family and friends) and financial behaviour (Chung & Park, 2014; Sabri & MacDonald, 2010). Prior research on investor behaviour also demonstrated that significant others exert an influence on the behaviour of individual investors (Barber & Odean, 2013; Ng & Wu, 2010). Further support is provided by the corporate sector whereby the Chief Executive Officer (CEO) of a Malaysian financial education and investment firm remarked that if an individual surrounds himself with speculators that will be his common theme (Mahalingam, 2017).

7.2.3.6 Perceived Behavioural Control and Annual Report Financial Statements Usage

The study also found that perceived behavioural control positively influenced individual investors' annual report financial statements usage after controlling for basic financial knowledge and demographic factors. The effect size was small, however. It appears that when investors perceive that they have more control in understanding annual report financial statements, they are more likely to use them. Investors' perceived behavioural control might be linked to their financial statement knowledge. Indeed, there was a statistically significant correlation between financial statement knowledge and perceived behavioural control. Findings support prior TPB research that established a positive correlation between perceived behavioural control and behaviour (Asaad, 2015; Babiarz & Robb, 2014; Robb & Woodyard, 2011), thus indicating that TPB is a suitable underlying theory for this study.

7.2.4 Research Objective 4:

To evaluate demographic differences in financial statement knowledge, attitudes, subjective norm, perceived behavioural control and annual report financial statements usage among Malaysian individual investors.

As mentioned in Chapter 4, examining demographic differences in these variables is important for developing more holistic investor education programmes, as it allows providers to target specific groups in areas of shortcomings. These differences are explained in the following subsections.

7.2.4.1 Financial Statement Knowledge Differences

Many financial literacy studies have examined demographic differences in financial literacy or financial knowledge (for example, Atkinson & Messy, 2012; Lusardi, 2015; Xu & Zia, 2012). This study employed six demographic variables, namely gender, ethnicity, age group, education level, employment sector and investing experience. T-tests and ANOVA were performed to discern demographic differences in financial statement knowledge. There were statistically significant differences between groups only for education level. However, the effect size was small. While financial statement knowledge was highest among those with postgraduate education, those with a diploma had higher knowledge than those with a bachelor degree. These curious findings are explained as follows.

Some respondents with a diploma had qualifications in business, accounting or finance, so they had higher financial statement knowledge than bachelor degree holders

in other disciplines⁶¹. This illustrates the specialised nature of financial statement knowledge and the importance of relevant educational attainment. Even though higher educational attainment is associated with higher financial knowledge, Lusardi (2017, p. 12) pointed out that, “a university education does not make people financial experts”, an assertion that is valid even among doctorate degree holders (Hibbert et al., 2012).

Furthermore, evidence showing that education level is significant for financial statement knowledge supports the assertion that acquiring financial statement knowledge is a human capital investment. As discussed in Chapter 4, education contributes to the acquisition of knowledge which in turn drives human behaviour that promotes wealth maximisation. Hence, findings suggest that educational attainment enables individuals to overcome other innate differences such as gender, age and ethnicity in the acquisition of financial statement knowledge. Findings also supported prior studies that have found no gender differences in the general financial knowledge of Malaysians (Ali et al., 2015; Loke, 2015).

7.2.4.2 Investment Horizon Attitude Differences

Interestingly, there were no significant differences in terms of gender, age, employment sector and investing experience for investment horizon attitude. However, there was a significant though small effect size difference in terms of ethnicity where the Chinese had a longer investment horizon attitude compared to the Indians. Similarly, there were significant education level differences as those with a bachelor degree had a small effect size but significantly longer investment horizon attitude compared to those with a diploma.

⁶¹ Based on a follow-up discussion with personnel from the stockbrokerage firm where data was collected. The personnel had information regarding the education background of respondents.

7.2.4.3 Investing Luck Attitude Differences

There was a small but significant gender difference for investing luck attitude. It appears that females exhibited a stronger belief in investing luck compared to males, though the effect size was small. This finding was consistent with prior studies documenting a higher level of superstition and belief in luck in women compared to men. For instance, experimental research found that females were more superstitious than males (Wiseman & Watt, 2004) and that they responded more negatively to perceived bad luck than males (Gill & Prowse, 2014). However, there were no significant differences in terms of ethnicity, age group, education level, employment sector and investing experience.

7.2.4.4 Trading Attitude Differences

For trading attitude, there were no significant differences between males and females. Similarly, the differences between ethnic groups were not statistically significant. Investors in their 20s and 30s had significantly higher frequency attitude compared to those in their 40s, though the effect size was small. Higher trading is associated with greater risk tolerance and some studies show that risk tolerance declines with age as individuals adopt a more conservative financial outlook as they approach retirement (Hibbert et al., 2012; Kannadhasan, 2015). Therefore, this finding could be the outcome of such sentiments. There were no significant differences among respondents for trading attitude based on education level, employment sector and investing experience.

