

SUSTAINABILITY REPORTING, DEDICATED AND TRANSIENT  
INSTITUTIONAL OWNERSHIP, AND FINANCIAL PERFORMANCE

By  
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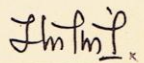
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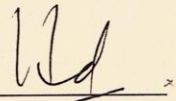
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## ABSTRACT

Previous studies on the association between sustainability reporting and the ownership of institutional investors yield inconsistent results. Thus, this thesis examines if the inconsistencies are due to (1) different types of institutional investors, where different preferences to firms' sustainability engagement are expected to be observed from dedicated and transient institutional investors, and (2) the moderating effect of financial performance, where it is believed that the relationship between sustainability reporting and institutional ownership is only significant when a firm's financial performance is high.

Using Malaysian setting, a total of 285 firms listed on Bursa Malaysia in the year 2010 and 2011 are selected for this study, which utilizes a one-year lagged data for sustainability reporting and contemporaneous data for institutional ownership. Sustainability reporting is measured by the extent and quality of corporate social disclosures in the annual reports, institutional ownership by the percentage of ordinary shares owned by institutional investors and the return of assets is the proxy for financial performance.

The results reveal that sustainability reporting shows positive impact on ownership of dedicated institutions but no impact on the share ownership of transient institutions. Further analysis reveals that sustainability reporting exert positive impact on the ownerships of all three types of institutions defined as dedicated institutions, which are the government-managed pension funds, government-managed unit trust funds and government-managed pilgrimage funds, but no impact on the ownerships of all three types of institutions classified as transient, which are the banks, private-managed mutual funds and insurance companies. The results also reveal that dedicated institutions prefer to invest in firms with good sustainability engagement, but poor financial performance, thus they may gain benefit from shareholder activism. Meanwhile, transient institutions only prefer firms with good financial performance, regardless of their sustainability engagement.

Keywords: sustainability reporting, dedicated institutions, transient institutions

## ABSTRAK

Kajian-kajian yang lepas menghasilkan dapatan yang tidak konsisten mengenai hubungan antara pelaporan kelestarian dan pegangan saham oleh pelabur institusi. Oleh itu, tesis ini bertujuan mengkaji sekiranya perbezaan itu berpunca daripada (1) pelabur institusi yang berlainan jenis, di mana minat terhadap penglibatan kelestarian firma adalah dijangkakan berbeza antara pelabur institusi dedikasi dan transien, dan (2) kesan moderasi oleh prestasi kewangan, di mana, hubungan positif antara pelaporan kelestarian dan pegangan saham pelabur institusi akan berlaku apabila prestasi kewangan firma adalah tinggi.

Berlatarbelakangkan senario di Malaysia, sejumlah 285 firma yang tersenarai di Bursa Malaysia pada tahun 2010 dan 2011 telah dipilih untuk kajian ini, yang menggunakan data satu tahun ke belakang untuk pelaporan kelestarian dan data semasa untuk pegangan saham pelabur institusi. Pelaporan kelestarian diukur menggunakan kuantiti dan kualiti pelaporan tanggungjawab sosial korporat, pegangan saham pelabur institusi menggunakan peratusan saham biasa yang dipegang oleh pelabur, sementara pulangan atas aset menjadi proksi kepada prestasi kewangan.

Dapatan kajian menunjukkan pelaporan kelestarian memberi impak yang positif terhadap pegangan saham oleh pelabur institusi dedikasi, tetapi tiada impak ke atas pegangan saham oleh pelabur institusi transien. Seterusnya, pelaporan kelestarian didapati memberi impak yang positif kepada kesemua tiga institusi yang didefinisikan sebagai dedikasi, iaitu kumpulan wang pencen yang diurus kerajaan, kumpulan wang saham amanah yang diurus kerajaan serta kumpulan wang haji yang diurus kerajaan, tetapi tiada impak ke atas kesemua tiga institusi yang diklasifikasikan sebagai transien, iaitu bank, kumpulan wang saham amanah diuruskan pihak swasta serta syarikat insurans. Dapatan kajian juga menunjukkan pelabur institusi dedikasi lebih berminat untuk melabur dalam firma yang mempunyai penglibatan kelestarian yang baik, tetapi mempunyai prestasi kewangan yang rendah, kerana mereka mungkin berpotensi memperoleh manfaat melalui aktivisme pemilik saham. Sementara itu, pelabur institusi transien didapati hanya berminat melabur dalam firma yang mempunyai prestasi kewangan yang baik, tanpa mengira penglibatan kelestarian firma.

Kata kunci : pelaporan kelestarian, pelabur institusi dedikasi, pelabur institusi transien

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*Hafizah Abd Mutalib, January 2015*

## TABLE OF CONTENTS

PAGE

<b>TITLE PAGE</b> .....	i
<b>CERTIFICATION OF THESIS WORK</b> .....	ii
<b>PERMISSION TO USE</b> .....	iv
<b>ABSTRACT</b> .....	v
<b>ABSTRAK</b> .....	vi
<b>ACKNOWLEDGEMENT</b> .....	vii
<b>TABLE OF CONTENTS</b> .....	viii
<b>LIST OF TABLES</b> .....	xvi
<b>LIST OF FIGURES</b> .....	xvii
<b>LIST OF ABBREVIATIONS</b> .....	xviii
<b>CHAPTER 1 : BACKGROUND OF STUDY</b> .....	1
1.1 Introduction and motivation of the study.....	1
1.2 Problem statement.....	6
1.3 Research questions.....	10
1.4 Research objectives.....	11
1.5 Significance of study.....	11
1.5.1 Theoretical contributions .....	11
1.5.2 Practical contributions .....	13
1.6 Key findings.....	14
1.7 Scope and limitations of study.....	15
1.8 Chapter summary .....	17
1.9 Organization of the study.....	19



<b>CHAPTER 2 : LITERATURE REVIEW .....</b>	<b>20</b>
2.1 Introduction.....	20
2.2 Sustainability.....	20
2.2.1 The development of sustainability reporting research in Malaysia .....	24
2.2.1.1 Sustainability reporting awareness and disclosure in Malaysia .....	25
2.2.1.2 Factors for sustainability reporting in Malaysia.....	31
2.3 Institutional investors.....	39
2.3.1 Malaysian institutional investors and their investment horizons.....	44
2.3.1.1 Pension and provident funds .....	46
2.3.1.2 Unit trust and mutual funds .....	49
2.3.1.3 Pilgrimage funds.....	52
2.3.1.4 Other GLICs .....	55
2.3.1.4.1 Sovereign wealth fund.....	55
2.3.1.4.2 Minister of Finance (Incorporated) (MOF, Inc).....	58
2.3.1.5 Banks .....	59
2.3.1.6 Insurance companies .....	60
2.3.1.7 Other institutions .....	62
2.4 Prior research with regards to sustainability reporting, financial performance and institutional ownership.....	64
2.4.1 Sustainability reporting and institutional investors’ ownership.....	64
2.4.2 Sustainability reporting and financial performance .....	72
2.4.3 Financial performance and institutional investors’ ownership .....	74
2.4.4 Indirect effect of financial performance on the relationship between sustainability reporting and institutional ownership.....	75
2.5 Theories utilized in the current study.....	77

2.5.1 Stakeholder Theory .....	77
2.5.2 Myopic Institutions Theory.....	79
2.6 Chapter summary .....	82
<b>CHAPTER 3 : THEORETICAL FRAMEWORK AND DEVELOPMENT OF HYPOTHESES .....</b>	<b>85</b>
3.1 Introduction.....	85
3.2 Theoretical framework.....	86
3.3 Preliminary studies.....	90
3.3.1 Determining the institutional investors' types .....	90
3.3.2 Determining the sustainability reporting themes and dimensions .....	93
3.4 Development of hypotheses .....	97
3.4.1 Sustainability reporting and institutional ownership .....	97
3.4.2 Sustainability reporting, dedicated and transient institutional investors ...	98
3.4.3 Sustainability reporting and specific types of dedicated institutions.....	100
3.4.3.1 Government-managed pension funds.....	100
3.4.3.2 Government-managed unit trust funds .....	102
3.4.3.3 Government-managed pilgrimage funds .....	102
3.4.4 Sustainability reporting and specific types of transient institutions .....	103
3.4.4.1 Banks .....	104
3.4.4.2 Private-managed mutual funds.....	104
3.4.4.3 Insurance companies .....	106
3.4.5 Moderating effect of financial performance on the relationship between sustainability reporting and institutional ownership.....	107
3.5 Chapter summary .....	109

<b>CHAPTER 4 : RESEARCH DESIGN AND METHODOLOGY .....</b>	<b>110</b>
4.1 Introduction.....	110
4.2 Research design .....	110
4.3 Population and sample .....	111
4.4 Variables definition and measurement.....	114
4.4.1 Independent variable: sustainability reporting.....	114
4.4.2 Dependent variable: institutional investors' ownership.....	118
4.4.3 Control variables / Moderating variable .....	121
4.4.3.1 Financial performance .....	121
4.4.3.2 Firm size .....	122
4.4.3.3 Dividend .....	123
4.4.3.4 Leverage .....	123
4.4.3.5 Risk.....	124
4.4.3.6 Managerial ownership .....	124
4.4.3.7 Shariah-compliant status .....	125
4.4.3.8 Board size .....	126
4.4.3.9 Auditor type.....	126
4.4.3.10 Audit committee size.....	127
4.4.3.11 Board independence .....	128
4.4.3.12 Multiple directorship of the Chairman .....	129
4.4.3.13 Duality .....	129
4.5 Data analysis and interpretation.....	130
4.5.1 Preliminary analysis.....	131
4.5.1.1 Data cleaning .....	131
4.5.1.2 Normality.....	132

4.5.1.3 Multicollinearity .....	132
4.5.1.4 Heteroscedasticity .....	133
4.5.2 Descriptive Statistics.....	134
4.5.3 Correlation analysis .....	134
4.5.4 Hypotheses testing .....	134
4.5.4.1 Regression models relating to Research Question 1 .....	135
4.5.4.2 Regression models relating to Research Question 2 .....	138
4.5.5 Sensitivity analysis.....	141
4.5.5.1 Assessing the robustness of results .....	141
4.5.5.2 Addressing the threats of endogeneity .....	142
4.5.6 Other Analysis – Curvi-linear relationship of Managerial Ownership and Institutional Ownership.....	144
4.6 Chapter summary .....	145
<b>CHAPTER 5 : RESULTS .....</b>	<b>148</b>
5.1 Introduction.....	148
5.2 Preliminary analysis of data.....	149
5.2.1 Data cleaning and screening .....	149
5.2.2 Normality tests and outlier detection .....	151
5.2.3 Results of multicollinearity.....	154
5.2.4 Results of heteroscedasticity.....	155
5.3 Descriptive and correlation statistics .....	156
5.3.1 Population and sample .....	162
5.3.2 Descriptive statistics of variables.....	164
5.3.3 Correlation analysis .....	169

5.4 Tests for hypotheses.....	170
5.4.1 The effect of sustainability reporting on institutional ownership .....	170
5.4.1.1 Sustainability reporting and aggregate institutional ownership .	174
5.4.1.2 Sustainability reporting, dedicated and transient institutional ownership .....	176
5.4.1.3 Sustainability reporting and specific types of dedicated institutional ownership .....	177
5.4.1.3.1 Sustainability reporting and government-managed pension funds .....	178
5.4.1.3.2 Sustainability reporting and government-managed unit trust funds.....	179
5.4.1.3.3 Sustainability reporting and government-managed pilgrimage funds .....	182
5.4.1.4 Sustainability reporting and specific types of transient institutional ownership .....	182
5.4.1.4.1 Sustainability reporting and ownership by banks.....	183
5.4.1.4.2 Sustainability reporting and ownership by private- managed mutual funds .....	184
5.4.1.4.3 Sustainability reporting and insurance companies ...	187
5.4.2 The moderating effect of financial performance on the relationship between sustainability reporting and institutional ownership.....	190
5.4.2.1 The moderating effect of financial performance on the relationship between sustainability reporting and aggregate institutional ownership .....	191

5.4.2.2	The moderating effect of financial performance on the relationship between sustainability reporting and dedicated institutional ownership .....	192
5.4.2.3	The moderating effect of financial performance on the relationship between sustainability reporting and transient institutional ownership .....	196
5.5	Sensitivity analysis.....	202
5.5.1	Assessing the robustness of results with alternative variables.....	202
5.5.2	Addressing the threats of endogeneity with instrumental variables .....	203
5.5.2.1	EXTSR as measurement for sustainability reporting .....	207
5.5.2.2	QUALSR as measurement for sustainability reporting.....	210
5.6	Other Analysis - Curvi-linear relationship of Managerial Ownership and Institutional Ownership.....	217
5.7	Chapter summary .....	220
<b>CHAPTER 6 : DISCUSSIONS AND CONCLUSIONS.....</b>		<b>222</b>
6.1	Introduction.....	222
6.2	Discussions of the study.....	222
6.2.1	Discussions on first research question .....	222
6.2.1.1	Sustainability reporting and aggregate institutional ownership .	223
6.2.1.2	Sustainability reporting, dedicated and transient institutional ownership .....	224
6.2.1.3	Sustainability reporting and specific dedicated institutions .....	226
6.2.1.4	Sustainability reporting and specific transient institutions.....	230
6.2.2	Discussions on second research question .....	233

6.2.3 Results of control variables.....	236
6.3 Implications of study.....	244
6.3.1 Theoretical implications.....	245
6.3.2 Practical implications.....	247
6.4 Conclusions.....	248
6.5 Limitations of the study and suggestions for future research .....	251
6.6 Summary of the study .....	254
<b>REFERENCES.....</b>	<b>256</b>
<b>APPENDIX A: Data collection instrument for sustainability reporting data.....</b>	<b>292</b>
<b>APPENDIX B: Summary of measurements of variables .....</b>	<b>296</b>
<b>APPENDIX C: Summary of hypotheses and results.....</b>	<b>301</b>
<b>APPENDIX D: List of firms in sample .....</b>	<b>302</b>
<b>APPENDIX E: List of institutional investors.....</b>	<b>307</b>

## LIST OF TABLES

Table 3-1: Preliminary study results – institutional investors’ types and shareholdings.....	92
Table 3-2: Preliminary study results – sustainability reporting themes and dimensions.....	96
Table 4-1: Population and sample.....	113
Table 5-1: Normality test statistics of the variables.....	157
Table 5-2: Test for multicollinearity - Pearson’s correlation.....	159
Table 5-3: Test for multicollinearity - VIF calculations.....	161
Table 5-4: Population and final sample .....	163
Table 5-5: T-test results for comparing means of final and deleted samples .....	164
Table 5-6: Descriptive statistics.....	167
Table 5-7: Correlation analysis for all variables.....	172
Table 5-8: Regression results for aggregate IO models.....	175
Table 5-9: Regression results for dedicated and transient IO models .....	180
Table 5-10: Regression results for specific dedicated IO models.....	185
Table 5-11: Regression results for specific transient IO models .....	188
Table 5-12: Moderation effect results for aggregate IO models.....	193
Table 5-13: Moderation effect results for dedicated IO models .....	197
Table 5-14 : Moderation effect results for transient IO models.....	200
Table 5-15: Robustness test with DYIELD as financial performance.....	205
Table 5-16: Testing for endogeneity – SR measured by EXTSR.....	211
Table 5-17: Testing for endogeneity – SR measured by QUALSR.....	215
Table 5-18: Curvi-linear relationship of MANOWN and INSTOWN .....	219



## LIST OF FIGURES

Figure 1: Research Theoretical Framework.....	86
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## LIST OF ABBREVIATIONS

AUDITOR	: Auditor Type
ACSZ	: Audit Committee Size
BINDEP	: Board Independence
BSIZE	: Board Size
DIV	: Dividend
DUALITY	: Duality
EXTSR	: Extent of Reporting
FPERF	: Financial Performance
FSIZE	: Firm Size
GLC	: Government-Linked Companies
GLIC	: Government-Linked Investment Companies
IO	: Institutional Ownership
IO_BANK	: Banks
IO_DEDI	: Dedicated Institutional Ownership
IO_GPF	: Government-managed Pension Funds
IO_GPL	: Government-managed Pilgrimage Funds
IO_GUT	: Government-managed Unit Trust Funds
IO_INS	: Insurance Companies
IO_PRMF	: Private-managed Unit Trust Funds
IO_TRANS	: Transient Institutional Ownership
LEV	: Leverage
MANOWN	: Managerial Ownership
MC	: Market Capitalization

MULTI_CH	: Multiple Directorship of the Chairman
OLS	: Ordinary Least Squares
QUALSR	: Quality of Reporting
RISK	: Risk
ROA	: Return on Assets
SHARIAH	: Shariah-compliant Status
SR	: Sustainability Reporting

## **CHAPTER 1 : BACKGROUND OF STUDY**

### **1.1 Introduction and motivation of the study**

This thesis examines the relationship between sustainability reporting and institutional ownership, which is divided into two parts. The first part investigates the impact of sustainability reporting on the dedicated and transient institutional ownership; while the second part explores the moderating impact of financial performance on the relationship between sustainability reporting and institutional ownership.

Issues regarding sustainability and sustainable development have become crucial areas of concern in the field of business and economics. Sustainability can be described in many ways, and in its simplest form, it means, “meeting the needs of our present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987). The sustainability concept stresses that companies and other organizations create value in multiple economic, social and environmental dimensions, which is also known as the ‘triple bottom line’ or TBL concept (Elkington, 2006). Hence, TBL concept emphasizes that businesses should not only be conducted for the purpose of achieving its economic objectives, or to fulfill the shareholders’ expectations, but to also give attention to environmental and social concerns, which have a huge impact on the diverse stakeholders surrounding the businesses’ existence, such as the employees, the government and the society.

Due to the importance of sustainability development, studies concerning sustainability have gained prominence in the research field. Among the areas of research concerning sustainability issues in previous studies, are the studies on the relationship between sustainability and institutional ownership. In other words, prior research work examine if sustainability engagement by firms managed to attract investment from institutional investors.

Institutional investors, who are normally identified as insurance companies, superannuation and pension funds, investment trusts, financial institutions and investment companies (Hsu & Koh, 2005; Koh, 2003), are the type of investors which usually invest in large amount or pool of financial resources. The scenario where institutional investors play a vital role as major shareholders can be seen not only in developed countries, but also in developing countries. For instance, in the year 2007, almost 60% of shareholdings in the United States (US) and Canadian listed firms belonged to institutional investors, while in the United Kingdom (UK), institutional investors incorporate 37.9% of the corporate shareholdings (Aggarwal, Erel, Ferreira, & Matos, 2011). Meanwhile, in developing countries such as Malaysia, the three largest types of institutional investors, namely the pension fund, life insurance and mutual funds, held total assets of USD114 billion in 2004, equivalent to 96.4% of Malaysian Gross Domestic Product (GDP) (Ghosh, 2006). In addition, according to Towers Watson, one of the leading consulting professionals, the largest Malaysian pension fund, namely the Kumpulan Wang Simpanan Pekerja or Employees Provident Fund Board (KWSP/EPF), holds total assets of approximately USD182 billion at the end of 2013 (Towers Watson, 2014). Furthermore, among the 10 largest companies by market capitalization listed on Bursa Malaysia, it was found that

51.03% of ownership belongs to institutional investors (Saleh, Zulkifli, & Muhamad, 2010), thus signaling the significant role played by institutional investors in shaping the ownership structure of the firms in which they invest.

As institutional investors are involved in a large amount of funds, it is interesting to investigate if their investment preferences are directed to potential firms that engage in sustainability commitments. Furthermore, investors' awareness of the concept of Socially Responsible Investment (SRI) triggers the question if institutional investors are attracted to this notion. Ethical investment or SRI, is an investment strategy that integrates social, environmental and corporate governance criteria into investment decisions (Eurosif, 2010; Leahy, 2008; Renneboog, Ter Horst, & Zhang, 2008; Sparkes, 2002). Previous studies justify that firms that engage in sustainability perform better compared to firms that do not (Leahy, 2008; McPeak & Tooley, 2008); therefore, investors who perceive that investing in firms which address the social, environmental and governance criteria may lead to long-term benefits, might be attracted to this concept (McPeak & Tooley, 2008). Furthermore, firms with low sustainability commitments may face high risks as a result of lawsuits and fines which might limit their strategic options (McGuire, Sundgren, & Schneeweis, 1988). Hence, such firms may not be suitable candidate for investment possibilities for institutional investors.