7.2.4.5 Financial Statement Usage Attitude Differences

As for financial statements usage attitude, females had a significantly more favourable attitude towards financial statements usage compared to males, though the effect size was small. This might be attributed to their more methodical and cautious attitude towards investing (Jacobsen et al., 2008) as well as their actual usage of annual report financial statements. Notably, there were no significant differences among ethnicities. Attitude towards financial statements usage appeared to decline with age as individual investors in their 20s had a significantly more positive attitude towards financial statements usage than those in their 30s and 40s but the effect size was small. Education level and employment sector appeared to have no statistical significance for financial statements usage attitude.

Similar to age group, financial statements usage attitude seemed to decline with investing experience as new investors reported a significantly more positive attitude towards financial statements usage compared to those who have longer investing experience, though again, the effect size was small. The downward trend in age and investing experience regarding financial statements usage attitude could be due to younger and less experienced investors showing greater enthusiasm towards financial statement analysis, which declines as they age and adopt alternative investment approaches⁶².

⁶² Opinion of an individual investor in his 50s with almost 30 years of experience who was interviewed during the preliminary stage of the questionnaire development discussed in Chapter 5.

7.2.4.6 Subjective Norm Differences

Subjective norm was the most significant predictor variable. Gender differences were noted with females having higher subjective norm than males, though the effect size was small. The literature provides evidence that women are more compliant and tend to conform with majority opinions compared to men (Venkatesh & Morris, 2000). Therefore, they are more likely to be influenced by significant others and mimic their investment behaviour, including using financial statements for investment decision-making. No significant differences were discerned between the different races.

Nonetheless, small effect size differences were found for age groups. Subjective norm was significantly higher for those in their 20s than those in their 40s but the differences between the other groups were not statistically significant. Youths are more impressionable and influenced by socialising agents such as their peers and elders (Sabri & MacDonald, 2010) and this could explain the higher level of subjective norm for annual report financial statements usage among younger individual investors. The differences for education level and employment sector were not statistically significant. However, small effect size differences were observed for investing experience. Similar to age group, subjective norm declined with investing experience. Perhaps investors with more experience are more confident about their investing skills and are therefore less influenced by the stock investing behaviour of significant others.

7.2.4.7 Perceived Behavioural Control Differences

As for perceived behavioural control (PCB), that of females was significantly higher than that of males, which contradicts the literature suggesting that compared to women,

men are more confident about their investing ability (Jacobsen et al., 2014) and financial knowledge (Hung et al., 2009). This suggests that Malaysian women are more confident in their ability to use annual report financial statements than Malaysian men. No statistically significant differences were observed for ethnicity. Those in their 20s had significantly higher PCB than those in their 40s, though the differences between the other age groups were not significant. The effect size was medium. No statistically significant differences were found for education level and employment sector. Interestingly, PCB declined with investing experience, and the effect size was medium. While findings seem to suggest that with age and more experience, investors become less confident of their ability to use annual report financial statements for investment decision-making, it could also be interpreted that older and more experienced investors may have never been very confident of their ability to use financial statements for investment decision-making in the first place.

7.2.4.8 Annual Report Financial Statements Usage Differences

Differences in financial statements usage for investment decision-making for the six demographic variables were examined. Findings revealed a statistically significant difference between genders with females exhibiting a higher level of financial statements usage than males, though the effect size was small. Gender differences possibly occur because females have more cautious financial behaviour than males as demonstrated in previous research (Jacobsen et al., 2014; Kannadhasan, 2015) so women may exercise greater due diligence than men when making stock investment decisions, including relying on financial statements.

Despite literature documenting ethnic differences in financial behaviour (Loke, 2016; Sabri & MacDonald, 2010), no statistically significant differences were discerned among respondents of this study based on ethnicity. Hence, it appears that Malaysian investors of different races have an equal likelihood of using annual report financial statements.

Statistically significant age group differences were observed and the effect size was medium. Respondents in their 20s reportedly had the highest average usage of financial statements followed by those in their 40s and then those in their 30s. Those in their 50s had the lowest average usage of financial statements among the four groups though differences were not statistically significant. Findings contrast with prior research that finds low negative financial behaviour for individuals in their 20s (Loke, 2016).

Statistically significant differences were also noted for education level but again, the effect size was small. Those with a diploma had a higher statistically significant usage of financial statements compared to those with secondary school qualifications. However, the differences between those with a bachelor degree and postgraduate qualifications were not statistically significant. Up to a certain extent, findings support prior studies associating positive financial behaviour with higher education level (Atkinson & Messy, 2012; van Rooij et al., 2007).

For employment sector, there were statistically significant differences between those who were in the private sector and the unemployed with the unemployed scoring the lowest usage of financial statements for investment decision-making among the four groups. In contrast, the mean financial statements usage among private sector employees was the highest. Nonetheless, the effect size was small. The differences

between those employed in the government sector and self-employed were not statistically significant. Studies document that income security is associated with lower financial literacy (Alessie et al., 2011; Loke, 2015) so the unemployed (such as housewives who are supported financially by their husbands or students who have steady allowances from their parents) and pensioners may take a more relaxed view of stock investing and are less reliant on financial statements usage for investment decision-making⁶³.