The growing interest in SRI may be seen mostly in developed countries; for instance, in the US, total SRI assets increased 258% between 1995 to 2005 (McPeak & Tooley, 2008), while in Europe, the total SRI assets increased from €2.7 trillion to €5 trillion, as of 31 December 2009, which denotes an 87% growth compared to the previous two

years (Eurosif, 2010). Moreover, at the end of the year 2010, the European SRI market value was estimated at US\$7 trillion, and this figure is expected to increase to US\$26.5 trillion by 2015 (Bernama, 2010). The exponential increase in SRI funds indicates that institutions are aware of their responsibilities towards investing in firms that fulfill sustainability concerns, such as by avoiding firms that engage in undesirable business and investing in firms that engage in desirable areas (Leahy, 2008). Furthermore, in Malaysia, representing the developing nations, the emphasis for investing in socially responsible firms may be seen by the establishment of the Malaysian Code for Institutional Investors (Minority Shareholders Watchdog Group & Securities Commission Malaysia, 2014), where one of the principles is for the institutional investors to consider sustainability engagement by the potential firms in their investment decision making process (Minority Shareholders Watchdog Group & Securities Commission Malaysia, 2014).

The discussions above denote that certain aspects cannot be taken lightly. Firstly, there is a growing trend of institutional investors' holdings, whether in developed countries (Aggarwal, et al., 2011) or developing countries (Ghosh, 2006; Saleh, et al., 2010; Towers Watson, 2014), therefore, firms should consider the factors which may be able to attract and stimulate institutional investors to invest. Secondly, there is a growing interest in SRI globally (Bernama, 2010; Eurosif, 2010; McPeak & Tooley, 2008), where investors do not only consider financial performance, but also integrate social and environmental performance when making investment decisions. Furthermore, the emphasis to invest in socially responsible firms may also be observed in Malaysia, by the establishment of Malaysian Code for Institutional Investors (Minority Shareholders Watchdog Group & Securities Commission

Malaysia, 2014). Thus, the important question addressed in this thesis is, “Can sustainability reporting attract institutional investors?”.

This study focuses on the scenario in Malaysia, representing the developing countries. In Malaysia, the market for institutional investors is highly controlled by the Malaysian Government through several institutions, referred to as Government-Linked Investment Companies (GLICs). The GLICs consist of three pension funds, namely the KWSP or EPF, Kumpulan Wang Amanah Pencen or Retirement Fund Incorporated (KWAP) and Lembaga Tabung Angkatan Tentera or Armed Forces Fund Board (LTAT); a unit trust fund, namely the Permodalan Nasional Berhad (PNB); a pilgrimage fund, known as Lembaga Tabung Haji (LTH); a sovereign wealth fund, namely the Khazanah Nasional; and an investment arm, which is the Menteri Kewangan Diperbadankan (MKD) or Minister of Finance Incorporated, MOF (Inc) (Putrajaya Committee on GLC High Performance, 2014).

Previous studies conclude that the three pension funds, PNB, LTH and another government-related institution, the National Social Security Organization of Malaysia (SOCSO), collectively have 70% of institutional shareholdings in firms listed on Bursa Malaysia Main Board (Abdul Wahab, How, & Verhoeven, 2008), thus signifying the control possessed by GLICs in the market of institutional investors. Besides these government-related institutions, institutional shareholdings in Malaysia also consist of private institutions, mainly involved in insurance and banking and finance sectors. Hence, with the various types of institutions existing in the ownership structure of Malaysian listed firms, it is the intention of this study to see the impact of sustainability reporting by the different types of institutions in Malaysia.



In addition, previous studies found unit trust and mutual funds as having transient behavior (Cox, Brammer, & Millington, 2004; Cox & Wicks, 2011). However, in Malaysia, a unique situation can be seen where unit trust and mutual funds are partitioned between those of government-managed and private-managed, where different impact of sustainability reporting is believed to be observed on the government-managed and private-managed funds. Furthermore, limited evidence have been found on the preference of pilgrimage funds on sustainability engagement by potential firms.

The rest of this chapter is organized as follows: the problem statement in section 1.2, and research questions and objectives in sections 1.3 and 1.4. This is followed by the significance of study in section 1.5, the key findings in section 1.6, and the scope and limitations of study in section 1.7. Finally, the summary of study is highlighted in section 1.8 and the organization of the study is outlined in section 1.9.

As sustainability is also known as corporate social responsibility (CSR), corporate sustainability (CS), corporate social performance (CSP), corporate responsibility and business ethics (Mohammed, Alwi, & Muhammad Jamil, 2009), these terms may be used interchangeably throughout this thesis.

## **1.2 Problem statement**

The growing interest in SRI has taken its place globally. In developed countries such as the US, total SRI assets increased 258% between 1995 to 2005 (McPeak & Tooley,

2008). The situation in Europe is also encouraging, as the total SRI assets have increased from €2.7 trillion in the year 2007, to €5 trillion, as of 31 December 2009, which denotes about 87% growth (Eurosif, 2010). The escalating growth of SRI assets shows that investors are screening for socially responsible portfolios as these portfolios are linked to better performance (McPeak & Tooley, 2008; Orlitzky, Schmidt, & Rynes, 2003; Saleh, Zulkifli, & Muhamad, 2011; Van de Velde, Vermeir, & Corten, 2005). In Malaysia, representing the developing nations, in the Malaysian Code for Institutional Investors, institutional owners are required to include sustainability engagement of the potential portfolios as their basis in making investment decision (Minority Shareholders Watchdog Group & Securities Commission Malaysia, 2014). Based on these scenarios, this thesis tries to examine if institutional owners do prefer to invest in firms that engage to sustainability activities.

In previous studies, a significant positive relationship was found between sustainability reporting and institutional ownership, whether in developed countries (Graves & Waddock, 1994; Mahoney & Roberts, 2007; Petersen & Vredenburg, 2009), or developing countries (Hoq, Saleh, Zubayer, & Mahmud, 2010; Saleh, et al., 2010), thus indicating that institutional investors are attracted to firms with good commitments to sustainability.

On the other hand, some studies conclude insignificant association of sustainability and institutional ownership. In developed countries, institutional investors perceive that financial performance is more important, and consider sustainability information in making investment decision only if the company has seriously poor social responsibility records, which may have adverse impact on its reputation (Teoh &

Shiu, 1990). Furthermore, in developing countries, it has been found that sustainability reporting does not influence the level of institutional ownership, and despite firms' low sustainability reporting, institutional investors have high shareholdings in those firms (Muniandy & Barnes, 2010). Moreover, institutional investors tend to invest in large firms, which signifies that they are more interested in "big firms" rather than "good firms" (Muniandy & Barnes, 2010).

The inconsistencies in findings may also be observed in the separate dimensions of sustainability. For instance, only the workplace and marketplace dimensions are found to exert positive impact on institutional ownership (Hoq, et al., 2010; Muniandy & Barnes, 2010; Saleh, et al., 2010), while environment and community dimensions are seen as cost incurring activities which require significant financing (Muniandy & Barnes, 2010; Saleh, et al., 2010), with no direct benefits being obtained from investing in firms that engage in such dimensions of sustainability (Saleh, et al., 2010), hence, they are not able to attract investment from institutional investors.

From the above findings, it is evident that the association between sustainability reporting and institutional ownership has been inconclusive in previous studies. One of the possible explanations is due to the treatment of institutional investors as a monolithic group. Previous studies justify that the investment horizons of institutional investors may result in different preferences for firms' sustainability engagement (Cox, et al., 2004; Cox & Wicks, 2011; Hayashi, 2003; Johnson & Greening, 1999). Institutions with long-term investment horizons, or also known as dedicated institutions, such as pension funds, react positively to firms' sustainability records (Cox, et al., 2004; Cox & Wicks, 2011). This notion is based on the benefits from

sustainability engagement that may only be realized in the long-term; thus, the dedicated institutional investors may have the time to wait for the benefits to be realized. On the other hand, short-term or transient institutions, such as banks, mutual funds and insurance companies, focus on short-term profit, thus react contrarily to firms' sustainability commitments when making investment decisions (Cox, et al., 2004; Cox & Wicks, 2011). Hence, this thesis extends the existing literature by introducing a type of institutional investor, namely the pilgrimage funds, so that the effect of firms' sustainability engagement on the ownership of this institution may be established. Furthermore, in previous studies, unit trust and mutual funds have been identified as having transient behavior (Cox, et al., 2004; Cox & Wicks, 2011). However, this thesis categorize the unit trust and mutual funds into those of government-managed and private-managed, where it is believed that different impact of sustainability reporting may be observed on the ownership of these institutions.

Secondly, the inconsistencies found in the previous studies might also due to the influence of a third variable, which may exist in the form of a moderation effect. A moderation effect is an effect that occurs when a third variable changes the relationship between two existing variables (Hair, Black, Babin, & Anderson, 2010).

Past research confirms that sustainability commitments may improve the firms' financial performance (McPeak & Tooley, 2008; Orlitzky, et al., 2003; Saleh, et al., 2011; Van de Velde, et al., 2005). A sound financial performance is always a concern for investor, whether by ethical or conventional investors (McLachlan & Gardner, 2004; Michelson, Wailes, Laan, & Frost, 2004), suggesting that even ethical investors prioritize financial performance when considering investing in a portfolio and

financial performance is always their main concern (Matterson, 2000), and this is justified by positive association between firms' financial performance and investors' decision making in previous studies (Bushee & Goodman, 2007; Cox, et al., 2004; Del Guercio, 1996; Graves & Waddock, 1994; Matterson, 2000; McLachlan & Gardner, 2004). Their preference to financial performance leads to prediction where the effect of sustainability reporting on aggregate, dedicated and transient institutional ownership may be moderated by financial performance. Institutional investors might perceive that firms that engage to sustainability commitments may create value in long-run, however, financial performance is always an important matter, thus institutional investors will prefer to invest in firms that have good sustainability commitment, but at the same time possess high financial performance.

### **1.3 Research questions**

The following research questions are posed for this study:

- 1.3.1 Is the impact of sustainability reporting on institutional ownership different between dedicated and transient institutional ownership?
- 1.3.2 Does financial performance exert moderating impact on the relationship between sustainability reporting and aggregate, dedicated and transient institutional ownership?

## **1.4 Research objectives**

This study intends to achieve the following objectives:

1.4.1 To examine if the impact of sustainability reporting on institutional ownership differs between dedicated and transient institutional ownership.

1.4.2 To examine if financial performance exerts moderating impact on the relationship between sustainability reporting and aggregate, dedicated and transient institutional ownership.

## **1.5 Significance of study**

This study highlights a number of unique theoretical and practical contributions as listed below.

### **1.5.1 Theoretical contributions**

The relationship between sustainability reporting and institutional ownership in previous studies is inconsistent, where positive and significant relationship has been found between the factors (Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Saleh, et al., 2010), or no significant relationship has been found between the two (Muniandy & Barnes, 2010; Teoh & Shiu, 1990). Therefore, this

thesis fills the gap by segregating institutional investors into two categories, namely the dedicated institutions or the institutions with long-term investment horizon, and transient institutions or the institutions with short-term investment horizons. Although previous studies have justified the effect of sustainability commitments on non-monolithic group of institutions according to their investment horizons (Cox, et al., 2004; Cox & Wicks, 2011), the focus was on the developed market. This study contributes to the existing literature by providing the results from a developing market which is highly controlled by the government that put sustainability agenda as a priority.

Secondly, in previous studies, institutions, such as pension funds, are justified as dedicated institutions with long-term investment horizon; while institutions such as banks, unit trust and mutual funds and insurance companies are classified as having transient behavior or short-term investment horizons. The investment behavior of these institutions determines their preference for firms' sustainability engagement while making investment decisions (Cox, et al., 2004; Cox & Wicks, 2011; Hayashi, 2003; Johnson & Greening, 1999). The current study provides a unique contribution by partitioning the unit trust and mutual funds into those which are government-managed and private-managed, where different effect of sustainability reporting are expected to be observed on the ownership of these types of institutions. Furthermore, this study also highlights the effect of sustainability reporting on pilgrimage funds, where up to date, limited evidence has been found on the fund's behavior with regards to sustainability when making investment decisions.

Thirdly, up to now, except for one study (Wahba, 2008), which focused on the Egyptian market, limited evidence has been found on the moderating impact of financial performance on the relationship between sustainability reporting and institutional ownership. This study, therefore, fills the gap by Wahba (2008), whose findings are limited to environmental reporting. Furthermore, this study also provides a unique contribution where the moderating effect is tested on different types of institutional investors, compared to Wahba (2008), which used a monolithic interpretation for institutional investors.

### **1.5.2 Practical contributions**

Firstly, the sustainability reporting data for this study is taken from the annual reports of the years 2010 and 2011, which marks a period of four to five years since sustainability reporting was made a requirement in the year 2007. Previous Malaysian studies on sustainability reporting and institutional ownership concentrated on the time frame where sustainability reporting disclosure was only voluntary, and involving firms with high market capitalization since these firms are expected to have sufficient amount of sustainability disclosure. As such, the result of this study is more generalizable as it covers the Malaysian firms' population as a whole. Furthermore, by analyzing the 2010 - 2011 annual reports, the findings from this study can conclude on the most current state of sustainability disclosure among Malaysian firms.



Secondly, the Malaysian Government has put high commitments on sustainability engagements, and this situation may be observed in three of the nine challenges outlined in Vision 2020, i.e., to establish a moral and ethical community; to nurture a fully caring culture; and to ensure an economically just society. All these are related to achieving sustainability. Furthermore, the strong aspiration for sustainability may also be noticed in the establishment of the Silver Book, with the objective of promoting sustainability awareness and to guide sustainability activities and their implementation among Malaysian Government-Linked Companies (GLCs) (Putrajaya Committee on GLC High Performance, 2006). Apart from that, in the 2007 Malaysian Budget, the government announced that investments made by two of the prominent government-related institutions, namely the EPF and KWAP, should be in firms with good sustainability performance (Ministry of Finance, 2006). Additionally, one of the principles of the Malaysian Code for Institutional Investors, requires such investors to consider sustainability engagement by the potential firms in their investment decision making process (Minority Shareholders Watchdog Group & Securities Commission Malaysia, 2014). Thus, the findings from this study may provide the insights on whether the government aspiration to achieve a sustainable nation through investment preference in ethical and responsible firms, is on track.

## **1.6 Key findings**

First, this thesis reveals that the preference for sustainability reporting in making investment decisions among institutional investors is different between dedicated and transient institutions. Although institutional investors aggregately show positive

preference for firms' sustainability engagement, when the institutions are partitioned into those with long-term investment horizons, or the dedicated institutions, and those with short-term investment horizons, or the transient institutions, the results reveal that sustainability reporting exerts positive and significant association on the former, but exerts no association on the latter. Further examination suggests that sustainability reporting also exerts positive and significant impact on specific dedicated institutional investors, namely the government-managed pension funds, the government-managed unit trust funds and the government-managed pilgrimage fund; however, no significant impact is found on the specific transient institutions, namely the banks, private-managed mutual funds and insurance companies.

Second, this thesis reveals that in making investment decisions, aggregate and dedicated institutional investors prefer firms with high engagement to sustainability, and at the same time, having low financial performance. For transient institutions, no significant moderating impact of financial performance on the association between sustainability reporting and institutional ownership is found.

### **1.7 Scope and limitations of study**

The scope of this study involves the annual reports of firms listed on Bursa Malaysia in 2010 – 2011. Sustainability reporting data captured is based on the CSR disclosure of each firm in their respective annual reports or stand-alone sustainability reports. Thus, sustainability reporting and information disclosed in other media, besides the

annual reports and sustainability reports, such as firms' web sites, newspapers and magazine sections and articles, are not included.

With regards to the institutional ownership, this study considers all institutional investors in the Malaysian market. However, when separation is made between dedicated and transient institutions, only government-managed pension funds, government-managed unit trust funds and government-managed pilgrimage funds, which are grouped as dedicated institutions; and banks, private-managed mutual funds and insurance companies, which are classified as transient institutions, are selected for the analysis. Other institutions with insignificant amount of ownership, such as private-managed pension funds, cooperatives, foundations and foreign and state government institutions have not been considered to be included under the definition of dedicated or transient institutional investors.

The aim of this study is to examine the impact of sustainability reporting and institutional ownership, and to examine the moderating effect of financial performance on the association between sustainability reporting and institutional ownership. The study utilizes a one year lag data for sustainability reporting and financial performance and a one year contemporaneous data for institutional ownership, thus, provide another limitation where only one year effect is captured in this study.

## **1.8 Chapter summary**

The important role played by institutional investors in shaping firms' ownership structure, may be visualized in both developed and developing countries. With large amount of resources, institutional investors are able to acquire shares in the potential firms. With the development of the SRI concept, institutional investors may not only consider firms' financial performance in making investment decision, but integrate firms' social and environmental performance, as well. Therefore, the main issue of this study is to see if firms' sustainability reporting, which discloses the social and environmental bottom lines, attracts investments from institutions, particularly in the developing market.

Previous studies on the association between sustainability reporting and institutional ownership, have been inconsistent. Two reasons have been identified which may explain the inconsistencies. Firstly, previous research treated institutional investors as a monolithic group. Therefore, this thesis further investigates if different effect is observed when institutional investors are categorized according to their different investment horizons. Secondly, the inconsistencies might be due to the interaction of a third variable in the form of moderation effect. As previous studies have justified the relationship between sustainability, financial performance and institutional investors, this thesis investigates if financial performance exerts a moderating effect on the association between sustainability reporting and aggregate, dedicated and transient institutional ownership.

The key findings suggest that dedicated and transient institutional investors have different preference for sustainability reporting when making investment decisions. Furthermore, the key findings also suggest that there is a moderation effect of financial performance on the relationship between sustainability reporting and aggregate institutional ownership and dedicated institutional ownership, although the magnitude of the moderation is found to be negative. On the contrary, no significant moderation result is found on the transient institutions models.

Theoretically, this study contributes to the existing literature by focusing on a developing nation, where the market of institutional investors is highly controlled by the government. Additionally, this thesis examines the impact of sustainability reporting on government-managed unit trust and pilgrimage funds, where up to now, limited evidence has been found to conclude such association. Furthermore, the moderating effect of financial performance analyzed in this study focuses on different investment horizons of institutions, compared to previous studies, which have analyzed institutions as a monolithic group. For the practical contribution, this study uses the more current and available data from the year where sustainability reporting was made a requirement. Furthermore, the Malaysian Government has put high commitments to sustainability engagement, such as by requiring two of the government-controlled institutions to invest in firms with good sustainability engagement (Ministry of Finance, 2006). The high commitments may also be observed in the Malaysian Code for Institutional Investors (Minority Shareholders Watchdog Group & Securities Commission Malaysia, 2014) which requires those investors to incorporate sustainability performance of the potential portfolios in making investment decision. As such, the findings from this study provide the insights

as to whether the high commitments by the Malaysian Government to sustainability engagement, are on track.

The scope of the study covers the Malaysian listed firms in the year 2010 – 2011, where the sustainability reporting is limited to the disclosure in 2010 annual reports and stand-alone sustainability reports. With regards to the institutional ownership, only the largest institutions with significant amount of holdings are considered as dedicated or transient institutions in this study.

## **1.9 Organization of the study**

This thesis is divided into six chapters. In Chapter 1, the introduction and motivation of study, the justification of study, the significance of study and the key findings are elaborated. Chapter 2 deals with the review of prior related literature on theories and empirical findings involving sustainability reporting and institutional ownership. The thesis continues with Chapter 3 which explains the research theoretical framework, followed by theoretical and empirical justifications to support the hypotheses development, and the preliminary studies which are related to the main objective. Chapter 4 outlines the research design and methodology, which includes the variables measurements and data analysis techniques. Chapter 5 presents the results from the descriptive, bivariate and regression analyses, and finally in Chapter 6, the summaries of results and discussions, important conclusions, implications and limitations are outlined.

## CHAPTER 2 : LITERATURE REVIEW

### 2.1 Introduction

The purpose of this chapter is to underline the previous research that has been done in relation to sustainability reporting and institutional ownership. The discussion starts with the definition of sustainability in section 2.2, where critical analysis is done on the notion of sustainability and other related terms which describe sustainability. This is followed by the development of sustainability reporting research in Malaysia, representing the developing market.

Section 2.3 focuses on the interpretations of institutional investors and the significant role played by them, followed by the explanation on the various types of main institutional investors and their investment horizons. In addition, the discussions concentrate on prior researches related to sustainability reporting, financial performance and institutional ownership in section 2.4, and section 2.5 considers the theories applied in this study. Section 2.6 contains the chapter summary.

### 2.2 Sustainability

A classic definition for sustainability is provided by the World Commission on Environment and Development (1987), which states that “*Sustainable development is development that meets the needs of the present without compromising the ability of*

*future generations to meet their own needs*". The principle of sustainability is to ensure that our actions today do not limit the range of economic, social and environmental options open to future generations (Elkington, 1997).