Statistically significant differences were found for investing experience and the effect size was medium. Investors with less than one year's experience reported higher use of financial statements for investment decision-making compared to other groups. In contrast, investors with ten years or more experience reported the second lowest financial statements usage (after those with four to nine years' experience), though differences are not statistically significant. It appears that experienced investors are less reliant on financial statements for investment decision-making. This supports findings on lack of quantitative analysis among experienced Malaysian individual investors by Jaiyeoba and Haron (2016).

7.3 Implications of the Findings

Findings revealed that financial statement knowledge and attitudinal factors influence financial statements usage among Malaysian individual investors. These findings have several implications which are discussed as follows. The general implications are discussed first followed by implications for regulators and preparers as well as financial education providers.

⁶³ Opinion of the stockbrokerage firm personnel mentioned earlier.

The first implication is that financial statement knowledge is vital for financial statement usage and by extension financial statement analysis. Investors cannot understand and use annual report financial statements effectively if they lack this type of knowledge. Their ability to perform financial statement analysis is especially impaired by a lack of comprehension of the information presented in financial statements. Findings showed that even though respondents possessed satisfactory financial statement knowledge in general, there were still gaps in their knowledge. Such shortcomings inhibits them from having a fuller understanding of the financial information presented to them and increases the risk of making less optimal investment decisions. In terms of financial statement knowledge, of the six demographic factors examined, statistically significant differences were found only for education level, though the relevance of academic qualifications was perhaps more important than higher education level alone. All these indicate that financial statement knowledge is a type of human capital and the acquisition of it constitutes a human capital investment.

Human capital is multifarious, consisting of not just knowledge but also skills, attitudes and competencies. Findings suggest that with regards to financial statements usage, diligence, which is a combination of self-discipline and thoroughness, is a crucial prerequisite and a complement to financial statement knowledge. In other words, it is not merely enough for individual investors to have high financial statement knowledge, but they must also be diligent in using them.

As important as financial statement knowledge may be, findings demonstrate that respondents were most likely to use annual report financial statements if their significant others do so. Thus, subjective norm is the most significant predictor variable

for Malaysian individual investors' financial statements usage. This is most evident in females, those in their 20s and with less than one year of experience. Findings suggest that individuals with these characteristics are more easily influenced by the financial statements usage compared to other groups. The powerful influence exerted by others on such individual investors' annual report financial statement usage is rather perplexing because the correlation between this variable and financial statement knowledge is small ($r = .25, p < .01$). This suggests that some individual investors do not have high financial statement knowledge but use annual report financial statements anyway because significant others do so. If so, it is questionable what information these investors actually glean from annual report financial statements since they seem to lack the knowledge to undertake time-consuming financial statement analysis. Hence, they are at risk of misunderstanding the financial information which consequently leads to sub-optimal investment decision-making. These are serious implications.

Findings also suggest that attitudes influence Malaysian individual investors' annual report financial statements usage to varying degrees. Of the attitudes examined, financial statements usage attitude was the most significant, though its level of significance was less compared to subjective norm and financial statement knowledge. Females, those in their 20s and those with less than one year of investing experience proved to have the most favourable attitude towards annual report financial statements usage. This implies that males, older and more experienced investors have a less positive attitude towards annual report financial statements usage.

Three other investor attitudes were also significant predictors of annual report financial statements usage, though their effect sizes were lower compared to financial statements usage attitude. Findings suggest that a longer investment horizon attitude is

a positive influence on the dependent variable and is most evident among Chinese investors and those with a diploma qualification. However, findings imply that if individual investors are more reliant on luck, their annual report financial statements usage decreases. This should be of concern especially for female investors who are more likely to rely on luck compared to males. Similarly, a favourable attitude towards trading decreases the likelihood of using annual report financial statements. Those in their 20s have a more favourable attitude towards trading compared to older investors. While a tendency to trade may partly stem from innate risk-seeking instincts (Grinblatt & Keloharju, 2009), it also springs from a lack of financial knowledge (Monetary Authority of Singapore, 2005). Hence, financial education programmes might help in curbing speculative tendencies.

Findings also imply that individual investors need to have the conviction that they are able to use financial statements effectively in order to use them. Perceived behavioural control elicited a significant positive influence on annual report financial statements usage and it was the fourth most significant factor after subjective norm, financial statement knowledge and financial statements usage attitude. Interestingly, findings suggest that males, older investors and those with more investing experience have lower levels of perceived behavioural control with regards to annual report financial statements usage. Why this is so warrant further investigation.