The emphasis on sustainability or sustainable development starts to grow when people begin to realize the negative impact resulting from economic activities which may jeopardize the future generations. For instance, massive disasters may occur, such as landslides, global warming and breakdown of climate and ecosystem; and social issues involving humans, such as child labor, bribery, product related issues such as low quality product, and employment issues such as discriminations in workplace, and these are among the scenarios which result from poor engagement with sustainability. These cases, such as the accidental chemical release in Bhopal, India in 1984, which killed and injured thousands of people, Exxon Valdez oil spill in Alaska in 1989, followed by the BP oil spill in 2010, which affected the marine and wildlife habitats, and Malaysian cases, such as the Highland Tower tragedy in 1989, are evidences of the impact brought on by human activities. Due to the negative impacts on the environment and the people, there is a need for everyone on the planet, particularly the corporate bodies, to play their part in achieving sustainability for the next generation. Thus, firms and corporations can be the catalyst to promote sustainability, as they are equipped with resources, the technology and the global reach, all of which can achieve sustainability (Starkey & Welford, 2001).

From the notion of sustainability, emerged other related terms, where among the most popular terms are TBL and CSR. The TBL concept expresses the idea that business firms or other organizations create value in multiple dimensions, i.e., in economic,



social and environmental dimensions (Elkington, 2006), while CSR refers to the voluntary actions taken by a company to address economic, social and environmental impacts of its business operations, and the concerns of its principal stakeholders (Christensen, Peirce, Hartman, Hoffman, & Carrier, 2007). Additionally, besides the three main components, the concern for sustainability addresses legal aspects as proposed in The Pyramid of CSR (Carroll, 1991), where firms should firstly take into consideration the economic and legal responsibilities, before engaging in ethical and philanthropic activities. In efforts to pursue economic responsibilities, firms should also comply with the ground rules and regulations of the federal, state or local governments, as responsible firms are those which abide by the rules and regulations. Furthermore, without a sound economic base, and without fulfilling the legal expectations, firms may not be able to serve the public with ethical and philanthropic responsibilities.

Besides TBL and CSR, sustainability may also be referred to by various other terms, such as social responsiveness, social performance, public policy, CSP, business ethics or stakeholder management (Carroll, 1991; Mohammed, et al., 2009). The various terms also lead to various concepts, where sustainability is also seen as a concern to respond to the demands of the stakeholders, as a tool to preserve and improve the firm's reputation and to address the pressure from investors; and also as the internal driver to do the right thing, to retain customers and to motivate employees (Whitehouse, 2006). Despite the various terms and concepts to describe sustainability, the ultimate focus is the same, i.e., to preserve the current world condition for the benefit of future generations.

As the concern to achieve sustainability mainly falls on the shoulders of firms and corporations, this issue cannot be separated from the area of accounting. From the perspective of accounting, sustainability reporting, which is also known as TBL or CSR reporting, generally refers to a reporting framework that highlights three important areas, i.e., the economic, environmental and social performance of an organization, in addition to its financial performance (Choudhuri & Chakraborty, 2009).

One of the prominent organizations in the sustainability field, the Global Reporting Initiative (GRI), defines sustainability reporting as the practice of measuring, disclosing, and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development (Global Reporting Initiatives, 2011). To put it simply, GRI regards sustainability reporting as a broad term which is synonymous with other reports used to describe the economic, environmental and social impact, consistent with TBL and CSR reporting (Global Reporting Initiatives, 2011). Another sustainability leading organization, the Association of Chartered Certified Accountants (ACCA), provides similar definition of sustainability reporting, i.e., the reporting of the economic, environmental and social impact of organizational performance (ACCA, 2005). From these definitions, it may be concluded that sustainability reporting denotes the reporting of the economic, environmental and social performance of an organization, which is similar to other related reports by any other name. As a medium of communication between organizations and stakeholders, sustainability reporting provides information on the sustainability commitments undertaken by firms, which makes the onus of producing

sustainability reporting, much as financial reporting, the responsibility of the corporate boards (Elkington, 2006).

In the Malaysian context, sustainability reporting is commonly referred to as CSR reporting. Bursa Malaysia (2008b) defines CSR as the firms' "*commitment to operate in an economically, socially and environmentally sustainable manner whilst balancing the interest of diverse stakeholders*". Sustainability or CSR reporting must be disclosed in annual reports of Malaysian listed firms starting from the year 2007 (Ministry of Finance, 2006), where the reporting or disclosure should be made on four focal areas, namely the environment, the workplace, the marketplace and the community (Bursa Malaysia, 2006). These focal areas are consistent to the sustainability performances defined by GRI and ACCA (economic, environment and community), where the marketplace commitment represents the economic performance, while the workplace and community commitments represent the social performance. Thus, from the various explanations above, sustainability may be defined as the commitments undertaken by the corporate bodies in serving the rights of the stakeholders, which covers the non-financial aspects, such as the environmental and social commitments, with the intention to preserve a sustainable future.

### **2.2.1 The development of sustainability reporting research in Malaysia**

The advancement of studies related to sustainability reporting in Malaysia is encouraging. In the sub-sections below, the discussion on Malaysian studies in sustainability area is divided into two parts. The first part entails the studies on

sustainability reporting awareness and disclosure, while the second part puts forth the details on the studies related to the motivating factors which encourage sustainability engagement.

### **2.2.1.1 Sustainability reporting awareness and disclosure in Malaysia**

The awareness on sustainability in Malaysia should not be taken lightly. For instance, the emphasis on sustainability may be observed in a number of Malaysian legislations. Among others, the Environmental Quality Act (1974), which relates to the prevention, abatement and control of pollution of the environment; the Anti-corruption Act (1997), which stresses on the prevention of corruption; and the Human Rights Commission of Malaysia Act (1999), whose objective is to protect and promote human rights. Besides the provisions stipulated in the legislations, the commitment to sustainability may also be seen in the Malaysian Federal Government's aspirations, such as the Vision 2020, where among the nine challenges outlined in this Vision, i.e., to establish a moral and ethical community, to establish a fully caring culture and to ensure an economically just society, are geared towards achieving sustainability. Furthermore, the emphasis on sustainability may also be observed in various awards with the objective of promoting sustainability engagement especially among corporate players, such as the Prime Minister's CSR Award, ACCA Malaysia Environmental and Social Reporting Awards (MESRA) and StarBiz-ICR Malaysia Corporate Responsibility Awards. In addition, the establishment of Non-Governmental Organizations (NGOs), such as WWF Malaysia, Consumers' Association of Penang, Malaysian Trade Unions' Congress (MTUC), Federation of

Malaysian Consumers' Association and Malaysian Nature Society, are among the initiatives to encourage sustainability among Malaysians.

With regards to disclosure, in Malaysia, sustainability reporting disclosure is a requirement to be included in annual reports starting from the year 2007 (Ministry of Finance, 2006), and this requirement has been gazetted in Bursa Malaysia Listing Requirements under Appendix 9C, Para 29. As a guide for firms to report the sustainability commitments undertaken, Bursa Malaysia has launched the CSR Framework for Malaysian Public Listed Companies (PLCs), which requires firms to disclose their sustainability activities based on four focal areas, namely the environment, workplace, marketplace and community.

Prior and subsequent to the requirement for sustainability reporting, many studies have been done in relation to this issue. The earliest area of study in sustainability research deals with the level of awareness in sustainability commitment and reporting among Malaysian firms (Abdul Rashid & Ibrahim, 2002; Amran & Siti-Nabiha, 2009; Haron, Yahya, Manasseh, & Ismail, 2006; Nik Ahmad, Sulaiman, & Siswontoro, 2003; Ramasamy & Ting, 2004; Teoh & Thong, 1984; Thompson & Zakaria, 2004; Zulkifli & Amran, 2006). In this area of study, researchers try to understand the perceptions and awareness of firms towards the practice of sustainability commitments and reporting and the nature of their reporting.

The awareness and reporting of sustainability commitments appear earlier in the developed western countries compared to developing Asian countries. For example, in the 1980s, developed countries such as the UK, experienced a four-fold increase in

sustainability reporting (Gray, Kouhy, & Lavers, 1995), while in developing countries such as Malaysia, the 1980s was only the starting point of sustainability awareness (Teoh & Thong, 1984). As such, it is not surprising that companies with foreign major ownership, particularly in the US and UK, were more inclined to accept social responsibilities compared to Malaysian companies (Teoh & Thong, 1984).

One of the earliest researches on sustainability awareness in Malaysia is done by Teoh and Thong (1984), where their study concludes that the awareness on sustainability is still low and firms concentrate more on the generation of profit compared to stakeholder engagement. Meanwhile, a comparative study on sustainability awareness between firms in two developing countries, Malaysia and Singapore, reveals that both countries show a low level of awareness, although Singapore firms indicate slightly better awareness compared to Malaysian firms, which may be explained by differences in economic development and economic structure between both countries (Ramasamy & Ting, 2004). Furthermore, the perception that social and environmental accounting is good, but impractical since measurement for those aspects is difficult to establish (Zulkifli & Amran, 2006), is a sign that sustainability awareness in Malaysia is still low.

In contrast to the low awareness, Malaysian professionals and firms do have positive attitudes towards sustainability commitments (Abdul Rashid & Ibrahim, 2002; Zulkifli & Amran, 2006). In fact, a more recent research (Mohd Said, Sulaiman, & Nik Ahmad, 2013) reveals that professionals such as fund managers perceive environmental information as useful in their decision-making process, as such information may have effect on firms' future financial position. The positive attitude

towards sustainability commitments are not only found in listed firms (Abdul Rashid & Ibrahim, 2002; Zulkifli & Amran, 2006), but also among Small and Medium Enterprises (SMEs) (Nejati & Amran, 2009). However, the positive attitude may also be the result of mimicking the west, where firms make sure that they are equal to international players with regards to sustainability (Amran & Siti-Nabiha, 2009), and also as a public relations tool (Lu & Castka, 2009).

With regards to sustainability reporting or disclosure, it is found that in real practice, sustainability engagement by Malaysian firms is extensive, but they are not extensively reported (Teoh & Thong, 1984). Furthermore, sustainability reporting in Malaysian firms' annual reports seems to be of poor in quality and low in quantity (Thompson & Zakaria, 2004). The interesting point is that Malaysian firms showed higher disclosure in the recession period of 1998 compared to pre-financial crisis in 1996 and post-financial crisis year in 2000, which may be explained by firms trying to show their legitimacy, trying to boost public confidence and avoiding a negative image during the recession year (Haron, et al., 2006).

In relations to the content of reporting by Malaysian firms, most disclosure is on human resources, followed by product and consumers and community involvement (Bursa Malaysia, 2008b; Haron, et al., 2006; Jangu, Joseph, & Madi, 2007; Nik Ahmad, et al., 2003; Thompson & Zakaria, 2004). Malaysian firms are seen to practice philanthropic and public relations aspects of sustainability (Lu & Castka, 2009), environmental disclosure is the least of the disclosures, representing 7% of total sentences disclosed (Thompson & Zakaria, 2004), and these too being merely a general policy statement (Thompson & Zakaria, 2004). Environmental disclosure is

only extensively reported by firms in sectors which have a huge impact on the environment, such as by manufacturing, plantation and industrial products sectors, and much less by other industries (Bursa Malaysia, 2008b).

The disclosure also concentrates more on reporting good news on sustainability commitments (Haron, et al., 2006; Nik Ahmad, et al., 2003; Thompson & Zakaria, 2004), which implies that sustainability reporting is more for improving corporate image (Nik Ahmad, et al., 2003). With respect to the location for reporting, there is no specific location identified, where most firms report in the Chairman's Statement and Operations Review (Nik Ahmad, et al., 2003). The nature of reporting is merely narrative or a declarative statement (Haron, et al., 2006; Nik Ahmad, et al., 2003).

The low awareness and disclosure of sustainability reporting during the preliminary stages of implementation in Malaysia may be attributed to several reasons. The major cause is the lack of legislations and regulations on sustainability disclosure (Teoh & Thong, 1984; Thompson & Zakaria, 2004); and the lack of education on environmental and social responsibility (Ramasamy & Ting, 2004). Apart from that, low disclosure is also caused by the firms' perception that such disclosure does not incur much tangible benefits (Teoh & Thong, 1984; Thompson & Zakaria, 2004), such as its positive consequences on financial performance (Ramasamy & Ting, 2004), and lack of pressure from stakeholders (Thompson & Zakaria, 2004).

Regardless of the poor quality and low quantity of sustainability reporting in annual reports (Thompson & Zakaria, 2004), the situation of sustainability awareness and reporting is improving (Thompson & Zakaria, 2004). Recent sustainability awareness



and disclosure research indicates that the level of awareness of CSR is high, where 83% of the sampled Malaysian PLCs disclosed their social performance, although the disclosure only represents a mean of 3.1% of total disclosure in annual reports (Muniandy & Barnes, 2010). Furthermore, a more current research which deals with a longitudinal study of sustainability disclosure from the year 2005 to 2009, reveals that the highest mean difference of every sustainability component is in the year 2007 (Zainal, Zulkifli, & Saleh, 2013b). Additionally, by comparing the CSR disclosure in 2006 and 2009, where the former marks the voluntary period, while the latter relates to the mandatory period, CSR disclosure is found to have increased between the two years (Ahmed Haji, 2013). The increased level of sustainability disclosure in annual reports may be due to the requirement by the Malaysian Government that every listed firm in Bursa Malaysia must report its sustainability activities starting from the year 2007 (Ministry of Finance, 2006), which has been gazetted in Bursa Malaysia Listing Requirements under Appendix 9C, Para 29, thus signaling the role of regulations in shaping the development of sustainability reporting in Malaysia (Zainal, et al., 2013b).

As a summary, the preliminary stage of sustainability reporting shows signs of poor quality and low quantity, which may be associated with the lack of regulations and education. However, the level of awareness and disclosure of sustainability reporting is showing a positive sign, and has increased through the years, which may be due to the requirement of reporting by the government. The most reported area is on the workplace or employee dimensions and also community engagement. However, there appears to be less on environmental activities. Most firms report good news, which indicates that sustainability reporting is used as a tool to portray good corporate

image. Furthermore, such reporting done by the firms seems to mimic the western firms, in order to make sure that they are on par with the international players.

### **2.2.1.2 Factors for sustainability reporting in Malaysia**

The second stage of the study on sustainability in Malaysia is on the motivations for sustainability engagement and reporting (Amran & Devi, 2007, 2008; Haniffa & Cooke, 2002, 2005; Jangu, et al., 2007; Mohd Ghazali, 2007; Said, Zainuddin, & Haron, 2009). In this area of research, researchers try to understand the factors that may influence firms to engage in sustainability activities, and the reasons for sustainability disclosure. Sharma and Henriques (2005) suggest that different stakeholder pressure may affect the sustainability practices adopted by firms; therefore, the identification of the internal drivers of sustainability reporting is necessary, as this may lead to improved understanding on how and why firms value sustainability.

The improving level of sustainability reporting and awareness in Malaysia is influenced by several factors. One of the factors is the role played by the Malaysian Government in promoting the sustainability agenda. For instance, as mentioned in the previous section, among the nine challenges outlined in Vision 2020, three of them, i.e., to establish a moral and ethical community, to establish a fully caring culture and to ensure an economically just society, are related to achieving sustainability. In relation to business activities, it is a requirement to disclose sustainability commitments in annual reports starting from the year 2007. Furthermore, the Silver

Book was launched in 2006 to promote sustainability awareness and to guide sustainability activities and implementation among GLCs (Putrajaya Committee on GLC High Performance, 2006). Additionally, the latest development in promoting sustainability by Malaysian government may be seen in the Malaysian Code for Institutional Investors (Minority Shareholders Watchdog Group & Securities Commission Malaysia, 2014), where one of the principles outlined is for institutional investors to incorporate governance and sustainability considerations into the investment-decision process, which covers corporate governance and business ethics, employee benefits and corporate culture, product, customers and supply chain and environmental and social impact . All these evidences thus confirm the government's role in promoting sustainability awareness among the Malaysian society.

As sustainability reporting has been made a requirement from 2007, all Malaysian listed firms, including the GLCs which are listed on Bursa Malaysia, need to provide information on the sustainability commitments undertaken for a particular year in their corporate annual reports. From the perspective of the Political Economy Theory, the corporate annual report is regarded as the proactive document which is used as the tool to portray the image of a firm's management (Stanton & Stanton, 2002). The preparation of annual reports may be particularly to portray corporate image, where the information is mentioned as favorably as possible (Amran & Devi, 2007). In this case, the firms that have substantial shareholdings by the Malaysian Government, particularly the GLCs, may want to use their corporate annual reports to portray the Government's social and environmental responsibility initiatives. Several researches have been conducted to study the connection between government ownerships and sustainability commitments and reporting (Ahmed Haji, 2013; Amran & Devi, 2007,

2008; Mohd Ghazali, 2007; Said, et al., 2009), and the results are consistent, where government ownership has an influence on sustainability activities and reporting.

Said et al. (2009) examine the relationship between several corporate governance characteristics, including ownership structures and CSR disclosure. The findings indicate that government ownership is associated with the extent of CSR disclosure, and is seen to be the most significant variable. Amran and Devi (2007) indicate that the development of CSR in Malaysian firms is highly influenced by the government, where firms which are dependent on government contracts, and have high level of government shareholding, have a significant relationship with CSR disclosure (Amran & Devi, 2008). Similar findings are revealed by Mohd Ghazali (2007) who conclude that firms with government shareholding significantly report their social and environmental activities.

Besides government ownership, managerial ownership is another factor that is considered as the determinant for sustainability engagement and reporting, which is justified by the Agency Theory. The basic relationship between shareholders and agents can be described as the relationship between principals and agents. As such, it is the duty of the managers as the agents to make corporate decisions which may benefit the shareholders or the principals. However, as managers have the ability to assess corporate information and make corporate decisions, they might tend to make choices which will benefit themselves, and not their principals. This situation is also known as agency conflict. One of the ways to counter the agency conflict is by increasing the managerial shareholdings in the ownership structure (Mohd Ali, Mohd Salleh, & Hassan, 2008). By giving a sum of shareholdings in the ownership

structure, managers may view themselves as one of the owners or principals; thus, they may act in accordance to the principals' benefit. As such, from the Agency Theory perspective, increasing the managers' shareholdings may be related to an increase in sustainability reporting. This is supported by a previous research in a developed country, which conclude that managerial ownership is positively associated to charitable giving (Coffey & Wang, 1998). On the other hand, several researches find negative association between the two factors (Ahmed Haji, 2013; Eng & Mak, 2003; Mohd Ghazali, 2007). Eng and Mak (2003) explains that agency problem will be greater when managerial ownership is low, thus voluntary disclosure may be seen as a substitute to monitoring the managers' actions. Therefore, lower managerial ownership may results higher voluntary disclosure. In the Malaysian context, Mohd Ghazali (2007) and Ahmed Haji (2013), argues that firms with substantial shareholding by managers are said to be closely held, or in other words, the firms may have relatively low public interest. The executives of the closely held firms are believed not to invest in sustainability activities as the costs to invest outweighs its potential benefits (Mohd Ghazali, 2007). The presence of high shareholding managers in the closely held firms thus explains the negative association between managerial ownership and sustainability reporting. Meanwhile, another Malaysian research by Said et al. (2009) find no significant association between managerial ownership and sustainability reporting.

Another factor which has been studied as a motivating factor for sustainability reporting is the existence of foreign ownership. A few studies reveal that by having foreign shareholdings in the ownership structure, sustainability disclosure may be improved (Haniffa & Cooke, 2005). The findings signify that since foreign

shareholders, particularly from the developed western nations, are more aware of social and environmental responsibilities, their awareness might be translated into the incorporation of sustainability commitments in the corporate agenda (Haniffa & Cooke, 2005; Teoh & Thong, 1984). However, contrary to these findings, several other research find no association between having foreign ownership and sustainability commitments and reporting (Amran & Devi, 2008; Said, et al., 2009). The possible explanation for this situation is that foreign major shareholdings usually occur in multinational companies, where these types of firms usually have a separate or stand-alone sustainability report not captured by the previous research, having looked at information only in annual reports (Amran & Devi, 2008).

Another factor which may impact sustainability reporting is the audit committee. In developed countries, Ho and Wong (2001) reveal that the existence of audit committee may enhance the level of voluntary disclosure. Barako, Hancock and Izan (2006) find similar results, that with the existence of audit committee, firms may experience reduction in agency cost and improve internal control, which lead to more quality disclosure. In the Malaysian context, Said et al. (2009) examined the corporate governance devices on the level of sustainability reporting, and the result shows that audit committee, which is measured by the proportion of independent non-executive directors in the committee, significantly influences the level of sustainability reporting. The result by Akhtaruddin, Hossain, Hossain, & Lee (2009), with respect to Malaysian context however, fails to find significant association between audit committee and voluntary disclosure, which contradicts Said et al. (2009). This may be due to the measurement used, where Akhtaruddin et al. (2009) utilize the proportion of audit committee members to total board members which may not

signify the quality of the committee itself, compared to Said et al. (2009), who utilize the proportion of independent non-executive directors in the audit committee, which may indicate the quality of the committee. Apart from audit committee, Haniffa and Cooke (2002) conclude that domination of family members on board and the non-executive directors also indicate a significant relationship to voluntary disclosure.

Apart from the governance factors discussed above, one of the factors proven to be linked to sustainability engagement and reporting, is the size of the firm. Ramasamy and Ting (2004), Haniffa and Cooke (2005), Amran and Devi (2008) and Ahmed Haji (2013) find that firm size matters with regards to such reporting, as firms with larger size tend to disclose more sustainability commitments. However, in research by Janggu et al. (2007), although positive sign is found between firm size and sustainability disclosure, the impact is weak. Also, Smith et al. (2007) find no relationship between the two; however, the results are limited to environmental reporting. The insignificant relationship between firm size and sustainability reporting is also found by Othman et al. (2011), who assert that firm size does not have significant influence on sustainability reporting which may enhance firms' reputation.

Another factor that has been studied with regards to its link to sustainability engagement and reporting in Malaysian firms is the firm's profitability, where the results are inconsistent. Some authors find positive and significant relationship between profitability and sustainability reporting (Haniffa & Cooke, 2005; Janggu, et al., 2007; Othman, et al., 2011; Said, et al., 2009). Some find no significant relationship (Amran & Devi, 2008; Mohd Ghazali, 2007), while Smith et al. (2007),

find significant relationship between profitability and environmental disclosure, although the magnitude is in negative direction.

Besides firm size and profitability, industry type is another factor which exerts influence on firms to engage in sustainability. In terms of awareness, firms in the finance industry are seen as being more positive towards CSR because they tend to be more prudent and conscious (Abdul Rashid & Ibrahim, 2002). Apart from that, the manufacturing, plantation and industrial sectors provide the most information on environment since these industries have high environmental impact; therefore, they may tend to have more environmental disclosure compared to other industries (Amran & Devi, 2008; Bursa Malaysia, 2008b).

Another factor which is connected to firms' engagement in sustainability is the presence of Islamic influence. In the Holy Qur'an and Hadith, a number of important verses justify the connection of Islam with social responsibility; for instance, in the Holy Qur'an, Allah commands "*... give full measure when you measure, and weigh with a balance that is true.*" (Surah Al-Israa, 17:35), thus signaling the connection between Islam and morality when engaged in business. Furthermore, in a Hadith, Prophet Muhammad (PBUH) once said, "*I have been sent only for the purpose of perfecting good morals*" (Hadith Sahih Bukhari, 1.56), giving good reasons for the requirement for Muslims to practice good morals, compassion and kind consideration in everyday life, as modeled by Prophet Muhammad (PBUH). The link between sustainability and Islam is also explained by modern research; for instance, the Islamic concept of sustainability is rooted in the principles of khalifah (vicegerency) and ukhuwwah (brotherhood) (Dusuki, 2008). As such, a man is considered as a



trustee of Allah SWT's resources (Khan & Karim, 2010), while taking care of each other and ensuring the basic needs of the poor (Mohammed, et al., 2009), thus justifying the connection of Islam through three relationships, i.e., to Allah SWT, to the environment and to fellow humans (Mukhazir, Muhamad, & Noordin, 2006). In terms of reporting, Islamic firms are expected to have the conduct of social accountability and full disclosure (Baydoun & Willett, 2000), and to the preservation of rights of the environment and community. Islam and its link to sustainability is also one of the important factors in shaping firms' sustainability activities and disclosure by Islamic banks (Sobhani, Zainuddin, & Amran, 2011). Furthermore, the Shariah approved firms are found to disclose more environmental sustainability compared to the non-Shariah approved firms (Zainal, Zulkifli, & Saleh, 2013a), thus signaling Islamic influence in shaping environmental sustainability through the principle of khalifah (vicegerency).

As a summary, previous researches in the Malaysian context have identified the motivating factors which impact the level of sustainability reporting. The government has a significant influence in shaping sustainability reporting in Malaysia. This may be explained by the Political Economy Theory where corporate reports are used to portray the good image of the firm (Stanton & Stanton, 2002). Therefore, the annual reports of firms which are highly controlled by the government, particularly the GLCs', may show a high level of sustainability reporting to describe the good and serious image of the government in upholding its engagement with sustainability. Besides government influence, foreign ownership, audit committee, family ownership and non-executive directors are among other factors which have influence on sustainability reporting. Although managerial ownership indicates positive influence

in developed countries, the association is not found in the Malaysian context. Finally, firm size, performance, industry types and Islamic influence are also found to assert influence on sustainability reporting.

The third stage of sustainability reporting research in Malaysia is on the consequences of sustainability reporting, which are discussed in the later section of this chapter.

### **2.3 Institutional investors**

The rapid emergence of a highly competitive global marketplace indicates the existence of a group of stakeholders, referred to as institutional investors. Institutional investors can be defined as large investors, other than natural persons, who exercise discretion over the investment of others (Lang & McNichols, 1997). Institutional investors act as an entity, which is contrary to the natural persons who are individual investors.

Institutional investors can be categorized according to the type of organization, i.e., public and union pension funds, mutual funds, investment bankers, insurance companies and private firms (Chaganti & Damanpour, 1991). Koh (2003) and Hsu and Koh (2005) provide more detailed categorization of institutional investors, which includes “*insurance companies (life and non-life), superannuation and pension funds, investment trusts (including unit trust), financial institutions (including banks and bank nominee companies, finance companies, building societies and credit*

*cooperatives), investment companies, and other nominee companies associated with the above categories of institutions”.*

The emergence of institutional investors in shaping the ownership structure does not only occur in developed countries, but also involves developing countries. In developed countries, for instance, in the year 2007, almost 60% of shareholdings in the US and Canadian listed firms belonged to institutional investors, and in UK, institutional investors hold 37.9% shares in the listed firms (Aggarwal, et al., 2011). The growth of institutional investors may also be evidenced in developing nations of East Asia, where the assets of institutional investors in the region amounted to USD1.5 trillion, or around 45% of GDP in the region as a whole (Ghosh, 2006). In developing countries such as Malaysia, three largest types of institutional investors in Malaysia, namely the pension fund, life insurance and mutual funds held total assets of USD114 billion equivalent to 96.4% of Malaysian GDP (Ghosh, 2006), and at the end of 2013, EPF holds approximately USD182 billion of funds (Towers Watson, 2014). Furthermore, among the 10 largest companies by market capitalization listed on Bursa Malaysia, it was identified that 51.03% of ownership belongs to institutional investors (Saleh, et al., 2010). The focal role played by institutional investors is strengthened by the fact that 70% of total institutional shareholdings in firms listed on Bursa Malaysia Main Board belong to among the five largest institutional investors in Malaysia, i.e., the EPF, LTAT, PNB, LTH and SOCSO (Abdul Wahab, et al., 2008). This situation signals the significant role played by institutional investors in shaping the ownership structure of the firms in which they invest.

Having institutional investors in the ownership structure is linked to several benefits. Firstly, institutional investors are seen to be in a unique position to exercise influence over firms in which they invest. Therefore, institutional investors may hold the firms accountable for good governance (Securities Commission Malaysia, 2011a). This may be done through demands for meetings with senior management of firms, discussion on strategies to achieve firms' goals and objectives, and to lead the voice of shareholders in demanding for corrective action when there exists any wrongdoings by the management (Securities Commission Malaysia, 2011a). Therefore, it may be concluded that the existence of institutions in corporate ownership is good for monitoring purposes, as the institutions will have good access to information and resources to build necessary monitoring capabilities (Abdul Jalil & Abdul Rahman, 2010; Chung, Firth, & Kim, 2002).

Secondly, the presence of institutional investors in the ownership structure may also help to mitigate aggressive earnings management (Abdul Jalil & Abdul Rahman, 2010; Chung, et al., 2002; Hsu & Koh, 2005; Koh, 2003). This is evidenced especially when the institutions have large or substantial shareholdings; therefore, they may inhibit the firms' managers from performing earnings management, such as increasing or decreasing reported profits according to the managers' desire (Chung, et al., 2002). Apart from that, earnings management is also found to be mitigated by the existence of long-term or dedicated institutions, which signals that this type of institutions may act as a good corporate governance mechanism to mitigate earnings management (Hsu & Koh, 2005; Koh, 2003). In the Malaysian scenario, the institutional investors who are the members of the Malaysian Shareholders Watchdog Group (MSWG), i.e., EPF, PNB, LTAT, LTH and SOCSO are found to be effectively mitigating earnings

management behavior among firms in which they invest (Abdul Jalil & Abdul Rahman, 2010). This situation is not surprising as the members of the MSWG are Malaysia's largest institutional investors (Abdul Wahab, et al., 2008); therefore, by using their substantial shareholdings, they have an adequate influence over firms, thus may mitigate earnings management behavior effectively (Chung, et al., 2002).

With SRI or ethical investment concept being introduced to encourage investments in socially responsible firms, institutional investors perceive that investing in these firms will result in long-term benefits, and are therefore drawn to this concept (McPeak & Tooley, 2008). SRI can be distinguished from ordinary investment by its distinguishing feature of combining social, environmental and financial goals, as well as ethical and corporate governance issues in investment decision making (Renneboog, et al., 2008; Sparkes, 2002). Furthermore, Leahy (2008) suggests that SRI uses three fundamental investment strategies, which are (1) screening for both positive and negative criteria, where investors evaluate their investment decisions based on the environmental, social and governance performance; (2) shareholder advocacy, where investors encourage firms to be better corporate and global citizens through their shareholdings; and (3) community investing, where investors allocate funds for investment in disadvantaged areas of the community.

McPeak and Tooley (2008) indicate that there has been a growing interest in SRI in recent years, where in the US, total SRI assets increased 258% between 1995 to 2005. The European Social Investment Forum (EUROSIF), a pan-European group whose mission is to encourage and develop sustainable and responsible investment and better corporate governance, indicates that the total SRI assets have increased in Europe,

from €2.7 trillion to €5 trillion, as of 31 December 2009, which denotes about 87% growth compared to the previous two years (Eurosif, 2010). Moreover, at the end of the year 2010, SRI market value was estimated at US\$7 trillion and this figure is expected to increase to US\$26.5 trillion by 2015 (Bernama, 2010). This shows that in developed countries, institutional investors are screening their investment opportunities, and they may be likely to consider investments in the companies that adopt socially responsible activities. As a result, firms must adjust themselves to these changes, by incorporating sustainability performance in their agenda, and giving due importance to sustainability performance, in line with financial performance.

The vast growth of SRI funds may be attributed to its benefits, where the performance of SRI funds has been found to be better compared to the non-SRI funds. For instance, SRI funds perform better compared to the non-SRI funds (Leahy, 2008; McPeak & Tooley, 2008), which may have benefitted from a focus on growth areas such as environmental management. With the benefits that result in better financial performance, it is not surprising that institutional investors now show sustainability concerns in their investment decisions.

In relation to the nature of investment, institutional investors may be categorized according to their investment horizons, i.e., dedicated and transient institutional investors. The former, which is also referred to as long-term institutional investors, relates to those who invest in firms with the intention of holding their ownership stake over a long period of time and have strong incentives towards monitoring activities, while the latter, which is also referred to as myopic or short-term institutional investors, focuses excessively on current earnings rather than long-term earnings

(Koh, 2003). Furthermore, short-term investors buy and sell their investments frequently, while long-term investors hold their positions unchanged for a considerable length of time (Gaspar, Massa, & Matos, 2005). As one of the aims of this study is to examine the effect of sustainability reporting on institutional investors' ownership according to their investment horizons, the next section elaborates on the major institutional investors in Malaysia and their nature of investments.

### **2.3.1 Malaysian institutional investors and their investment horizons**

The market for institutional investors in Malaysia is highly controlled by the Malaysian government (Abdul Wahab, et al., 2008), which is mainly dominated by the federal government's investment institutions, known as the GLICs. GLICs comprise three major pension funds, namely the EPF, KWAP and LTAT, a unit trust fund, namely the PNB, a pilgrimage fund, known as LTH, a sovereign wealth fund, namely the Khazanah Nasional and an investment arm, which is the Menteri Kewangan Diperbadankan (MKD) or Minister of Finance Incorporated, MOF (Inc) (Putrajaya Committee on GLC High Performance, 2014).

The scenario where the market for institutional investors is highly controlled by the government is related to the introduction of the New Economic Policy (NEP) in 1970, where the government utilized institutional investors as tools to reduce the equity gap between various ethnic groups in the country, by increasing the equity ownership of

Bumiputera<sup>1</sup> in the capital market (Jomo, 2004). One of the major goals of the NEP is to achieve 30% holdings of share capital for the Bumiputera. Therefore, trust agencies were established to accumulate shares on behalf of the Bumiputera community, with the purpose of redistributing them at some future date (Beeson, 2000).

The establishment of the trust agencies consequently leads to the foundation of other institutions by the governments with their own purposes, which are in line with the government's objectives. These government-related institutions or GLICs play an important role in the share ownership of Malaysian firms, where five of the major GLICs held 70% of institutional shareholdings in firms listed on Bursa Malaysia (Abdul Wahab, et al., 2008). Besides the GLICs, the market for institutional investors in Malaysia also comprises other types of federal and state government institutions, and also private institutions, like banks, insurance companies and unit trust and mutual funds asset management companies.

The Malaysian Code for Institutional Investors, aims to set out broad principles of effective stewardship and guidance for institutional investors to implement the (Minority Shareholders Watchdog Group & Securities Commission Malaysia, 2014) disclosure of their stewardship responsibilities, policy for managing conflicts of interest and voting policy. Furthermore, institutional investors are also required to appropriately engage with and monitor the investee companies, and incorporate governance and sustainability in the investment decision making process (Minority Shareholders Watchdog Group & Securities Commission Malaysia, 2014).

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<sup>1</sup>'Son of the soil' – to accommodate the Malays and the native Muslims and non-Muslims of Sarawak and Sabah in a single category (Shamsul, 2001)



As one of the objectives of this study is to examine if sustainability reporting has an influence on the ownership by institutions according to their different investment horizons, the section below discusses the various types of institutional investors in the Malaysian market. The discussion also focuses on the investment behavior or investment horizons of these institutions when making investment decisions.

### **2.3.1.1 Pension and provident funds**

By general definition, pension and provident funds collect, pool and invest funds contributed by sponsors and beneficiaries, to provide for retirement income of beneficiaries (Davis, 2002). In other words, pension and provident funds refer to the funds established with the main purpose of providing financial security at retirement. Although the purpose of both funds are the same, i.e., to provide retirement income for the depositors, the main difference between the two is based on how the income is paid. Pension funds enable the depositors to receive a part of the income during retirement, while the other part is paid throughout the retirement age. On the other hand, provident funds enable the beneficiaries to receive a lump sum income upon retirement.

In Malaysia, the major pension and provident funds are the government-controlled institutions, i.e., the EPF/KWSP, the KWAP and the LTAT. EPF was established in 1951, to serve as the provident fund for private and non-pensionable public sector employees ([www.kwsp.gov.my](http://www.kwsp.gov.my)). KWAP, or previously known as Pensions Trust Fund, which was established in 1991, acts as the pension fund for pensionable public

sector employees ([www.kwap.gov.my](http://www.kwap.gov.my)), while LTAT, which was established in 1972 serves as the retirement fund and other benefits for the armed forces ([www.ltat.org.my](http://www.ltat.org.my)). These pension and provident funds hold a vast amount of assets, where in 2004, the assets of these funds were estimated at USD70 billion. From this amount, USD63.3 billion belongs to the EPF, which makes the provident fund the largest institutional investor in Malaysia (Ghosh, 2006). A more current statistics by Towers Watson, a professional services company, reveal that EPF puts itself in the seventh position among the 300 largest pension funds, with the total assets of USD182 billion in the year 2013 (Towers Watson, 2014). Besides these government-managed funds, there are also foreign pension funds and private pension funds, which are usually owned by local firms, such as Tenaga Nasional Berhad Retirement Benefit Trust or Public Bank Officers' Retirement Benefit Fund (Abd-Mutalib, Muhammad Jamil, & Wan-Hussin, 2013).

With regards to the investment horizons of pension and provident funds, they are typically considered as dedicated investors with a long investment horizon and hold share ownerships in firms for long periods (Ryan & Schneider, 2002). As the beneficiaries of the funds will only receive their benefits upon their retirement, the institutions holding the funds experience a long investment period before any pension benefits are paid out (Copeland, Weston, & Shastri, 2005). This scenario puts the pension fund managers in the situation of not being pressured for immediate returns (Hoskisson, Hitt, Johnson, & Grossman, 2002). Furthermore, since pension fund managers are generally salaried employees, they are not tied to the short-term performance of the funds, such as that faced by investment managers (Hoskisson, et

al., 2002; Johnson & Greening, 1999), such as banks, unit trust and mutual fund managers.

Despite the above arguments, Cox and Wicks (2011) reveal that pension funds which are externally managed have different preference to sustainability commitments compared to those of inhouse-managed public sector funds and inhouse-managed private sector funds. The results by Cox and Wicks (2011) show that the externally managed funds prefer portfolio theory and liquidity compared to social responsibility when making investment decision.

Nevertheless, pension funds are generally associated with long-term investment horizons, thus, they are often faced with pressures to invest in accordance with non-financial objectives, particularly in socially responsible firms (Davis, 2002), which benefits are paid-off in the long-term period. This situation is evident in Malaysia, as two of the Government-controlled pension funds, namely the EPF and KWAP, face regulatory instructions to consider favorably firms with good sustainability practices in their investment decisions (Ministry of Finance, 2006). Furthermore, the government-managed pension funds are grouped under the GLICs; therefore, since sustainability engagement is an important agenda for not only GLCs, but for GLICs as well, it is not surprising if the positive behavior towards sustainability engagement may also be portrayed in their investment horizon, which may be long-term in nature .

Since pension and provident funds are dedicated institutions, which have a long investment horizon, and strengthened by the regulatory expectations to invest in responsible firms, these funds consider sustainability reporting in their investment

decision. This has been proven in previous research which found positive association between sustainability reporting and the share ownership by pension funds (Cox, et al., 2004; Cox & Wicks, 2011).

### **2.3.1.2 Unit trust and mutual funds**

By general definition, unit trust and mutual funds are the types of funds managed by investment companies. Specifically, unit trust or mutual funds are defined as the investment tools or vehicles created by asset management companies specializing in pooling savings from both retail and institutional investors (Abdullah, Hassan, & Mohamad, 2007), with the aim of helping investors to grow their wealth by diversifying their investment portfolios. In Malaysia, the term ‘unit trust’ is more popular, although some unit trust management companies (UTMCs) use the term ‘mutual funds’ as well. Despite the difference in terms, unit trust and mutual funds have experienced considerable growth over the last decade in terms of the number of funds offered, and the volume of capital managed by the UTMCs (Abdullah & Abdullah, 2009). This situation is evident, where in 2004, Malaysian unit trust and mutual funds assets were estimated at USD23 billion, equivalent to 19.4% of GDP (Ghosh, 2006). Furthermore, Statistics by the Securities Commission Malaysia revealed that in 2006, there were 387 launched funds, with the total net asset value (NAV) of RM112 billion (Securities Commission Malaysia, 2006), and the figures have increased to 587 launched funds with total NAV of RM222 billion at the end of 2011 (Securities Commission Malaysia, 2011c).

In Malaysia, the situation of unit trust and mutual funds is unique as they may be divided into government-managed and private-managed funds. The government-managed funds are those funds under the management of Amanah Saham Nasional Berhad (ASNB), which is wholly owned by the PNB, one of the GLICs. PNB was incorporated in 1978 to act as a pivotal instrument of the federal government's NEP, the objective being to promote share ownership in the corporate sectors among the Bumiputera ([www.pnb.com.my](http://www.pnb.com.my)). Besides the federal government influence through ASNB and PNB, unit trust in Malaysia is also managed by state government agencies, such as Amanah Saham Kedah Berhad and Amanah Saham Sarawak Berhad.