Furthermore, findings indicate that usage of financial statements among Malaysian individual investors is moderate. This contrasts with studies by previous researchers which suggested high financial statements usage (Jamal et al., 2014; Lai et al., 2001; Nik Muhammad & Abdullah, 2009), though it must be emphasised that the primary goal of these papers was not to evaluate financial statements usage levels. However,

compared to other countries (Al-Ajmi, 2009; De Zoysa & Rudkin, 2010; Johansen & Plenborg, 2013), the levels of financial statements usage among individual investors is lower. This implies that Malaysian individual investors are less reliant on annual report financial statements compared to their international counterparts.

Moreover, findings imply that annual report financial statements are not well utilised by Malaysian individual investors and that some type of financial statements are more under-utilised than others. As highlighted in Chapter 6, the income statement was the most widely used, followed by the cash flow statement and balance sheet. The relatively lower level of balance sheet usage differs somewhat from findings in other countries where the balance sheet is ranked second in importance after the income statement (Al-Ajmi, 2009; De Zoysa & Rudkin, 2010). Plus, in countries such as the US, the relevance of balance sheet information for stock valuation increased over time (Francis & Schipper, 1999). The situation in Malaysia also contrasts with literature that stresses the importance of balance sheets when evaluating a firm's investment prospects (for example, Graham & Dodd, 2009).

Additionally, findings suggest that there are limited demographic differences for Malaysian individual investors' annual report financial statements usage. In short, females are slightly heavier users of financial statements than males and higher education attainment increases financial statements usage, which is most pronounced in the differences between those with secondary school qualification and diploma holders. Financial statements usage among the unemployed is lower compared to other groups which do not differ significantly. Although older and more experienced investors had lower annual report financial statements usage, in the absence of further research, it is premature to infer that usage declines with age and experience. While it is possible that

age and experience lead to a decrease in usage, it could well be that these older and more experienced investors have never used annual report financial statements. Notably, no significant differences were found among ethnic groups suggesting that the various races have similar levels of annual report financial statements usage.

7.3.1 Implications for Regulators and Preparers

As noted earlier, findings of the study suggest that in general, Malaysian individual investors do not have sufficiently high financial statement knowledge to understand annual report financial statements and financial statement usage among them is moderate at best. These have implications for regulators and preparer.

The understandability and usage of annual report financial statements among individual investors should be of interest to regulators (particularly SCM and MASB) and preparers, because they a primary group for which these financial statements are prepared. Regulators are concerned about the usefulness and relevance of the information in financial statements to investors and what can be done to improve financial reporting. While preparers are fulfilling legal and mandatory obligations in publishing financial statements, feedback on actual usage by their target audiences indicates whether corporations need to expend additional effort or make presentational changes to convey the desired message regarding the entity's financial performance.

This study not only provides evidence that financial statements are moderately used by Malaysian individual investors but also that the balance sheet is the least utilised of the three types of financial statements. Since balance sheets contain important information regarding the financial position of entities, the comparative lack of usage

among Malaysia individual investors should be remedied. Therefore, regulators should take note of this phenomenon which deserves further investigation. It is suggested that regulators collaborate with relevant parties such as Bursa in formulating investor education programmes that elevate financial statements usage among individual investors. More on this is discussed in the next subsection.

7.3.2 Implications for Investor Education Programmes

Increasing usage of financial statements among individual investors requires effective investor education programmes. As discussed in Chapter 4, education is regarded as a human capital investment and financial education programmes are designed and implemented for the purpose of increasing the human capital of investors. Currently, many financial statement analysis courses and seminars are conducted in Malaysia. These include those conducted by Bursa, SCM and FPAM as well as those by stockbrokerage firms. Financial statement knowledge is unquestionably important for understanding and analysing financial statements. It influences investment decision-making. This study revealed that approximately 25% of respondents had low financial statement knowledge so more education on it will have a salubrious effect on them. The study also found that financial statement knowledge has a positive correlation with an investor's perceived behavioural control regarding financial statements usage. Hence, through education, individual investors not only increase their store of financial statement knowledge but also develop the confidence in consistently using them.

The effectiveness of investor education programmes in Malaysia has not been studied by scholars. Nonetheless, researchers in other countries found that many financial literacy programmes failed to elicit positive long-term behavioural changes among participants (Poon & Olen, 2015; Worthington, 2013). This could be because

these programmes only focus on increasing knowledge and do not shape attitudes that promote behavioural changes. Estelami (2009) observed that understanding the motivations that underpin financial decision-making will help improve financial literacy programmes. The vast literature on TPB also finds that attitudes profoundly shape behaviour.

Since this research shows that attitudinal factors also influence Malaysian individual investors' annual report financial statements usage, adopting a holistic approach by providing financial statement knowledge and imbuing individual investors with positive attitudes and confidence will result in more effective outcomes that translate into long-term behavioural improvements. This includes inculcating attitudes such as recognizing the importance and value of financial statements as a source of information for investment decision-making as well as having a long-term investing horizon and eschewing the temptation to trade. Investor education programmes should also endeavour to increase the diligence level of participants regarding financial statement usage.