For the private-managed unit trust and mutual funds, some of the UTMCs are under the corporate control of banks; for instance, Public Mutual Berhad is a wholly owned subsidiary of Public Bank Berhad, while Mayban Investment Management Sdn Bhd acts as the fund management company under the control of Maybank Group. Besides these locally-managed private unit trust and mutual funds, there are also private unit trust and mutual funds which are managed by foreign investment companies. As a close relationship exists between private-managed unit trust and mutual funds with the banking sectors, it is not surprising if they indicate a short-term investment horizon, which may be due to peer group benchmark, which forces them to concentrate on profit making in their daily operations (Cox & Wicks, 2011).

Nevertheless, previous findings have also determined that unit trust and mutual funds are categorized as funds with transient or short-term investment horizon as they can be redeemed by the investors by selling them back to the fund on any business day (Cox & Wicks, 2011). Furthermore, the investors of mutual funds may also switch

from one fund to another in the same fund family. In order to meet the redemption and switching of funds by the investors in the mutual fund, managers must have the cash sufficiency; therefore, unit trust and mutual fund managers will prefer liquidity, over social responsibility (Cox & Wicks, 2011).

The ability of unit trust and mutual fund managers to maintain their position is determined by their performance and also the managers' portfolio choices (Chevalier & Ellison, 1999). Apart from performance and the choices of portfolio, managers are also faced with punishment if their actions deviate from other managers' actions (Chevalier & Ellison, 1999). To maintain their positions, unit trust and mutual fund managers are pressured to present persistent short-run performance (Du, Huang, & Blanchfield, 2009); therefore, social responsibility factors are not the factors to be considered, as the benefits from these activities may only occur in the long-term horizon. The non-associations of sustainability reporting and ownership by unit trust and mutual funds have also been made evident in previous research (Cox, et al., 2004; Cox & Wicks, 2011).

With regards to the government-managed unit trust, limited evidence has been found to support its investment horizon. Previous research justified that unit trust have short-term investment horizons (Cox, et al., 2004; Cox & Wicks, 2011). However, in Malaysia, the government-managed unit trust is under the administration of PNB, one of the GLICs. As the government places high commitment for sustainability engagement, whether by the GLCs or the GLICs, which is strengthened by the establishment of the Silver Book which promotes sustainability disclosure among the government-related institutions, it is not surprising if the government-managed unit

trust portrays positive perception towards sustainability commitments by potential firms when making investment decision. Furthermore, the investment philosophy of PNB is *“We have always adopted strategies which reflect our trademark policy of “prudent dynamism”, one which places emphasis on fundamentals and long-term investment horizon to capitalize on new opportunities available”* (www.pnb.com.my), which shows that the government-managed unit trust has the tendency to invest in long-term investment strategies, supporting dedicated behavior when making investment decision.

### **2.3.1.3 Pilgrimage funds**

Another major institution in the Malaysian market for institutional investors is the pilgrimage fund, which is popularly known as LTH. LTH started to operate in September, 1963 with the aim of providing a mean of savings for the Muslims who wish to embark on a pilgrimage journey. Prior to the establishment of LTH, Muslims, especially in the rural areas, had to sell their livestock and properties in order to gain cash for the pilgrimage expenses. However, this medium poses a dangerous situation to the economic structure and could retard economic growth. Therefore, based on a working paper to improve the economy for future pilgrims by Royal Professor Ungku Aziz<sup>2</sup>, the Malaysian government decided to form the Future Pilgrim Fund Corporation (www.tabunghaji.gov.my). The establishment of the institution which is currently known as LTH, is consistent with the objective of managing the funds of the

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<sup>2</sup> Ungku Abdul Aziz bin Ungku Abdul Hamid graduated with a PhD from Waseda University in Tokyo. He was the Vice-Chancellor of the University of Malaya from 1968 to 1988 and was awarded the title of Profesor Diraja (Royal Professor) in 1978.

future Malaysian Muslim pilgrims without being based on riba' (usury) system and through investments which are in compliance with Shariah, and which provide benefits to the depositors (Mohd Nor, Abdullah, Ali, & Zakaria, 2012).

The LTH was established under Act 8 of the Pilgrimage Fund and Management Board Act 1969. Due to its establishment as a non-financial institution, LTH is categorized as one of the "other Development Financial Institutions (other DFIs)" ([www.bnm.gov.my](http://www.bnm.gov.my)). "Other DFIs" are non-bank financial institutions established by the Government with specific mandates and to assist the Government in developing and promoting identified strategic sectors of the economy (Maning, 2011).

Besides providing the means to save for future pilgrims, LTH also strives to provide excellent hajj management services and strengthen the depositors' economy by investing in strategic investments locally and globally to ensure sustainable and continuous growth ([www.tabunghaji.gov.my](http://www.tabunghaji.gov.my)). Although LTH has been acting as a finance company that invests the savings of would-be pilgrims in accordance with Shariah, its role is rather limited, as it is established as a non-bank financial institution (Ariff, 1998).

On the investment behavior of LTH, limited evidence has been found to determine if LTH practices dedicated or transient behavior when making investment decision. However, since the objective of the establishment is to provide the means of savings and excellent pilgrimage management services for future pilgrims ([www.tabunghaji.gov.my](http://www.tabunghaji.gov.my)), thus, the establishment of LTH may be looked upon as a social obligation of the government towards the future pilgrims in making sure that



their pilgrimage journey is well taken care of through efficient savings system and pilgrimage management. Previous studies suggest that institutions that are involved in societal obligations, such as foundations and charities, have dedicated behavior in investment decision making (Cox, et al., 2004). Thus, it is likely that this behavior is also portrayed in the investment decision making of LTH.

Another explanation for the possible preference of LTH towards sustainability engagement is Islamic influence. The connection of social responsibility and Islam has been argued in previous studies (Baydoun & Willett, 2000; Dusuki, 2008; Mukhazir, et al., 2006), where Islam is a religion that stands on faith (tawhidic) and upholds the principles of vicegerency (khalifah) and brotherhood (ukhuwwah). Therefore, Islamic firms and institutions are expected to undertake acts of social responsibility and full disclosure (Baydoun & Willett, 2000). As LTH is an institution which complies with Islamic law, it is likely that Islam influences the institution's investment decision making, which might favor firms with sustainability commitments.

Thus, based on the above-mentioned arguments, it is clear that institutions that cater for societal obligation may indicate dedicated behavior (Cox, et al., 2004). The connection of Islam with sustainability, and the fact that LTH is categorized as one of the GLICs which puts sustainability commitments as an important agenda, it is not surprising if the preference for sustainability engagement is portrayed in their investment conduct, which then points to dedicated or long-term investment behavior.

#### **2.3.1.4 Other GLICs**

Besides the above GLICs explained in previous sub-sections, two government-controlled institutions, namely a sovereign wealth fund, Khazanah Nasional, and the federal government's investment arm, Menteri Kewangan Diperbadankan (MKD) or Minister of Finance (Incorporated), MOF (Inc), also contribute to the market for institutional investors in Bursa Malaysia listed firms. The details of both institutions are discussed in subsequent sub-sections.

##### **2.3.1.4.1 Sovereign wealth fund**

In recent years, there has been a growth in the accumulation of international assets in the form of reserves, particularly in emerging market economies, which is referred to as the Sovereign Wealth Funds (SWFs) (Truman, 2007). SWFs is the term used to describe a separate pool of government-owned or government-controlled financial assets that include some international assets, which may take many forms and are designed to achieve a variety of economic and financial objectives (Truman, 2008).

The SWFs may be classified into several categories, i.e., stabilizing funds, savings funds, pension reserve funds and investment corporations (Kunzel, Lu, Petrova, & Pihlman, 2010). Stabilizing funds refer to the funds that are designed to reduce volatility by accumulating funds in good years, which may be subsequently used in bad years (Andersen & Faris, 2002). These funds are usually set up by countries which are rich in natural resources to insulate the budget and economy from volatile

commodity prices (IMF, 2007). For instance, countries which produce petroleum may establish stabilization funds with the purpose of hedging fluctuation of the price of petroleum, which is evident in the Oil Stabilization Fund of the Islamic Republic of Iran, Petroleum Fund of Timor-Leste and Oil Revenues Stabilization Fund of Mexico (Kunzel, et al., 2010).

The second category for SWF is the savings fund. The objective of savings funds is for the share of wealth for future generations (IMF, 2007). For instance, countries which are rich in natural resources may set up savings funds by transferring the non-renewable assets into a diversified portfolio of international financial assets to provide for future generations or other long-term objectives (IMF, 2007). Some examples of savings funds are the Alaska Permanent Fund of the USA, State General Reserve Fund of Oman and Temasek of Singapore.

Another type of SWF is the pension reserve funds. The main feature that differentiates pension reserve funds and pension funds is that the ultimate beneficiaries do not have the legal or beneficial ownership to the funds as in pension funds; instead, the legal beneficiaries for the pension reserve funds are the institutions which administer the pension fund system (Yermo, 2008). The objective of pension reserve funds is to cover identified liabilities which are often related to an aging population, which may cause future economic vulnerability and expenditure. Therefore, the fund is a prudent measure to meet such challenges by accumulating assets in the current time to offset the projected liabilities in the future (Das, Lu, Mulder, & Sy, 2009). Examples of pension reserve funds are the Australia Future Fund, New Zealand Superannuation

Fund, National Pensions Reserve Fund of Ireland and National Wealth Fund of the Russian Federation (Kunzel, et al., 2010).

Investment corporations refer to SWF funds which are established as a separate entity with the objective of reducing the negative cost-of-carry of holding reserves or to pursue investment policies with higher returns (IMF, 2007), and to enhance returns on reserves (Das, et al., 2009). Examples of investment corporations are the Government of Singapore Investment Corporation, Korea Investment Corporation and China Investment Corporation.

The identification of which category an SWF is classified into is important to recognize their investment objectives and behavior (Kunzel, et al., 2010). Due to the objective of providing wealth for future generations by the savings fund, and to cover identified liabilities resulting from aging population by the reserve pension funds, both categories fall in the long-term investment horizon, while stabilizing funds, with the purpose of reducing volatility of price fluctuation in commodity and investment corporations, with the purpose of enhancing returns on reserves, fall into a short-term investment horizon (Kunzel, et al., 2010). Nevertheless, the majority of established SWFs are either in the categories of savings funds or stabilization funds (Kunzel, et al., 2010).

Among the established SWFs of the world is the Malaysian incorporated SWF institution, Khazanah Nasional (Kunzel, et al., 2010). Khazanah Nasional Berhad (KHAZANAH) was incorporated on 3 September 1993 as a private limited company governed by the Companies Act, 1965. The equity of KHAZANAH is owned by the

Ministry of Finance, which in essence makes KHAZANAH a wholly owned entity of the Malaysian Government. KHAZANAH operates as the government's investment holding arm with the objective of promoting economic growth and making strategic investment which may contribute to nation building ([www.khazanah.com.my](http://www.khazanah.com.my)). As explained earlier, KHAZANAH is categorized as a savings fund, which purpose is to generate wealth for future generations. As such, the investment horizon of savings funds in general, and KHAZANAH in particular, is considered to be long-term in nature. Furthermore, as this institution is one of the GLICs, sustainability engagement is an important agenda, and hence, positive behavior towards sustainability engagement may be portrayed under the long-term investment horizon.

#### **2.3.1.4.2 Minister of Finance (Incorporated) (MOF, Inc)**

The Minister of Finance (Incorporated) or MOF (Inc) was established as a corporate body under the Minister of Finance (Incorporation) Act 1957, with the objective to oversee the investments made by the federal government of Malaysia ([www.treasury.gov.my](http://www.treasury.gov.my)). The act provides the authority to this institution to enter into contracts, acquisitions, purchases, possessions, holdings and maintain tangible and intangible assets on behalf of the federal government ([www.treasury.gov.my](http://www.treasury.gov.my)). MOF (Inc) holds shares in various public and private firms, involving several sectors, namely the social sector, infrastructure and public facilities sector, technology sector and economy sector. Among prominent firms with major shareholdings by MOF (Inc) include Institut Jantung Negara Sdn Bhd (IJN), Felda Holdings Bhd, and Indah Water Konsortium Sdn Bhd.

### **2.3.1.5 Banks**

The market for institutional investors in Bursa Malaysia listed firms also comprises the banks, which may be categorized into domestic and foreign banks, where the latter is divided between those operating inside and outside Malaysia. The banking sector's market is dominated by the domestic banks, where in 2001, 75% of the market share belonged to the domestic banks in terms of total assets and total deposits (Bank Negara Malaysia, 2001). Despite the dominance by the domestic banks, the presence of foreign banks is relatively significant. The operation of foreign banks in Malaysia started with the establishment of the Standard Chartered Bank in 1875, and by the end of 1990, 146 branches of 16 foreign banks were operating throughout the country (Marashdeh, 1994). Since then, foreign banks have become key players contributing to the Malaysian economy, with 27% holdings of the market share of the assets of the banking sector in the year 2012 (Bank Negara Malaysia, 2012).

In terms of operations, the banking system in Malaysia is divided into several categories, namely commercial banks, finance companies, merchant banks, discount houses and money brokers, all of which are licensed under the Banking and Financial Institutions Act (BAFIA) 1989, and supervised by Bank Negara Malaysia (Bank Negara Malaysia, 2001). These banks deal with the traditional functions of banks, including retail-banking services, cross-border payment services, hire purchase financing, leasing, short-term credit, trade financing and many more (Sufian, 2006). The banking operating system is also divided between conventional and Islamic system, where the latter operates within the boundaries of Shariah law. What is unique in the Malaysian banking system is that conventional banks are allowed to

offer Islamic banking and finance products along with the conventional products (Sufian, 2007).

As for the investment horizon of banks, previous studies have identified banks as transient institutions, or having short-term investment horizon (Zahra, 1996). This is supported by the situation where banks, mutual funds and insurance companies are mostly under the same corporate control, and are therefore subjected to peer group benchmarks, which will shorten their investment horizon so as to avoid underperformance (Cox & Wicks, 2011).

#### **2.3.1.6 Insurance companies**

The insurance sector in Malaysia is different from other countries based on the fact that it functions under a dual operating system, consisting of conventional and takaful (Islamic insurance) operating systems. Although takaful system is considered new compared to the established conventional insurance system, the efficiency of takaful system is considered to be competitive or at par compared to the conventional system (Md Saad, Abd Majid, Mohd Yusof, Duasa, & Abdul Rahman, 2006). This situation denotes that both the takaful and conventional insurance systems can provide efficient services to their customers. Therefore, Muslim customers have an alternative way of getting proper security which does not violate the Shariah laws (Islamic Law).

The insurance sector in Malaysia has been progressing well. In the year 1990, the assets of insurance fund were estimated at only RM9.5 billion, with RM7 billion

representing the assets for life insurance and the remaining for general insurance (Bank Negara Malaysia, 2010). However, this figure has been increasing over the years; for instance, in the 2010 Malaysian Annual Insurance Statistics, the assets of insurance funds escalated from RM122 billion in 2007 (RM102 billion for life insurance and RM20 billion for general insurance) to RM166 billion (RM141 billion for life insurance and RM25 billion for general insurance) in 2010 (Bank Negara Malaysia, 2010). This scenario shows the increasing trend of assets held by insurance companies.

In Malaysia, many insurance companies are under the corporate control of banks, operating in separate divisions; for instance, Etiqa Insurance and Takaful operate under the corporate control of Malayan Banking Berhad, while CIMB Bank Berhad has its own investment arm through CIMB Aviva Assurance, CIMB Aviva Takaful and BIMB Holdings Berhad with Syarikat Takaful Malaysia Berhad as its subsidiary.

With regards to their investment horizon, insurance companies have transient or short-term investment horizon, which is due to several characteristics. The first trait is that insurance companies are mainly a division and under the corporate control of banks. Therefore, these divisions would be under pressure to perform well as they are being observed by peer group benchmarks (Cox & Wicks, 2011). Consequently, the competition and the need to perform well may shorten the investment time horizon since the need for commercial profit increases to avoid underperformance compared to other divisions (Cox & Wicks, 2011).



The second trait that marks insurance companies as transient investors is that insurance funds share similarities with mutual funds. A recent research identified mutual funds and life insurance as having similarities in investment decision, as both funds indicate liquidity as preference when making investment decisions (Cox & Wicks, 2011), thus clearly signaling a transient investment orientation. Apart from that, Cox and Wicks (2011) also acknowledge that life insurance funds only consider social responsibility as the third factor when making investment decisions after liquidity and risks and returns (portfolio theory). Furthermore, among four determinants of social responsibility, i.e., non-financial news, health and safety, equal opportunities and environment, life insurance funds only indicate an association with non-financial news, while the other three indicators have no associations (Cox & Wicks, 2011).

#### **2.3.1.7 Other institutions**

Besides the major institutions as discussed in the above sections, the market for Malaysian listed firms' institutional investors also comprise other institutions, such as the SOCSO. This institution, which is also known as Pertubuhan Keselamatan Sosial (PERKESO), was established in 1971 as an agency under the Ministry of Human Resources. The objective of its establishment is to enforce, administer and to implement the Social Employees' Security Act 1969 and Social Employees' General Safety Regulations 1971. SOCSO provides social security protection through social insurance, including medical and cash benefits, provision of artificial aids and

rehabilitation to employees to reduce the sufferings and financial guarantees and protection for the family ([www.perkeso.gov.my](http://www.perkeso.gov.my)).

Other institutions are government-related institutions, be it the federal government, such as agencies belonging to the Government Ministries, the state government institutions, such as Majlis Agama Islam for respective states and development authorities, credit cooperatives, foundations and charities, whether domestic or foreign, which only hold an insignificant amount of shareholdings in the market for institutional investors among Malaysian listed firms.

Below is the summary of institutional investors and their investment horizons as been identified in previous studies:

	Type	Investment Horizon	Reference
1	Pension and Provident Fund	Dedicated	(Copeland, et al., 2005; Cox, et al., 2004; Cox & Wicks, 2011; Ryan & Schneider, 2002)
2	Unit Trust and Mutual Funds	Transient	(Cox, et al., 2004; Cox & Wicks, 2011)
3	Pilgrimage Funds	Limited Evidence	
4	Sovereign Wealth Fund	Mixed	(Kunzel, et al., 2010)
5	Banks	Transient	(Kunzel, et al., 2010)
6	Insurance Companies	Transient	(Cox & Wicks, 2011)
7	Charities	Dedicated	(Cox, et al., 2004)

## **2.4 Prior research with regards to sustainability reporting, financial performance and institutional ownership**

As explained in the previous chapter, the purpose of this study is twofold: (1) to examine if the impact of sustainability reporting on institutional ownership is different between dedicated and transient institutional ownership; and (2) to examine if financial performance exerts moderating impact on the relationship between sustainability reporting and aggregate, dedicated and transient institutional ownership. Thus, this section highlights the previous studies made in relation to the associations between sustainability reporting, institutional investors' ownership and financial performance.

### **2.4.1 Sustainability reporting and institutional investors' ownership**

Past studies have identified the association between sustainability commitments, reporting and institutional ownership. These studies can be classified into two categories: (1) studies that examine the effect of institutional ownership on the level of sustainability engagement and reporting (Abd-Mutalib, et al., 2013; Coffey & Fryxell, 1991; Hayashi, 2003; Johnson & Greening, 1999; Oh & Chang, 2011); and (2) studies that examine the ability of sustainability commitments and reporting in attracting investments from institutional investors (Cox, et al., 2004; Cox & Wicks, 2011; Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Muniandy & Barnes, 2010; Petersen & Vredenburg, 2009; Saleh, et al., 2010). In this section, the discussion is firstly focused on category (1), where having institutional

investors in firms' ownership structure may be the motivating factor for sustainability commitments and reporting, followed by category (2), where sustainability reporting may have the ability to attract investments from institutional investors.

In determining whether institutional owners have the capability to establish sustainability engagement among firms, researchers have examined the institutional ownership role in shaping firms' CSR activities (Abd-Mutalib, et al., 2013; Coffey & Fryxell, 1991; Hayashi, 2003; Johnson & Greening, 1999; Oh & Chang, 2011). Coffey and Fryxell (1991) conclude that the existence of institutions in the ownership structure is positively related to social responsiveness of firms, or in other words, firms with more institutional shareholdings are more inclined to engage in social responsibilities. This is strengthened by Oh and Chang (2011), where the presence of institutional ownership is positively related to CSR ratings; and by a local research which focuses on Malaysian market, that justifies the positive association of institutional ownership presence to the extent of sustainability reporting (Abd-Mutalib, et al., 2013). All researches confirm that the existence of institutional owners in firms' ownership structure may influence the sustainability commitments of the firms.

However, although Coffey and Fryxell (1991) and Oh and Chang (2011) reveal that institutional owners may exert influence on firms' sustainability commitment, Johnson and Greening (1999) and Hayashi (2003) conclude that different types of institutional investors determine different goals for the firms with regards to sustainability commitments. The long-term or dedicated institutional investors seem to be more active in engaging firms with social activities, while short-term or transient

institutional investors regard social responsibilities only as tools to enhance reputation and legitimacy. As the benefits from sustainability activities may only be realized over a long period of time, dedicated institutional investors, who have the patience to wait for long-term returns, might influence firms' sustainability commitments. This is contrary to transient or short-term investors, who are under tremendous pressure to gain short-term returns, and thus, may not consider sustainability commitments in their corporate agenda.

Notwithstanding the findings by Johnson and Greening (1999) and Hayashi (2003), who claim that short-term institutional investors disregard sustainability commitments in their business agenda, Oh and Chang (2011) and Abd-Mutalib et. al (2013) disclose the contrary. Regardless of the non-association of short-term institutions and sustainability engagement, Oh and Chang (2011) suggest that short-term institutions, such as banks and securities firms, do exert influence on sustainability commitments. This situation is exemplified as follows: (1) although these institutions may be under more pressure to gain short-term returns, as significant shareholders, they may not be able to sell the shares without severely affecting the share price (Oh & Chang, 2011). Therefore, since they need to hold the shares over a long time period, investment in sustainability commitments may result in extra benefit; and (2) these institutions may tend to consider not only the potential returns, but also the associated risks. Thus, investing in sustainability commitments may distance the firms from the associated risks, as socially irresponsible firms are exposed to higher regulatory actions, legal punishments and consumer activism (Oh & Chang, 2011). On the other hand, Abd-Mutalib et. al (2013) fail to find significant association between pension funds and

sustainability reporting, which suggests that pension funds may also be related to myopic behavior.

With regards to the impact of sustainability reporting on institutional investors, several studies have been conducted to find out if sustainability commitments and reporting may attract investment from institutional investors (Cox, et al., 2004; Cox & Wicks, 2011; Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Muniandy & Barnes, 2010; Petersen & Vredenburg, 2009; Saleh, et al., 2010; Teoh & Shiu, 1990). Among the early research is by Teoh and Shiu (1990), who carried out a study among 200 investment companies and financial institutions in Australia to observe the institutional investors' perceptions and attitudes towards social responsibility information when making investment decisions. The research, which utilized the Theory of Reasoned Action, concludes that institutional investors perceive financial information as far more important when making investment decisions compared to social responsibility information. However, if the company has very poor social responsibility records which might have adverse impact on its reputation, institutional investors may consider social responsibility information (Teoh & Shiu, 1990).

In the US, however, the situation is different. For instance, Graves and Waddock (1994) indicate that there is a significant positive relationship between sustainability performance and the number of institutions that hold shares in each company, although not up to the percentage of shares held by the institutions. Furthermore, a study in Canada reveals that sustainability engagement measured by CSP, indeed has its attractions for institutional investors, which indicates that institutional investors

pay attention to firms' CSP information before making investment decisions (Mahoney & Roberts, 2007).

Using a different research paradigm, Petersen and Vredenburg (2009) perform a qualitative study by utilizing the case study method, to examine how sustainability engagement by firms influences institutional investors' decision. The findings indicate that institutional investors perceive engagement to sustainability activities is directly correlated to financial performance. Thus, socially responsible firms are perceived to add value as engagement to sustainability may enable risk mitigation, generate market opportunities, and be a proxy for quality management. Although socially responsible firms may add value, however, institutional investors are not willing to pay premium for shares of such firms, but do favor holding shares in companies that engage in sustainability (Petersen & Vredenburg, 2009).

Cox et al. (2004) expand the literature by classifying the institutional investors into long-term and short-term investors, or dedicated and transient investors. Their findings indicate that CSP has a significant positive relationship with long-term institutional ownership, while no significant relationship is found between CSP and short-term institutional ownership. The findings signal the different orientation of investment decision in socially responsible firms by both types of institutional investors. Socially responsible firms will eventually generate long-term financial performance which will attract long-term investors who are interested in the long-run profitability, while short-term investors are only interested in the short-run profitability.

The situation where sustainability reporting exerts different influence on different types of institutional investors was pursued further by Cox and Wicks (2011). In their study, the researchers examine if the demand for shares by dedicated and transient institutional investors is influenced by corporate responsibility, compared to market liquidity and risk. Consistent with previous findings (Cox, et al., 2004; Johnson & Greening, 1999), corporate responsibility influences the demand for shares more than market liquidity for all the dedicated or long-term institutional investors, represented by in-house managed public and pension funds. Conversely, for transient or short-term institutions, all types of transient institutional investors, represented by mutual funds, life insurance and externally managed pension funds, have greater holdings in companies whose stock has greater market liquidity, and these institutions put corporate responsibility factor as the lowest in rank of importance.

In the developing market, which is evident in Malaysia, among the researches that concentrated on the effect of sustainability reporting on institutional ownership of Malaysian corporations, are by Hoq et al. (2010), Saleh et al. (2010) and Muniandy and Barnes (2010).

Hoq et al. (2010) investigated the relationship between CSR disclosure and CSR dimensions with institutional ownership among 200 companies listed on the main board of Bursa Malaysia from 2000-2005. The results reveal that CSR disclosure is positive and significantly related to institutional ownership, which is measured by the percentage of shares owned by the institutional investors, showing that institutional investors pay attention to CSR when making investment decisions. Similar result is observed in the research by Saleh et al. (2010), where positive relationship between



CSR disclosure and the percentage of shares held by institutions and the number of institutions holding shares in the particular firms is found. This situation explains that institutional investors in Malaysia consider CSR activities and disclosures when making decisions for selecting portfolio investments.

Although the above researches show significant association between CSR disclosure and institutional ownership, mixed results have been found in studies to determine the relationship between CSR dimensions and institutional ownership. Hoq et al. (2010) indicate that only employee relations is strongly positive and significantly related to institutional ownership, while community involvement indicates different relations to two measures of institutional ownership. Saleh et al. (2010) point out that two dimensions of CSR, namely employee and product dimensions, are significantly and positively related to institutional ownership. On the contrary, community involvement and environment dimension are found to be significantly negative to institutional ownership, which explains that institutional investors perceive that by engaging in the two dimensions, a significant amount of financial resources may need to be used, thus having a negative impact on companies' cash flows. The inconsistencies found between these two studies however, triggers the question of reliability, as both studies utilize the same sample, where 200 largest companies by market capitalization, listed in Bursa Malaysia for the year 2000-2005, are chosen as samples.

Contrary to the above findings which indicate positive relationship between CSR disclosure and institutional ownership or mixed findings between CSR dimensions to institutional ownership, Muniandy and Barnes (2010) reveal there is neither a negative nor positive correlation between the CSP and institutional investors'

shareholding. This finding signals that institutional investors in Malaysia do not consider CSP as one of the measures when making investment decisions.

The above discussion reveals the gap which is highlighted in this study. The inconsistent findings from the above studies might be due to the treatment of institutional owners as a monolithic group (Zahra, 1996). Therefore, in this thesis, separation of categories for institutional investors is done, where the institutional owners are categorized according to their different investment orientations, i.e., institutions having dedicated or transient behavior when making investment decisions.

The effect of sustainability reporting on institutional ownership is strengthened by the support from sustainability assurance reports or listing on the sustainability index. Chia (2009) examined whether the assurance reports and listing on sustainability index influence institutional investors' decision making and confidence. The Malaysian based research explored the perceptions of four categories of Malaysian institutional investors, i.e., banks, insurance companies, fund management companies and GLICs. The results reveal that Malaysian institutional investors perceive that firms' listing on sustainability index may influence the institutional investors' decision making and confidence; however, no such association is found between having an assurance statement on sustainability reports and institutional investors' decision making and confidence, which may be due to the situation where assurance reports are still voluntary in nature.

#### **2.4.2 Sustainability reporting and financial performance**

The earlier studies on the consequence of sustainability reporting on financial performance show mixed results. Cochran and Wood (1984) examine the relationship between CSR disclosure and financial performance and conclude that there is only a weak support for the link between CSR disclosure and financial performance. The findings of this study is the expectation, where firms are expected to have an improved financial performance as a result of practicing social responsibilities (csrnetwork.com & Yeldar, 2004). Furthermore, McGuire et al. (1988) indicate that prior performance is generally a better predictor of CSR than subsequent performance. Therefore, the association between CSR and financial performance might be the result from prior high performance. Another research by Balabanis, Phillips and Lyall (1998) concludes that CSR disclosure, which is measured by women's position, ethnic minorities' position, philanthropy and environmental actions, is affected by CSR performance and concurrent financial performance. The results reveal that the past performance is only associated with philanthropic performance, while the environmental protection activities are negatively correlated with subsequent financial performance. Furthermore, the policies regarding women's position is associated with subsequent performance, which highlights that firms' subsequent performance is positively affected by improvements in women's position. As the overall conclusion, weak and inconsistent relationship is found between CSR and financial performance.

More recent research, however, shows positive sign of sustainability commitments to financial performance. For instance Tsoutsoura (2004), who conducts a study in the

US, reveals that sustainability reporting has a positive influence on financial performance. Furthermore, Mahoney and Roberts (2007) suggest that environment and international dimensions are significantly related to financial performance, although composite measure of CSP shows no significant relationship to financial performance. McPeak and Tooley (2008), who study firms in Dow Jones Sustainability Index (DJSI), and Standard & Poor (S&P) 500 firms, examine if the DJSI firms, which are seen as CSR leaders, can outperform S&P500 firms financially. Overall results indicate that the DJSI companies outperform the expectations with 101% increase in stock price and 38% increase in the return on equity (ROE), compared to only 57% increase in stock and 12% increase in ROE for S&P 500 firms. Overall result also shows that DJSI firms outperform the expectations, indicating a link between their position as CSR leaders and superior financial performance. A similar research is done to compare the financial performance between high-sustainability-rated portfolios and the lower-rated portfolios (Van de Velde, et al., 2005), where the results confirm that the high-rated portfolios outperform the low-rated counterparts, although not to a significant extent.

The correlation between sustainability and financial performance is also justified to be positive regardless of the measures used. For instance, both accounting and market-based measures used indicate positive correlations between sustainability reporting and financial performance, although accounting measures indicate higher correlation (Orlitzky, et al., 2003). Overall conclusion that can be made is that investment made on sustainability activities pays-off (Orlitzky, et al., 2003).

In the Malaysian context of sustainability reporting to firm financial performance, mixed findings are revealed. Ramasamy, Ting and Yeung (2007) examine the financial performance of the CSR performers compared to other firms in the same capital market, and if the CSR-performers outperform the non-CSR performers. The results indicate that although the CSR portfolio performs better than the market, and the performance is higher than the non-CSR performers, the difference is not statistically significant. Thus, little support is found to show that companies with strong CSR perform better than the market or those companies with weaker CSR disclosure. Another research by Saleh et al. (2011) investigate the impact of CSR and CSR dimensions to financial performance among companies listed on the main board of Bursa Malaysia in 2000-2005. The findings reveal that CSR has a contemporaneous effect on financial performance, indicating that firms that practice CSR may benefit in terms of better financial performance (csrnetwork.com & Yeldar, 2004). Overall conclusion that can be made is that firms should pay attention to the act of sustainability since increasing awareness for SRI indicates that stakeholders believe there is positive correlation between sustainability commitments and better financial performance (McPeak & Tooley, 2008).

### **2.4.3 Financial performance and institutional investors' ownership**

Financial performance is an important determinant for institutional investors' decision making (Bushee & Goodman, 2007). Strong financial performance has been proven to lead the increase in firms' institutional shareholdings (Graves & Waddock, 1994), which signifies that institutional owners are attracted to firms with sound financial

performance. Therefore, it may be concluded that financial performance plays an important role in influencing institutional investors (Cox, et al., 2004).

In the case of ethical investors and conventional investors, the interest on financial returns while making investment decision does not differ between the two (McLachlan & Gardner, 2004; Michelson, et al., 2004), suggesting that even ethical investors prioritize financial performance when considering investing in a portfolio. This scenario signifies that although ethical investors value sustainability performance of a firm, financial performance is still their main concern (Matterson, 2000).

The situation where institutional investors prefer financial performance in their investment decision may be explained by the prudent-man laws on institutional equity investment (Del Guercio, 1996). Prudent-man law refers to the law established in the US with the purpose of protecting beneficiaries by allowing them to seek damages from a fiduciary who fails to invest in their best interests (Del Guercio, 1996). Therefore, in order to prevent actions from beneficiaries with regards to investment failure, investment managers will prioritize financial performance when making investment decisions, thus reducing the risk of losses and beneficiaries' actions.

#### **2.4.4 Indirect effect of financial performance on the relationship between sustainability reporting and institutional ownership**

Inconsistent relationship has been found between sustainability reporting and institutional ownership in previous studies (Graves & Waddock, 1994; Hoq, et al.,

2010; Mahoney & Roberts, 2007; Muniandy & Barnes, 2010; Petersen & Vredenburg, 2009; Saleh, et al., 2010; Teoh & Shiu, 1990). Baron and Kenny (1986) suggest that when the relationship between a predictor and a criterion variable is found inconsistent, this may be explained by the indirect effect of a moderator variable. A moderation effect is an effect that occurs when a third variable changes the relationship between two existing variables (Hair, et al., 2010), or in other words, a moderator variable is a variable that affects the strength and/or direction of the relationship between the independent and the dependent variable.

Previous studies justify that the engagement to sustainability activities may improve firms' financial performance (McPeak & Tooley, 2008; Orlitzky, et al., 2003; Saleh, et al., 2011; Tsoutsoura, 2004; Van de Velde, et al., 2005). Apart from that, past studies have also validate that institutional investors are attracted to firms with good financial performance (Bushee & Goodman, 2007; Cox, et al., 2004; Graves & Waddock, 1994; Matterson, 2000). Based on these two insights, this thesis hypothesizes that the inconsistencies found between sustainability reporting and institutional ownership in previous studies (Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Muniandy & Barnes, 2010; Petersen & Vredenburg, 2009; Saleh, et al., 2010; Teoh & Shiu, 1990) may be due to the moderating effect of financial performance, where institutional owners only considers for firms that have high level of engagement to sustainability, but at the same time, having good financial performance.

Limited evidence has been found in previous studies with regards to the indirect effect of financial performance on the relationship between sustainability reporting and

institutional ownership. The evidence on the indirect effect of financial performance has only been found by Wahba (2008), where financial performance indicates a moderating effect on the association between sustainability reporting and ownership by institutions. The findings from this research, which is done in the Egyptian market, however, is limited to environmental reporting, and does not cover the overall aspect of sustainability. Furthermore, institutional investors are treated as a monolithic group, and not separated by types of institutions, i.e., the dedicated and transient institutions, hence, paving the way for a second gap which is highlighted in this study.

## **2.5 Theories utilized in the current study**

This study applies two underpinning theories, i.e., Stakeholder Theory and the Myopic Institutions Theory. The discussion on each theory and their connection to the current study is elaborated in the sections below.

### **2.5.1 Stakeholder Theory**

The Stakeholder Theory posits that firms are not only responsible to their shareholders, but must address the needs of other parties that surround the firms' existence, or the stakeholders (Freeman, 1984). Stakeholders are defined as any group or individuals who are affected or may be affected by the activities of the organizations in achieving their objectives (Freeman, 1984), and may be categorized into two groups: the primary and secondary stakeholders (Clarkson, 1995). The



primary stakeholders refers to those whose continuing participation is absent will result in the firms' failure to survive as a going concern (Clarkson, 1995). In simpler words, there is a high level of interdependence between firms with this type of stakeholders, and lacking of such interdependence may result in the inability of the firms to survive. Primary stakeholders may be identified as the shareholders or investors, employees, customers, and suppliers, and the public stakeholder group, such as the governments and communities (Clarkson, 1995). On the other hand, secondary stakeholders are those who influence or who are influenced by the firms' activities, but are not essential for the firms' survival, and may be identified as the media or special interest groups (Clarkson, 1995).

The responsibility of firms to their various stakeholders may be explained by claims known as "explicit claims" and "implicit claims" (Cornell & Shapiro, 1987). Explicit claims refer to firms' policies that assume and articulate responsibility for some social interests (Matten & Moon, 2008). In other words, explicit claims relate to the contractual claims offered by firms to their non-investor stakeholders, which is precise in nature, such as product warranties and wage contracts (Cornell & Shapiro, 1987). On the other hand, implicit claims refer to the role of corporations to act within the values, norms and rules (Matten & Moon, 2008), which is inherent in nature, such as promises of continuing services and job securities to employees (Cornell & Shapiro, 1987), work safety, on-time delivery and product quality (Saleh, et al., 2011).

As the stakeholder theory posits that firms are responsible for the claims by their various stakeholders, several studies have been undertaken to examine the benefits

resulting from fulfilling the claims. For instance, shareholders are found to benefit financially when the management meets the demands of the various stakeholders (Ruf, Muralidhar, Brown, Janney, & Paul, 2001). Furthermore, as firms engage themselves with sustainability activities which address the importance of their various stakeholders, firms will create a trusting, trustworthy and cooperative behavior, not opportunistic behavior, and these behaviors will give the firms a competitive advantage, thus explaining why these firms may survive and often thrive (Jones, 1995).

From the above discussion, it may be concluded that the Stakeholder Theory posits that firms are obligated to fulfill the claims from their various stakeholders. By doing so, firms may create value by gaining competitive advantage which may assist the firms to act as going concern, experience financial improvement, and eventually, may have the ability to attract potential investors. The theory is used as the basis in this study, to predict the associations between sustainability reporting and institutional ownership, particularly the ownership by dedicated institutional investors, or the institutions with long-term investment horizon.

### **2.5.2 Myopic Institutions Theory**

The Myopic Institutions Theory posits that institutional owners are myopic or short-sighted when making investment decisions (Hansen & Hill, 1991). Myopic behavior refers to the actions where institutional owners prefer short-term profitability in making investment decision; as such, the myopic or short-sighted attitude will direct

the fund managers of the institutions to risk aversion and focus on achieving short-term profit from an investment (Hansen & Hill, 1991).

The myopic behavior of the institutional managers may be explained by several factors. Firstly, the institutional managers are under tremendous pressure from their superiors to perform (Hansen & Hill, 1991). Hence, institutional managers need to perform and to translate their actions into short-term financial performance. Secondly, besides responding to the pressures, institutional managers are forced to make corporate decisions while responding to their own desires for job security and advancement (Karake, 1998). The performance of institutional managers will be reviewed on annual or even quarterly basis, and the reward is based on these yearly or quarterly basis review (Graves & Waddock, 1994). Therefore, in order to secure their post and reputation, institutional managers tend to engage in short-term profit orientation decision making, thus, sheltering their post and reputation by achieving good performance from the short-run profitability.

Previous findings demonstrate that institutional investors are myopic, where institutional investors prefer firms which engage in sustainability commitments only when the financial performance is good (Wahba, 2008). Apart from that, negative associations have been found between institutional shareholdings and their investment on R&D, which return may only exist in the long-run (Graves, 1988). Although the findings by Graves and Waddock (1994) discounts the Myopic Institutions Theory as the result from their study indicates positive associations between sustainability engagement and ownership by institutions, it should be noted that the study by Graves and Waddock (1994) analyzes institutions as monolithic; therefore, positive

associations may have been found if the sampled firms had been dominated by dedicated institutions, such as pension funds. To strengthen the notion that some institutions practice myopic behavior, Cox and Wicks (2011) justify that institutional investors, such as the mutual fund managers, are found to be interested in market liquidity, and not sustainability commitments when making investment decisions, thus, providing another signal that these fund managers practice myopic behavior. In the developing market, Saleh et al. (2010) justify that the negative associations between community involvement and environmental dimensions and institutional ownership may be because institutional investors are heavily profit-oriented and focus more on short-term profits, while benefits from engagement in community and environmental dimensions, may not be directly achieved.

The Myopic Institutions Theory may also be used to predict the moderating effect of financial performance on the relationship between sustainability reporting and institutional ownership. Previous studies justify positive association between sustainability reporting and institutional ownership (Graves & Waddock, 1994; Hoq, et al., 2010; Petersen & Vredenburg, 2009; Saleh, et al., 2010). However, since institutions might tend to be myopic, concentrating on short-term performance when making investment decisions (Hansen & Hill, 1991), it is argued that the institutional investors, regardless of their investment behavior, may be inclined to invest in firms that engage in sustainability commitments, but possess good financial performance. Furthermore, previous studies justify that even ethical investors prioritize financial performance when considering investing in a portfolio (McLachlan & Gardner, 2004; Michelson, et al., 2004), signaling that although ethical investors value sustainability

performance of a firm, financial performance is still their main concern (Matterson, 2000).