In light of the strong influence of subjective norm on financial statement usage, it is further suggested that financial literacy programmes could include talks by "social influencers" within investing circles. This would add further impetus for individual investors to undertake financial statement usage.

Therefore, it is hoped that this research will provide insights that are useful in the development of more holistic investor education programmes. It is believed that investor education providers should target young individual investors as they stand to gain the most. This research has demonstrated that they are more easily influenced

which makes them ideal participants for holistic financial statement literacy programmes.

7.4 Contributions of the Study

The theoretical, methodological and practical contributions of this study are discussed in the following paragraphs.

7.4.1 Theoretical Contributions

This study makes several important contributions to the literature. Primarily, it addresses the hitherto largely neglected subject of factors that influence financial statements usage among individual investors. Since this is a multi-disciplinary subject which encompasses financial reporting, financial literacy and individual investor behaviour, findings address the three main gaps in the literature articulated in Chapter 3.

Firstly, the study contributes to the paucity of research on the understandability of the numerical accounting information in annual report financial statements. As highlighted in the literature review, the vast preponderance of research on the understandability of annual reports tends to focus on narratives, though some research has been done on the images contained therein. While Malaysian studies demonstrate that annual report narratives are difficult to read (Abdul Rahman, 2014; Abdul Raman et al., 2012; Mohammad & Abdul Rahman, 2006) and that individual investors are reliant on graphical information disclosures (Isa, 2006), it is unclear if users perceive the numerical accounting information as difficult to understand. The quantitative element of annual reports is equally, if not more important since financial statements are

arguably the heart of annual reports. Linguistic proficiency or literacy is essential for understanding pure narratives. However, to effectively understand the numerical accounting information in financial statements, readers must have financial statement knowledge.

Using this proxy for understandability, the study provides evidence that Malaysian individual investors have sufficient financial statement knowledge to understand some aspects of annual report financial statements, though there are some gaps in their knowledge. Hence, this study serves to complement research on the narratives and images to obtain a fuller picture of the overall understandability of annual reports for Malaysian individual investors. In addition, this is a pioneering study that provides empirical evidence of the types of financial statements investors use and the extent of usage which were hitherto neglected subjects in Malaysian financial reporting research. Findings allow comparisons to be made with other countries where such research is done, as discussed in Section 7.3. The study also supports prior qualitative research that suggested Malaysian individual investors were less reliant on financial statements usage (Jaiyeoba & Haron, 2006).

While linguistic proficiency can be attained by the populace through general education (in terms of years at school and university), the same cannot be said of financial statement knowledge, which is specialised knowledge that those lacking a background in accounting and finance would have to spend time and cost acquiring. Lack of financial statement knowledge therefore would be an impediment to usage of financial statements by individual investors, an assertion that is supported by this study. Indeed, findings demonstrated that financial statement knowledge had a significant influence on usage of annual report financial statements among Malaysian individual.

Secondly, this study also contributes to the body of research on financial literacy, specifically in the area of stock investing. While existing studies examine certain types of financial knowledge associated with stock investing such as knowledge of the stock market and portfolio diversification (Abreu & Mendes, 2010; Arora & Marwaha, 2013; Mouna & Jarboui, 2015; van Rooij et al., 2007; Wang, 2009; Xia et al., 2014; Yao & Xu, 2015), research on financial statement knowledge of investors is limited. Since financial statements are important sources of financial information about entities which are useful for investment decision-making, ascertaining the financial statement knowledge of individual investors and demonstrating its relationship with financial statement usage contributes to this nascent field of research. Therefore this study can be regarded as an extension to the work of Callen et al. (2016). While the former showed how financial statement literacy affects usage of cash flow statements using secondary data, this study provides survey evidence of the correlation between actual financial statement knowledge and usage of the three types of financial statements.

Thirdly, this study contributes to an interrelated aspect of the literature on individual investor behaviour. So far, researchers have documented financial statements usage as part of the investment decision-making process but what influences financial statement usage among individual investors is still surprisingly under-researched. Hence, this study provides insights into some of the factors that influence individual investor behaviour regarding annual report financial statements usage from the perspective of a multi-ethnic developing Asian country.

Two underlying theories, namely human capital theory and TPB were harnessed in this thesis. In doing so, this study extends research using each of these theories. The

first is with regards to human capital theory. This study provides evidence that financial statement knowledge is a positive influence on individual investors' annual report financial statements usage. Furthermore, diligence, which is another aspect of human capital, has a positive moderating influence on annual report financial statements usage. While human capital theory has been used by several researchers in financial literacy, accounting and finance, existing studies tend to focus exclusively on knowledge at the exclusion of other human capital elements such as skills, attitudes and competencies. This is an early study that highlights the importance of a relatively neglected other element of human capital and its moderating effect on the relationship between knowledge and behaviour.

Secondly, the study extends TPB in explaining individual investor behaviour. Prior studies merely applied TPB to examine why individuals intend to invest in stocks (Pascual-Ezama et al., 2013; Phan & Zhou, 2014; Sondari & Sudarsono, 2015) or what influences intention to trade online (Gopi & Ramayah, 2007). This study demonstrates that TPB can be applied as a framework for explaining some of the factors that influence individual investor behaviour regarding annual report financial statements usage.

Thirdly, a unique contribution of this study is the inclusion of several additional predictor variables for TPB. Investment horizon attitude, investing luck attitude and trading attitude are not conventional predictor variables but they were included in the model based on inferences made from the literature, interviews with experienced investors and expert panel feedback. These variables also fulfil the requirements outlined by Fishbein and Ajzen (2010, as cited in Ajzen, 2011b, p. 1119) for inclusion in the model. Findings revealed that these variables improved the predictive ability of

the overall model indicating that for the behaviour studied these unconventional predictor variables are appropriate for inclusion in a TPB-based model.

7.4.2 Methodological Contributions

The research questionnaire is regarded as an original contribution. Firstly is the development of an instrument to evaluate financial statement knowledge. Currently, there are numerous instruments in the literature that measure basic and advanced financial knowledge such as knowledge of stocks and bonds (for example, Arora & Marwaha, 2013; Lusardi, 2015). However, an instrument that measures financial statement knowledge was still lacking and this shortcoming has perhaps impeded research in the field.

Employing existing instruments on basic financial knowledge, while convenient, is inadequate for assessing financial statement knowledge. The usage of these instruments have been criticised as being too simplistic (Worthington, 2013) and unrelated to the financial behaviour examined (Poon & Olen, 2015). Using instruments that are poorly associated with the behaviour examined may be a reason why some researchers have found knowledge to be a poor predictor of behaviour. This is evident when basic financial knowledge, using the instrument by Lusardi and Mitchell (2011), was employed as a control variable. This variable did not have a statistically significant relationship with the dependent variable which demonstrated the flaw in using an instrument for basic financial knowledge to assess specific and advanced financial behaviour.

Therefore, the development of a financial statement knowledge instrument is timely and relevant. While the instrument represents an original methodological contribution, consistent with many financial literacy studies, financial statement knowledge is assessed using multiple choice questions. This approach allows for the appraisal of objective financial knowledge, which is superior to subjective, or self-perceived financial knowledge. Financial statement knowledge is utilised as a proxy for evaluating the user's understanding of financial statements.

The development of scales for evaluating investor attitudes, subjective norm and perceived behavioural control represents an additional methodological contribution. While there are several TPB-based instruments that examine factors that influence other aspects of individual investor behaviour (Gopi & Ramayah, 2007; Paetzold & Busch, 2014; Pascual-Ezama et al., 2013; Phan & Zhou, 2014; Sondari & Sudarsono, 2015), this study differs by focusing on factors that influence individual investors' financial statements usage.

7.4.3 Practical Contributions

As stated in Chapter 1, one of the motivations for this study is to educate investors. Findings of this study will be of practical use to preparers, regulators and investor education programme providers as discussed in the previous section. This is a comprehensive study that not only examines the determinants of annual report financial statements usage among Malaysian individual investors but also the extent of usage of these financial statements, the level of financial statement knowledge of individual investors as well as demographic differences. Such information will be useful in developing more effective investor education programmes for financial statements

usage. Informed or “intelligent investors”⁶⁴ are vital to the stability of stock markets because bubbles and crashes are the outcome of irrational investor behaviour. Hence, educating more investors to make wise investment decisions will have a positive effect at the individual and national level.

7.5 Limitations and Suggestions for Future Research

There are several limitations of this study. These and suggestions for future research are discussed as follows. Firstly, this study was confined to individual investors who are proficient in English with the explicit aim of complementing research on other sections of English language annual reports in Malaysia. However, it must be conceded that some individual investors prefer reading financial statements in their mother tongue, such as Malay and Chinese (other language versions are not available in Malaysia). Therefore, future research can be on the usage of vernacular financial statements by individual investors to examine whether language differences (a proxy for culture) translate into differences in financial statement knowledge, attitudes and annual report financial statements usage. This would make for interesting research because this study shows that the differences in these variables based on ethnicity are statistically insignificant for users of English annual report financial statements. Whether language differences would result in different behaviour is worth further investigation.

Secondly, even though this study examined the elements of financial statement literacy, namely financial statement knowledge, attitude towards financial statements usage and actual usage of financial statements, it fell short of evaluating financial statement literacy in Malaysia, since this was not a research objective. Nonetheless, this

⁶⁴ To borrow a term by Graham and Zweig (2006).

study is a starting point for future research on the development of a financial literacy scale or index based on a suitable weighted score of these variables. Financial statement literacy is a promising area of research that has the potential to enrich the literature on financial literacy. Topics for future research could include examining demographic differences in financial statement literacy, and comparisons of financial statement literacy between countries and between different periods.