From the above explanations, it may be concluded that the Myopic Institutions Theory posits that institutional investors may be short-sighted when making investment decisions; as such, they may direct their investments to focus on short-term profitability. In the current study, this theory is used as the base to postulate the associations between sustainability reporting and institutional ownership, particularly the ownership by transient institutional investors, as transient or short-term investors are predicted to have myopic behavior which concentrates on profitability. Therefore, the benefits of sustainability commitments of potential portfolio, which may only be realized in long-run may not be a concern when making investment decision. Furthermore, this theory is also used as the foundation to suggest the positive moderating effect of financial performance on the association between sustainability reporting and institutional ownership, or in other words, institutional investors might only consider investing in a sustainability performing firms when the financial performance is high.

## **2.6 Chapter summary**

This chapter discusses the available literature related to sustainability reporting in previous studies. The discussion starts with the definition for sustainability and the development of sustainability reporting research in Malaysia. The conclusion that can be made is that sustainability reporting in Malaysia is lagging behind developed

countries, but there are signs of improvement. Furthermore, the government plays a very important role in shaping sustainability engagement among Malaysian firms.

The summary of literature is followed by the discussions on institutional investors. Institutional investors play a significant role in the ownership structure, whether in developed or developing countries. As the institutional investors may exert potential benefits, such as in the act of monitoring and mitigating earnings management, attracting institutional investors to invest in the firms' shareholdings should be taken as the main agenda. In Malaysia, the market for institutional investors is highly influenced by the government. Besides the government-related institutions, or the GLICs, private-related institutions also play a major part in shaping the ownership structure of the Malaysian firms, particularly the unit trust and mutual funds and also the financial institutions and insurance companies.

Prior research has established the relationship between sustainability reporting and institutional ownership, where sustainability reporting has been proven to assert positive influence on institutional ownership. However, the effect of sustainability performance on institutional ownership may be further explained according to the institutions' investment horizons, where dedicated investors prefer sustainability commitments by potential portfolio firms in making investment decision, which is contrary to transient investors. This scenario has widened the gap in the literature, and this study intends to fill the gap by analyzing the different types of investors according to their investment horizons with respect to their preference for sustainability reporting when making investment decisions, in a developing market.

Prior research also established the point that sustainability reporting may influence financial performance, which in turn may exert influence on institutional owners. The inconsistencies from previous research have also revealed another gap, where there may be a moderation impact of financial performance on the relationship between sustainability reporting and institutional owners.

The final part of this chapter discusses the underpinning theories in predicting the associations, which are the Stakeholder Theory and the Myopic Institutions Theory. The next chapter deals with the theoretical framework and the development of hypotheses.

## **CHAPTER 3 : THEORETICAL FRAMEWORK AND DEVELOPMENT OF HYPOTHESES**

### **3.1 Introduction**

In this chapter, the discussion on the theoretical framework and development of hypotheses are elaborated in section 3.2. The framework focuses on the theoretical explanation for the relationship between sustainability reporting and aggregate institutional ownership, and the different types of institutional investors, namely the dedicated and transient institutions. The framework also provides explanation for the moderating effect of financial performance on the relationship between the observed variables.

The discussion in section 3.3 continues on the preliminary studies done in relation to this thesis. Two preliminary studies are conducted, where the first attempts to distinguish major institutional investors in the Malaysian market. The second preliminary study deals with the development of instrument for the purpose of collecting the data for the main independent variable, i.e., sustainability reporting.

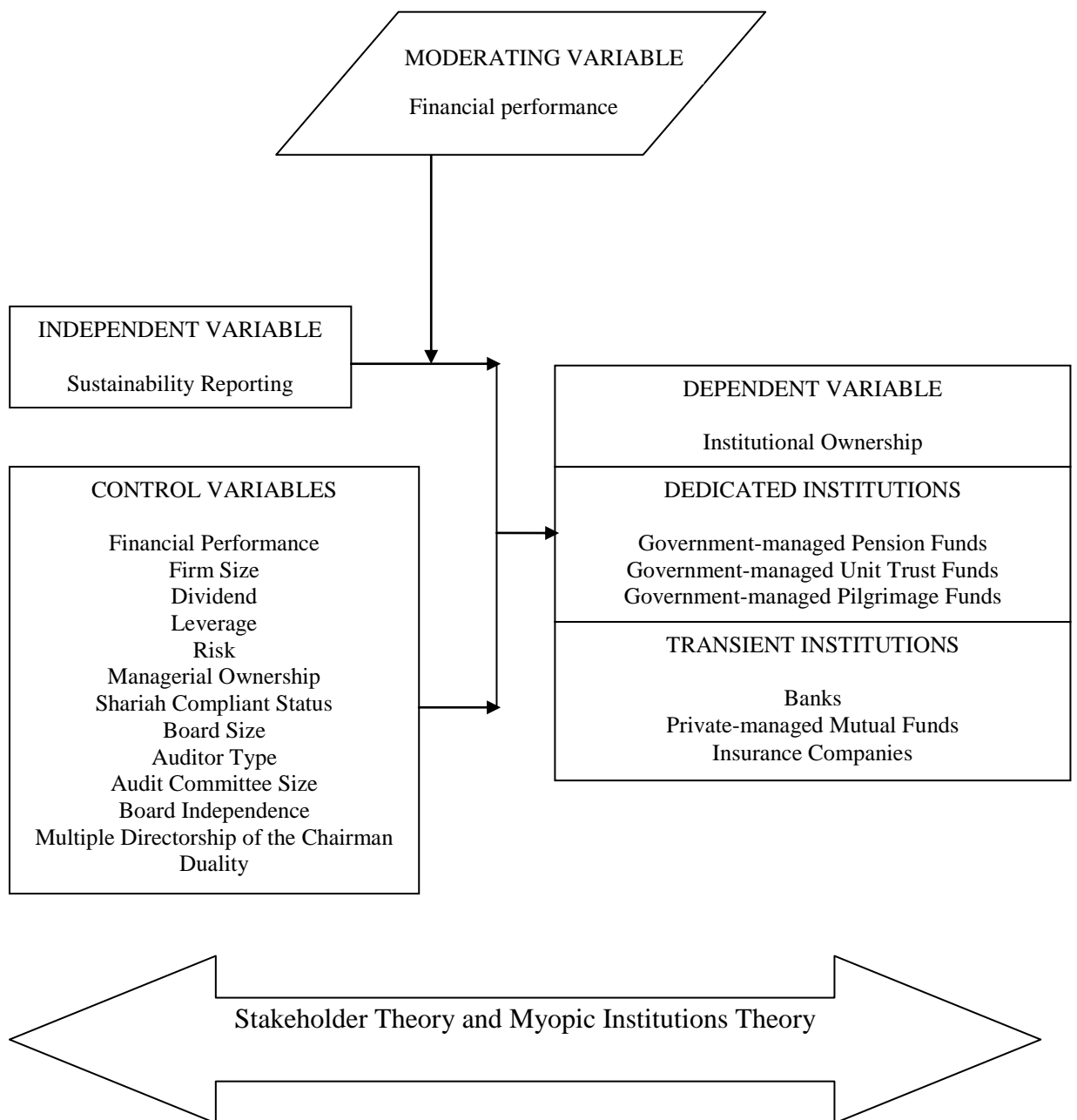
In addition, the development of hypotheses in section 3.4 discusses the propositions made on the effect of sustainability reporting on the ownership by aggregate, dedicated and transient institutional investors. This is followed by the hypotheses development on the moderating effect of financial performance on the relationship



between sustainability reporting and institutional ownership. Each hypothesis is based on the underpinning theories and past research findings.

### 3.2 Theoretical framework

Figure 1: Research Theoretical Framework



As explained earlier, the objective of this study is twofold: (1) to examine if the effect of sustainability reporting on institutional ownership is different between dedicated and transient institutional ownership; and (2) to examine if financial performance exerts moderating impact on the relationship between sustainability reporting and aggregate, dedicated and transient institutional ownership.

The first part of this study focuses on whether sustainability reporting exerts impact on the share ownership by institutions. According to Cornell and Shapiro (1987), firms that engage in sustainability commitments and activities are seen to be fulfilling the explicit and implicit claims of their various stakeholders. The Stakeholder Theory posits that firms that consider both claims may increase their value. Furthermore, as firms engage in sustainability activities which address the importance of their various stakeholders, firms will create trusting, trustworthy and cooperative behavior, not opportunistic behavior, and these behaviors will give the firms a competitive advantage, thus explaining why these firms may survive and often thrive (Jones, 1995). Due to the benefits of engagement in sustainability commitments, these firms may be able to attract investors (Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Saleh, et al., 2010).

The Myopic Institutions Theory, on the other hand, posits that institutional owners tend to be myopic or short-sighted when making investment decisions (Hansen & Hill, 1991). Thus, institutional investors may tend to be attracted only to the short-term profits that may be generated from an investment. As the benefits arising from engagement in sustainability commitments may only be materialized in the long-run, the engagement in such commitments may not be a concern for institutional owners

with myopic behavior. Apart from that, previous findings justify that several institutions, such as mutual funds, indicate less concern for social responsibility, and show more concern for market liquidity (Cox & Wicks, 2011). This provides another signal that directs fund managers to practice myopic behavior. Furthermore, Saleh et al. (2010) reveal that the negative associations between community involvement and environmental dimensions and institutional ownership may be due to the behavior of institutional investors that are heavily profit-oriented and focus more on short-term profit, since benefits from engagement in community and environmental dimensions may not be directly achieved.

Therefore, based on these two underpinning theories, this study examines if the preference for sustainability commitments is different according to different types of institutional investors, namely the dedicated and the transient institutional investors. The former, with long-term investment horizon, are predicted to favor sustainability commitments and reporting in their investment decisions as suggested by the Stakeholder Theory; while the latter, with short-term investment horizon, may not consider sustainability reporting in investment decisions, as suggested by the Myopic Institutions Theory.

The second part of this study is on whether the investment decision based on sustainability reporting by institutional investors is moderated by financial performance. Based on the Myopic Institutions Theory, where institutions tend to be myopic or short-sighted when making investment decisions (Hansen & Hill, 1991), the moderating effect of financial performance on the relationship between sustainability reporting and institutional ownership is examined.

Previous studies justify that institutional investors are attracted to firms that commit to sustainability agendas (Graves & Waddock, 1994; Hoq, et al., 2010; Petersen & Vredenburg, 2009; Saleh, et al., 2010). Furthermore, previous studies also substantiate that firms that engage in sustainability commitments may create improvement in firm performance (Mahoney & Roberts, 2007; McPeak & Tooley, 2008; Tsoutsoura, 2004; Van de Velde, et al., 2005). Moreover, financial performance has been proven to be an important factor for investors when making investment decision (Bushee & Goodman, 2007; Cox, et al., 2004; Graves & Waddock, 1994; Matterson, 2000; McLachlan & Gardner, 2004; Michelson, et al., 2004), even for ethical investors (McLachlan & Gardner, 2004; Michelson, et al., 2004). Based on these notions, this thesis tries to examine if financial performance moderates the relationship between sustainability reporting and institutional ownership.

Despite sustainability reporting having positive impact on the share ownership by aggregate and dedicated institutional investors, the Myopic Institutions Theory suggests that myopic behavior may be observed in institutional investors as they may prefer firms that are involved in sustainability agenda, and having at the same time, good financial performance (Wahba, 2008). As for the transient institutions, although previous studies justify that transient institutions do not consider sustainability commitments by potential firms in their investment decision making (Cox, et al., 2004; Cox & Wicks, 2011; Johnson & Greening, 1999), a positive moderating impact of financial performance might be observed as transient institutions are focused on earning short-term interest, as they come under tremendous pressure to perform (Hansen & Hill, 1991), and their job security depends on the short-term financial indicators (Graves & Waddock, 1994; Karake, 1998). Thus, they may scrutinize firms

that engage in sustainability commitments, and at the same time, have good financial performance. The justification on the positive moderating effect may also be explained by the fact that even though ethical investors value potential firms' sustainability performance, financial performance is still the main concern (Mattersson, 2000). Furthermore, previous studies justify that the financial returns matter to both ethical and conventional investors, when making investment decisions (McLachlan & Gardner, 2004; Michelson, et al., 2004), thereby validating the myopic behavior of institutional investors.

### **3.3 Preliminary studies**

Two preliminary studies are conducted in this study. The objective of the first preliminary study is to determine the types of institutional investors in the ownership structure of Bursa Malaysia listed firms. The second preliminary study intends to determine the themes and dimensions of sustainability reporting by Bursa Malaysia listed firms. The details of both studies are discussed below:

#### **3.3.1 Determining the institutional investors' types**

The first preliminary study is conducted with the purpose of determining the types of institutional investors in the ownership structure of Bursa Malaysia listed firms. A total of 100 companies are picked at random from the population of Bursa Malaysia

listed firms as at 31<sup>st</sup> December 2008. From each annual report of the sampled firms, the list of “Thirty Largest Shareholders” is extracted.

In determining the types of institutional investors, the definition by Lang and McNichols (1997) and Hsu and Koh (2005) is applied. Lang and McNichols (1997) define institutional investors as large investors, other than natural persons, who exercise discretion over the investment of others, while Hsu and Koh (2005) provide a more detailed definition, where institutional investors comprise insurance companies (life and non-life), superannuation and pension funds, investment trusts (including unit trust), financial institutions (including banks and bank nominee companies, finance companies, building societies and credit cooperatives), investment companies, and other nominee companies associated with the above categories of institutions. However, with regards to the nominee companies, only those representing institutions, such as pension funds, pilgrimage funds or mutual funds are considered, whereby the holdings are placed under the institutions which the nominee companies represent. As this study concentrates on institutional shareholdings, the nominee companies which represent individuals or where the beneficiary is not stated are removed from the computation of institutional ownership.

The result of the preliminary study is presented in Table 3-1. As revealed in the results, the largest institutions that hold the ownership structure in Malaysian listed companies’ market for institutional investors are the unit trust and mutual funds. From the results, these types of institutions hold a mean of 43.60% of institutional shareholdings in the sampled firms, where the government-managed unit trust fund, the PNB, dominates the holdings with the mean of 19.96%, followed by private-

managed foreign unit trust and mutual funds with 16.8%. Private-managed local unit trust and mutual funds hold 6.58%.

Table 3-1: Preliminary study results – institutional investors’ types and shareholdings

Institutional Ownership Types	Mean by Type (%)	Description	Shareholdings (Mean in %)
Pension Funds	26.01	Government-managed – EPF	16.83
		Government-managed – KWAP	3.05
		Government-managed – LTAT	4.38
		Private managed	1.75
Unit Trust and Mutual Funds	43.60	Government-managed – PNB	19.96
		Government-managed – Others	0.26
		Private managed – Foreign	16.80
		Private managed – Local	6.58
Pilgrimage funds	12.38	Government-managed – LTH	12.38
Banks	35.03	Private managed – Foreign	26.05
		Private managed – Local	8.98
Insurance Companies	6.29	Private managed – Foreign	3.39
		Private managed – Local	2.90
Other Institutions	35.49	Government – Federal	15.49
		Government – State	14.36
		Government – Foreign	0.70
		Charity	0.04
		Hedge Funds	1.97
		Cooperative	1.74
		Endowment	0.03
		Foundation	1.16
<b>TOTAL</b>	<b>158.80</b>		<b>158.80</b>
Definition: EPF: Employees Provident Funds; KWAP: Kumpulan Wang Amanah Pencen (Retirement Fund Incorporated); LTAT: Lembaga Tabung Angkatan Tentera (Armed Forces Fund Board); PNB: Permodalan Nasional Berhad; LTH: Lembaga Tabung Haji			

The second largest institutional investors are the banks, which hold the mean of 35.03%, where foreign banks hold the mean of 26.5% in the 100 sampled firms, and local banks with the mean holding of 8.98%. This is followed by the pension funds

with 26.01%, where the government-managed pension fund, EPF, holds the largest shareholdings, with 16.83%. By separate institutions, the government-controlled unit trust, the PNB, holds the highest shareholdings among all the institutions, with 19.9.6%, followed by EPF with 16.83% holdings.

Besides the largest institutions, namely the pension funds, the banks and the unit trust and mutual funds, the market for institutional investors in Bursa Malaysia listed firms as at 31<sup>st</sup> December 2008 is also highly held by institutions such as insurance companies and the government-managed pilgrimage funds (LTH). Other institutions, which are held by governments or private institutions, such as foundations, charities and cooperatives do exist, but hold insignificant amounts of shareholdings.

From the preliminary study results, it is determined that the pension funds, the unit trust and mutual funds, the banks, the pilgrimage funds and the insurance companies hold high percentage of ownership collectively in the sampled firms. As such, these types of institutions are selected to be examined in the subsequent chapters of this thesis.

### **3.3.2 Determining the sustainability reporting themes and dimensions**

The objective of the second preliminary study is to identify the themes and dimensions of sustainability reporting by Malaysian listed firms. A total of 54 firms are picked at random from the population of Bursa Malaysia listed firms as at 31<sup>st</sup> December 2009. Content analysis, which refers to the technique with the purpose of



making replicable and valid references from data to their contexts (Krippendorff, 1980) is performed on the annual reports of the sampled firms to accumulate the data for sustainability reporting. This technique is commonly done on the written documents, particularly the documents which are historical in nature (Myers, 2009), and largely used in previous sustainability research (Al-Tuwaijri, Christensen, & Hughes, 2004; Amran & Devi, 2008; Aras & Crowther, 2008; Haron, et al., 2006; Janggu, et al., 2007; Milne & Adler, 1999; Nik Ahmad, et al., 2003; Said, et al., 2009; Saleh, et al., 2010, 2011; Thompson & Zakaria, 2004).

Bursa Malaysia's CSR Framework for Malaysian PLCs (Bursa Malaysia, 2006) suggests that the reporting for sustainability engagement be based on four focal areas, i.e., the environment, the workplace, the marketplace and the community. The objective of this preliminary study is to gauge the various dimensions of sustainability reporting belonging to each theme, as reported by the sampled firms. The method of sentences count is used in this preliminary study, as this method provides a more sound basis of measurement compared to word and pages count (Milne & Adler, 1999).

The results from the preliminary study reveal that Bursa Malaysia listed firms report their sustainability commitments in various sections of the annual report. Thirty four firms report their sustainability engagement in the "Corporate Social Responsibility" or "Sustainability Report" section, while the remaining twenty firms report their sustainability engagement in "Corporate Governance Statement", "Chairman's Statement", "Operations Review", and "Calendar of Events".

In terms of the themes and dimensions of sustainability reporting by the sampled firms, the details are presented in Table 3-2 . The results depict that among the four focal themes, Malaysian listed firms tend to engage more on sustainability activities that relate to the workplace theme and the community theme. These findings are consistent to previous research, where firms emphasize human-related themes, which comprise these two focal themes (Bursa Malaysia, 2008b; Haron, et al., 2006; Janggu, et al., 2007; Nik Ahmad, et al., 2003; Saleh, et al., 2010; Thompson & Zakaria, 2004).

Each theme is then further examined to determine the dimensions which contribute to the score of the focal areas. The details of the dimensions for each theme are listed in Table 3-2. For environment theme, the environmental conservation, campaign and committees have the highest score, while for workplace theme, firms stress more on training and education and organizational safety and health (OSH) dimensions. For the marketplace theme, product and service quality and compliance dimension is prioritized, while in community theme, emphasis is more on the voluntary activities, donations and charity dimensions.

The dimensions found from the results of the preliminary study are then compared to the dimensions used in previous sustainability research in the Malaysian setting (Amran & Devi, 2007; Bursa Malaysia, 2008b; Janggu, et al., 2007; Nik Ahmad, et al., 2003; Saleh, et al., 2010). Thus, by combining the results from the preliminary study and the previous sustainability research, a more robust instrument for the data collection is developed. Appendix A lists the various dimensions according to the four themes which are captured from the results of the preliminary study, combined with dimensions used in previous research, which are utilized in this thesis. The list in the

Appendix A has been used to measure sustainability in a recent Malaysian setting sustainability reporting research (Abd-Mutalib, et al., 2013).