Thirdly, the scope of this study is another limitation. No research can fully examine all the factors that influence a particular behaviour. A study is limited by its scope which in the case of this research is knowledge and attitudinal factors that influence financial statement usage. Other factors could influence financial statement usage such as time constraints and personality type. Information overload is another area worth further examination, especially in the context of complex financial statements. Furthermore, it is suggested that this study is replicated in other countries to ascertain national differences in factors that influence financial statements usage among individual investors.

Fourthly, this study does not investigate the factors that influence financial statement knowledge, which is beyond its scope. While it is commonplace in financial literacy to employ demographics as antecedents to financial knowledge, and demographic differences are noted in this study, other factors should be considered. This includes examining relevant educational qualifications and the extent to which the individual has expended time and effort to acquiring this form of human capital. Qualitative studies will provide rich insights as to how individuals obtain financial statement knowledge, a type of specialised knowledge.

Additional suggestions for future research are as follows. Several researchers find that low financial statement readability contributes to poor investment decision-making (Dellavigna & Pollet, 2009; Li, 2010). However, there is less research on how low financial knowledge contributes to suboptimal stock investment decision-making and this can be another future area of study.

It is also hoped that this study will be a starting point for future research on financial decision-making that stands to profit from financial statements analysis, for example investing in mutual funds (known in Malaysia as unit trusts) which is prevalent in Malaysia⁶⁵. Mutual fund investors erroneously assume that all funds guarantee good returns. However, there are wide fluctuations in fund performance and with the plethora of funds available, the ultimate decision on what funds to choose lies in the hands of investors. Herein they require skills which are akin to individual investors when picking stocks in which to invest. Unfortunately, as Nanigian (2012) summarised from prior literature, individuals tend to make rather uninformed decisions when selecting a mutual fund, a situation which is not necessarily improved by relying on the advice of their unit trust agents. According to Pellinen, Törmäkangas, and Uusitalo (2014), mutual fund investors tend to be highly reliant on “non-rational” (behavioural) factors when making investment decisions and that loyalty to the financial institution is a significant driver of investing in mutual funds.⁶⁶ Cashman (2012) provided evidence that investors picked funds based on convenience and ended up paying a premium ranging from 7% to 13% to invest in sub-advised funds⁶⁷.

⁶⁵ Malaysians invest in mutual funds in four scenarios. One, they freely invest in any funds that are available in the market. Two, they purchase investment-linked insurance policies in which the investment portion comprises investments in one or several mutual funds that are approved by the insurer. Three, they transfer part of their EPF savings into mutual funds of their choice that are listed by the EPF. Finally, they invest in mutual funds as part of their Private Retirement Scheme (PRS), a government initiative that was mentioned in Chapter 1.

⁶⁶ This phenomenon is more pronounced for walk-in investors compared to internet investors because the latter do not directly interact with mutual fund agents and are therefore less influenced by them.

⁶⁷ A sub-advised fund refers to a fund that lies outside the expertise of a family of funds and is outsourced to a third party sub-advisor. Such funds are reported to underperform family-advised funds (Cashman, 2012).

Furthermore, Bailey et al. (2011) demonstrated that the same behavioural shortcomings that rendered individuals incompetent of making good stock investment decisions also plagued them as mutual fund investors. These biases include the disposition effect, overconfidence, limited attention spans, narrow framing and home bias. Using a sample of US mutual fund investors, they reported that sophisticated investors held on to their investments for longer periods, paid lower fees and enjoyed better returns. On the other hand, investors with strong behavioural biases overtraded, had poor timing and were more inclined to chase fund performance. Hüsser and Wirth (2014) showed that mutual fund investors fell back on heuristics such as fund past performance when investing in funds, in spite of disclaimers that past performance is no indication of future performance. Finally, a study in China by Feng, Zhou, and Chan (2014) examined the ability of individual and institutional investors to select mutual funds. They found that overall, individual investors in China had no ability to select mutual funds.

These papers highlight the importance of financial knowledge and skills when investing in mutual funds. Indeed, Hüsser (2015) reported in his literature review that financial knowledge influenced mutual fund investors' understanding of mutual fund disclosures regarding fees and fund performance. Unbeknownst to many of them, mutual fund investors actually need to do due diligence and they require financial knowledge to select funds and monitor their performance. This is relevant to Malaysians who are given more and more responsibilities for their own financial future. Poor choices can have severe long term repercussions on their retirement funds⁶⁸.

68 According to the EPF CEO Datuk Shahril Ridza Ridzuan, merely 20% of contributors who withdrew money from the EPF to invest in unit trust have enjoyed superior returns compared to the EPF. Approximately 40% suffered from poorer returns from their unit trust investments. In fact, Datuk Shahril remarked that "Contributors who opt to invest outside of EPF should have financial literacy" (The Star, 2016, p. 12).

Ultimately, the author hopes this study will be the starting point for research examining the impact of financial statement knowledge on stock portfolio returns. Existing research documents that financial statements usage result in superior portfolio returns (such as Piotroski, 2000) but the literature is silent on the extent to which financial statement knowledge impacts returns. Econometric modeling has demonstrated that basic financial knowledge accounts for approximately 30 to 40% of retirement wealth inequality (Lusardi, Michaud & Michell, 2017), which demonstrates the consequences of low financial knowledge. Hence, research on the subject would reveal just how much financial statement knowledge contributes to wealth maximisation in stock investing and would serve as further justification for the investment in this type of human capital.

Similarly, the impact of financial statement knowledge on the choice and returns of investment-linked insurance policies is another future area of research. Mahdzan and Victorian (2013) found that financial literacy was not a significant determinant of the decision to purchase life insurance policies among Malaysians and expressed concern that individuals lacked knowledge about their policy. For an investment-linked policy, lack of financial knowledge might result in the selection of underperforming funds with lower long-term returns, and this merits further study. Therefore, future research can be on the effects of financial statement knowledge on investment-linked policy decision-making among individuals.

7.6 Conclusion

Examining factors that influence individual investors' financial statements usage is fundamentally important because it concerns the existential purpose of financial statements, which is to communicate financial information primarily to investors, and therefore should be of paramount concern to preparers, regulators and academicians. The usefulness of numerical accounting information, the types of information investors typically rely on and the extent of financial statements usage have been studied in varying degrees. However, what influences individual investors to use financial statements remains unclear.

The hitherto lack of research on the subject is regrettable as our understanding of the forces that motivate investors to use financial statements for investment decision-making is limited. As pointed out at the onset of this thesis, to encourage widespread usage of financial statements, we must understand what factors influence individual investors to use them in the first place. This is especially important in Malaysia which has a First World financial reporting regime but not necessarily individual investors with world class sophistication.

Therefore, the overarching aim of this study is to examine factors that influence Malaysian individual investors' report financial statements usage within certain parameters. It finds that annual report financial statements usage is influenced by a combination of knowledge and attitudinal factors.

Financial statement knowledge is a very important influence on individual investors' annual report financial statements usage. In addition, individual investors need to have

diligence as this variable has been found to have a moderating effect on the relationship between financial statement knowledge and the dependent variable.

However, subjective norm appears to be the most significant driver of annual report financial statements usage among Malaysian individual investors. Apart from that, financial statements usage attitude, perceived behavioural control and investment horizon attitude are positively associated with annual report financial statements usage which also has a negative relationship with trading frequency attitude and investing luck attitude.

Several demographic differences for the variables were examined as discerning these differences will help in the formulation of investor education programmes. Interestingly for a multi-racial country, no significant ethnic differences were noted for annual report financial statements usage, though minor differences were observed for gender, age group, education level, employment sector and investing experience. Similarly, there were demographic differences for the predictor variables.

Financial statements are meant to be used by individual investors but whether they rely on them is another matter altogether, as this study amply shows. Many people are tempted by the prospects of making quick fortunes and speculate in the stock market. This approach is inherently attractive, exciting and does not require tedious financial statements analysis. If they are lucky, individuals may succeed in beating the market on several occasions. However, research shows that speculation is a suboptimal strategy akin to gambling that generally ends in long-term wealth destruction. In contrast, the literature demonstrates that a winning strategy is to construct a diversified portfolio of stocks after careful evaluation on their respective risks and returns. Nonetheless, this

requires considerably more effort and knowledge than mere speculation. It necessitates having a good understanding of a stock's fundamentals including its financial performance and the best sources of such information are the firm's financial statements.

Some may argue that individual investors do not need to read and understand financial statements because they can always rely on the advice of experts such as their stock brokers or financial planners. However by doing so, investors lose control of their investment decisions and are vulnerable to bad advice or misinformation. Knowledge is power and individual investors with sufficient financial statement knowledge are unencumbered in exploring various investment possibilities as they are able to fathom the information in financial statements and can make more astute investment decisions.

While it is unreasonable to expect the average individual investor to develop the skills set of professional investors, attaining adequate financial statement knowledge is not insurmountable. The internet, which is easily accessible to the masses in Malaysia, contains a wealth of resources that can help investors educate themselves. Similarly, many organisations conduct investor education programmes which are sometimes free and open to all for participation. However, investors must be aware that financial statements are important sources of information that can help them make better stock investment decisions and a willingness to use them consistently.

Although financial statements usage alone does not guarantee that we will eventually make a fortune, reliance on them has been proven to lead to optimal stock investment decisions that contribute to long-term wealth maximisation. As this thesis shows, financial statement knowledge, attitudes, the influence of family and friends, and self-

confidence strongly influence individual investors' financial statements usage, which is why investor education programmes should be more holistically designed to achieve desired long-term outcomes.

To end, although people are drawn to the stock market by dreams of avarice, it must be stressed that stock investing is not for everyone. Investors should have not only adequate financial resources and sufficient financial knowledge but also the right temperament to endure wide short-term fluctuations in stock prices, be indifferent to the "noise" in the stock market and the willpower to resist the temptation to trade. If existing and potential investors do not possess these qualities, then it would be wiser for them to consider other investment options.

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