Table 3-2: Preliminary study results – sustainability reporting themes and dimensions

	Number of sentences		
	Sum	Mean	SD
<b>ENVIRONMENT THEME</b>			
Waste Disposal and Pollution Control	35	0.65	1.63
Reusing and Recycling	40	0.74	1.34
Effective Usage of Energy and Resources	67	1.24	2.89
Environmental Conservation, Campaign and Committees	83	1.54	4.21
Research and Development	10	0.19	0.78
Compliance and Crisis Response	21	0.39	1.28
General Statement	41	0.76	1.45
<b>TOTAL</b>	<b>297</b>	<b>5.5</b>	<b>8.19</b>
<b>WORKPLACE THEME</b>			
Training and Education	120	2.22	4.34
Employee Welfare and Benefits	101	1.87	4.55
Employee Development and Recognition	11	0.20	1.12
Employee Freedom of Voice and no Discrimination	19	0.35	0.91
OSH, Compliance and Awards Achievement	121	2.24	3.88
General Statement	49	0.91	2.44
<b>TOTAL</b>	<b>421</b>	<b>7.80</b>	<b>11.49</b>
<b>MARKETPLACE THEME</b>			
Product Safety	10	0.19	0.70
Product, Service Quality and Compliance	91	1.69	5.04
Customer, Supplier Feedback and Information Dissemination	58	1.07	3.66
Training and Education	4	0.07	0.38
General Statement	31	0.57	1.41
<b>TOTAL</b>	<b>194</b>	<b>3.59</b>	<b>8.74</b>
<b>COMMUNITY THEME</b>			
Job Opportunity	13	0.24	0.89
Training and Education	89	1.65	3.10
Voluntary Activities, Donations and Charities	321	5.94	9.98
Sports and Cultural Activities	35	0.65	1.60
General Statement	59	1.09	1.64
<b>TOTAL</b>	<b>517</b>	<b>9.57</b>	<b>12.14</b>

### **3.4 Development of hypotheses**

As mentioned in the previous section, the objectives of this study are twofold: (1) to examine if the effect of sustainability reporting on institutional ownership is different between dedicated and transient institutional ownership; and (2) to examine if financial performance exerts moderating impact on the relationship between sustainability reporting and aggregate, dedicated and transient institutional ownership.

Based on the abovementioned objectives, this section highlights the hypotheses developed in relation to the research objectives. The discussion on the hypotheses development is based on the underpinning theories used, and supported by the empirical evidence found in previous literature.

#### **3.4.1 Sustainability reporting and institutional ownership**

The Stakeholder Theory posits that firms which address the claims of the stakeholders, in the long-run may create value (Freeman, 1984). Therefore, these firms have the ability to attract institutional investors. Previous studies justify the ability of sustainability reporting to attract investment from institutional owners (Graves & Waddock, 1994; Hoq, et al., 2010; Petersen & Vredenburg, 2009; Saleh, et al., 2010). It is therefore hypothesized that:

H<sub>1</sub>: Sustainability reporting exerts significant positive impact on aggregate institutional ownership.

### **3.4.2 Sustainability reporting, dedicated and transient institutional investors**

The “stakeholder” concept emphasizes that the roles and responsibility of corporate bodies are not limited to maximizing the wealth of the shareholders, but also to fulfill the needs of the non-shareholders surrounding the business existence (Mitchell, Agle, & Wood, 1997). When firms engage in sustainability commitments, they are seen as fulfilling the non-shareholders’ or the stakeholders’ claims and expectations. The Stakeholder Theory explains that firms which address the claims of the stakeholders, in the long-run will create value (Freeman, 1984), which can be seen not only in the improved financial performance (Amran & Devi, 2008; Mahoney & Roberts, 2007; McGuire, et al., 1988; McPeak & Tooley, 2008; Saleh, et al., 2011; Tsoutsoura, 2004), but also in other benefits, such as enhancing brand image, building reputation and increasing sales and customer loyalty (csrnetwork.com & Yeldar, 2004). With all these benefits that might arise from engagement in sustainability, it is not surprising that previous studies find positive association between sustainability reporting and institutional investors (Cox, et al., 2004; Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Saleh, et al., 2010).

The benefits from engagement in sustainability commitments are commonly referred to as long-term benefits (Branco & Rodrigues, 2006). For instance, when a firm purchases environmentally friendly equipment, or engages in health and safety programs for employees, these activities are indeed incurring costs, yet, the benefits from these activities may not have an immediate pay-off. The benefits may only be realized after a period of time, such as through waste reduction from the environmentally friendly equipment, or low employee turnover and increase in

production resulting from the health and safety programs for employees. As such, firms that engage in sustainability commitments can be expected to attract long-term or dedicated institutional investors who have the ability to wait for their investment to pay-off (Cox, et al., 2004; Cox & Wicks, 2011). Based on the above underpinning theories and previous literature, it is hypothesized that:

H<sub>1a</sub>: Sustainability reporting exerts significant positive impact on dedicated institutional ownership.

Although the Stakeholder Theory posits that firms that engage in sustainability commitments may create value, which may attract institutional investors, the Myopic Institutions Theory suggests that institutional owners tend to be myopic or short-sighted when making investment decisions (Hansen & Hill, 1991). This is due to the situation where managers may face tremendous pressure to earn short-term profit and to maintain their reputation and job security, since earning short-term profit may be an indicator of their job performance. Therefore, contrary to long-term institutional investors, short-term institutional investors, who are most concerned with short-term profit, may not consider sustainability reporting when making investment decision, as evidenced in previous studies (Cox, et al., 2004; Cox & Wicks, 2011). Based on the above underpinning theory and previous literature, it is hypothesized that:

H<sub>1b</sub>: The impact of sustainability reporting on transient institutional ownership is weaker than its impact on dedicated institutional ownership.

### **3.4.3 Sustainability reporting and specific types of dedicated institutions**

In the following sub-section, details on the hypotheses development to ascertain the association between sustainability reporting and specific dedicated institutions are discussed.

#### **3.4.3.1 Government-managed pension funds**

Government-managed pension funds in Malaysia comprise three main pension fund institutions, namely the EPF, KWAP and LTAT. These institutions are grouped under the GLICs, where these types of institutions allocate some of their funds for investment in GLCs and other non-GLCs portfolios..

Pension and provident funds collect, pool and invest funds contributed by sponsors and beneficiaries to provide for retirement income of beneficiaries (Davis, 2002). As such, the pension and provident funds typically have a long investment horizon and will hold share ownerships in firms for long periods (Ryan & Schneider, 2002). This is the result of a long investment period before any pension benefits can be received by the contributors (Copeland, et al., 2005). Therefore, pension fund managers will not be pressured for immediate returns (Hoskisson, et al., 2002). Furthermore, pension fund managers are generally salaried employees; hence they are not tied to the short-term performance of the fund, such as that faced by investment managers (Hoskisson, et al., 2002; Johnson & Greening, 1999).

As pension and provident funds are associated with long-term investment horizons, they are often faced with pressures to invest in accordance to non-financial objectives, particularly in socially responsible firms (Davis, 2002), which benefits are paid-off in the long-term period. This situation is evident in Malaysia, as two of the government-managed provident and pension funds, namely the EPF and KWAP, face regulatory instructions to consider favorably firms with good sustainability practices in their investment decisions (Ministry of Finance, 2006). Furthermore, EPF, KWAP and LTAT are grouped under the GLICs; thus, their investment behavior may be influenced by their positive perception towards social responsibility, thus projects the Government's commitment in promoting sustainability.

Since pension funds have a long investment horizon, and strengthened by the regulatory expectations to invest in responsible firms, hence, it is expected that sustainability reporting will have a positive impact on the ownership by pension funds. Furthermore, previous studies have found a positive association between sustainability reporting and the share ownership by pension funds (Cox, et al., 2004; Cox & Wicks, 2011). Based on these justifications, it is hypothesized that:

H<sub>1a1</sub>: Sustainability reporting exerts significant positive impact on the ownership of government-managed pension funds.



### **3.4.3.2 Government-managed unit trust funds**

Government-managed unit trust fund in Malaysia is under the management of PNB. PNB was established as an instrument for the NEP, the objective being to promote share ownership in the corporate sector among the Bumiputera. As such, various funds administered by Amanah Saham Nasional Berhad, the UTMC that acts on behalf of PNB, have been established. Although previous studies identify unit trust funds as having short-term investment horizons (Cox, et al., 2004; Cox & Wicks, 2011), however, PNB dictates its investment philosophy as “..... *adopted strategies which reflect our trademark policy of "prudent dynamism", one which places emphasis on fundamentals and long-term investment horizon.....*” (www.pnb.com.my). Furthermore, PNB is grouped under the GLICs; thus, its investment behavior is influenced by the positive perception towards social responsibility. As such, the next hypothesis is:

H<sub>1a2</sub>: Sustainability reporting exerts significant positive impact on the ownership of government-managed unit trust funds.

### **3.4.3.3 Government-managed pilgrimage funds**

The pilgrimage funds in Malaysia are managed by one of the major institutions known as LTH. The objective of the pilgrimage funds is to provide the means of savings for the future pilgrims. In addition, LTH provides excellent pilgrimage management services and strengthens the economy of the depositors by making

strategic investments in accordance to Shariah ([www.tabunghaji.gov.my](http://www.tabunghaji.gov.my)), which also is in fulfillment of societal obligations for its depositors.

With regards to the investment horizon of LTH, previous studies show that institutions involved in societal obligations, such as foundations and charities, have dedicated behavior in investment decision making (Cox, et al., 2004). Furthermore, LTH is influenced by Shariah law, and previous studies suggest that Islamic firms and organizations undertake social responsibility and full disclosure (Baydoun & Willett, 2000). In addition, as one of the GLICs, LTH is subjected to upholding social responsibility. Thus, the following is hypothesized:

H<sub>1a3</sub>: Sustainability reporting exerts significant positive impact on the ownership of government-managed pilgrimage funds.

#### **3.4.4 Sustainability reporting and specific types of transient institutions**

In the following sub-section, details on the hypotheses development to ascertain the association between sustainability reporting and specific transient institutions are discussed.

#### **3.4.4.1 Banks**

Banks are the type of institutions which have been identified as having short-term investment horizon (Zahra, 1996). This is due to the situation where bank managers' performance is evaluated yearly or quarterly (Chaganti & Damanpour, 1991; Zahra, 1996); therefore, the financial performance of the banks may become one of the variables for performance evaluation. In this case, bank managers may become myopic and make financial performance as the priority when making investment decisions. This is supported by the situation where banks, mutual funds and insurance companies are mostly under the same corporate control; therefore, they are subjected to peer group benchmarks, which might shorten their investment horizon to avoid underperformance (Cox & Wicks, 2011), leading to the next hypothesis:

H<sub>1b1</sub>: The impact of sustainability reporting on the ownership of banks is weaker than its impact on the ownership of dedicated institutions.

#### **3.4.4.2 Private-managed mutual funds**

Private-managed mutual funds are categorized as funds with short-term investment horizon due to several reasons. Firstly, many UTMCs in Malaysia have a close connection with and are under the corporate control of banks. As close relations exist between private-managed unit trust and mutual funds with the banking sectors, it is not surprising if they indicate a short-term investment horizon, which may be due to peer group benchmark, which forces them to concentrate on profit making in their

daily operations (Cox & Wicks, 2011). Secondly, unit trust and mutual funds can be redeemed by the investors by selling them back to the fund on any business day (Cox & Wicks, 2011), which indicates that the period of possession by the investors may be on a short-term basis. Thirdly, the investors of mutual funds may also switch from one fund to another in the same fund family. In order to meet the redemption and switching of funds by the investors in mutual funds, managers must have the cash sufficiency; therefore, unit trust and mutual fund managers prefer liquidity, and not social responsibility (Cox & Wicks, 2011).

The Myopic Institutions Theory (Hansen & Hill, 1991) suggests that institutional investors are short-sighted when making investment decisions, and may prioritize financial performance as the main factor in making investment decision. The ability of unit trust and mutual fund managers to maintain their position is determined by their performance and also the managers' portfolio choices (Chevalier & Ellison, 1999). Apart from performance and the choices of portfolio, managers are also faced with punishment if their actions deviate from other managers (Chevalier & Ellison, 1999). To maintain their positions, unit trust and mutual fund managers are pressured to present persistent short-run performance (Du, et al., 2009). Hence, social responsibility factors are not the factors that are considered as the benefits from these activities may only be incurred over the long horizon. The non-associations of sustainability reporting and ownership by unit trust and mutual funds have also been made evident in previous research (Cox, et al., 2004; Cox & Wicks, 2011). Hence, based on these justifications, the hypothesis developed is:

H<sub>1b2</sub>: The impact of sustainability reporting on the ownership of private-managed mutual funds is weaker than its impact on the ownership of dedicated institutions.

#### **3.4.4.3 Insurance companies**

The insurance sector in Malaysia is conducted by a dual operating system, namely the conventional and takaful systems, which provide coverage services, whether in the form of life insurance or general insurance. As the assets of insurance sector have been showing an escalating trend (Bank Negara Malaysia, 2010), it will be interesting to know if the assets which are based on the funds accumulated from the policy holders, are being invested in socially responsible firms.

Previous research however, found insurance companies to be associated with short-term investment horizon, which may be justified by two main characteristics. Firstly, many insurance companies act as a division and under the corporate control of banks, which makes them prone to be under pressure from consistent peer group benchmark. As such, the competition and the need to perform well may shorten the investment time horizon, as the need for commercial profit increases to avoid underperformance compared to other divisions (Cox & Wicks, 2011). Secondly, previous research also justify that life insurance companies share the same characteristics as mutual funds when making investment decision, where they tend to prioritize the liquidity factor in the potential portfolio (Cox & Wicks, 2011), leading to short-term investment orientation. Apart from that, Cox and Wicks (2011) also acknowledge that life insurance funds mark social responsibility as the third factor to be considered in

making investment decision after the consideration for liquidity and risks and returns (portfolio theory). Furthermore, among four determinants of social responsibility, i.e., non-financial news, health and safety, equal opportunities and environment, life insurance funds only indicate an association with non-financial news, while the other three indicators reveal no association (Cox & Wicks, 2011). Hence, based on these justifications, the hypothesis built is:

H<sub>1b3</sub>: The impact of sustainability reporting on the ownership of insurance companies is weaker than its impact on the ownership of dedicated institutions.

### **3.4.5 Moderating effect of financial performance on the relationship between sustainability reporting and institutional ownership**

The Myopic Institutions Theory suggests that in making investment decisions, institutional investors tend to be myopic, where they are more concerned with short-term profitability (Hansen & Hill, 1991). As past research show that the association between sustainability reporting and institutional ownership has been inconsistent (Cox, et al., 2004; Cox & Wicks, 2011; Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Muniandy & Barnes, 2010; Petersen & Vredenburg, 2009; Saleh, et al., 2010; Teoh & Shiu, 1990), it is interesting to gauge if the inconsistency is due to the moderation effect, as moderator variables are typically introduced when there is a weak or inconsistent relationship between a predictor and a criterion variable (Baron & Kenny, 1986).

Previous studies explain that firms that address sustainability commitments show positive signs of good financial performance (Gardiner & Lacy, 2003; Mahoney & Roberts, 2007; McGuire, et al., 1988; McPeak & Tooley, 2008; Saleh, et al., 2011; Tsoutsoura, 2004), which is consistent with the premise of the Stakeholder Theory, where firms that fulfill the needs of their various stakeholders may create value (Freeman, 1984). Furthermore, good financial performance is an important factor for institutional ownership (Bushee & Goodman, 2007), as evidenced by the “prudent-man rule”, where institutional investors are more likely to invest in firms with high performance (Del Guercio, 1996). Thus, this study posits that although institutional investors are seen to favor sustainability engagement of the potential firms, their myopic behavior might direct institutional investors to prefer firms that engage in sustainability commitments, but at the same time, possess good financial performance, as good financial performance indicates high level of returns from the particular portfolio. Therefore, it is hypothesized that:

H<sub>2</sub>: The positive association between sustainability reporting and aggregate institutional ownership is stronger for firms with high financial performance.

H<sub>2a</sub>: The positive association between sustainability reporting and aggregate dedicated institutional ownership is stronger for firms with high financial performance.

H<sub>2b</sub>: The association between sustainability reporting and aggregate transient institutional ownership is stronger for firms with high financial performance.

### **3.5 Chapter summary**

This chapter highlights the theoretical framework for this study, which is bound by the Stakeholder and the Myopic Institutions theories. Both theories are used to predict the associations that may exist between sustainability reporting and institutional ownership, and also to predict the associations between sustainability reporting and different types of institutional investors according to their investment horizons, be it dedicated or transient institutional investors. Furthermore, the Myopic Institutions Theory is once more utilized to anticipate the moderating effect of financial performance on the relationship between sustainability reporting and different types of institutional ownerships.

In the hypotheses development section, several hypotheses are generated to answer the study's research questions. In summary, it is hypothesized that sustainability reporting exerts positive impacts on ownership by aggregate and dedicated institutions, while no significant impact is predicted on the relationship between sustainability reporting and the ownership by transient institutions. Furthermore, financial performance is hypothesized to exert moderating effect on all types of institutional ownership.



## **CHAPTER 4 : RESEARCH DESIGN AND METHODOLOGY**

### **4.1 Introduction**

This chapter outlines the research design and methodology, which includes the procedures in developing and conducting the research. The discussion in this chapter is divided into six sections. Section 4.2 discusses the design of the study, followed by the description of the population and sampling procedures in section 4.3. In section 4.4, the definition and measurement of the variables are explained, while in section 4.5, the discussion revolves mainly on the procedures for data analysis and interpretation. Section 4.6 provides concluding remarks.

### **4.2 Research design**

The data for this study is based on secondary data, obtained from four sources: (1) the annual reports and sustainability reports of firms listed on Bursa Malaysia for the year 2010; and (2) for the year 2011; (3) the Datastream; and (4) the website of Securities Commission Malaysia. The annual reports and sustainability reports for the years 2010 and 2011 are chosen for this study as these years mark the four to five year duration of experience in disclosing sustainability activities by the sampled firms. As such, it may be assumed that firms have been exposed to CSR reporting and have the reporting experience, and at the same time the data may be more current compared to previous studies.

As this study concentrates on the impact of sustainability reporting, the method of one year lag in the measurements of sustainability reporting and contemporaneous data for institutional ownership is used. For example, the sustainability reporting data is based on the reporting in the annual reports of the year 2010, while institutional ownership utilizes the data in the year 2011. This method is used to analyze the effect of sustainability reporting in the current annual reports on institutions' investment decisions in the following year. This has been used in previous research concerning the consequences of sustainability reporting on institutional ownership (Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Saleh, et al., 2010).

#### **4.3 Population and sample**

The population for this study is the active firms listed on Bursa Malaysia for the year 2010 and continue to fulfill the principle of going concern in the year 2011, and have the financial year end as at 31<sup>st</sup> December in both years. According to the data generated from the Datastream, a total of 950 firms are identified as active firms in the year 2010 and continue to be active in the year 2011. Of the 950 firms, 538 are identified as having the financial year end as at 31<sup>st</sup> December 2010 and 2011, which contributes to more than 50% of the total firms that are active in both years. By selecting the firms with financial year end of 31<sup>st</sup> December, the study may capture sustainability commitments by those firms in a consistent manner. For instance, firms may participate in external sustainability activities initiated by Non-Government Organizations (NGOs); or firms nominated or won several sustainability awards in the current year; and these information will be updated in their annual reports. By

selecting firms with the same financial year end, their commitments to these external sustainability activities can be compared.

For the purpose of collecting samples, Stratified Random Sampling technique is employed. Stratified Random Sampling is a technique used when the population or sampling frame under study is not homogeneous. Therefore, the sampling frame is divided into sub-groups and samples are collected using random selection separately for each subgroup (Dane, 2011). Previous studies on sustainability reporting and institutional ownership utilized purposive sampling, where largest firms by market capitalization were used in selecting the samples (Cox, et al., 2004; Graves & Waddock, 1994; Hoq, et al., 2010; Johnson & Greening, 1999; Muniandy & Barnes, 2010; Saleh, et al., 2010). This is done due to the expectations that only companies or firms with high market capitalization have adequate sustainability reporting. However, purposive sampling is considered as a non-probability sampling. By using this type of sampling, the results cannot be generalized to the whole population.

To select the samples based on Stratified Random Sampling techniques, the population is divided into several industry types, and each industry type is sampled separately using simple random sampling. The reason why sampling is done by stratifying the population according to industry types is that sustainability reporting may be influenced by the industry types, where firms in finance industry may be more positive towards sustainability reporting as they tend to be more prudent and conscious (Abdul Rashid & Ibrahim, 2002); while firms that belong to manufacturing, plantation and industrial sectors tend to focus more information on the environmental dimension of sustainability reporting, as these industries are more involved in

environmental impact (Amran & Devi, 2008; Bursa Malaysia, 2008b). As such, by stratifying the listed firms in accordance to their industry before the sampling process can provide a more reliable set of samples.

Krejcie and Morgan (1970) suggest that for a population of 550, the number of samples required is approximately 226. Another researcher, Roscoe (1975), suggests that appropriate sample size should be between 30 and 500 samples. However, when samples are to be broken into different categories, the minimum of 30 per category is recommended. From Table 4-1, the population of study consists of 538 firms from 11 industry types (excluding the mining industry with 0 population). As such, by applying the rule of thumb of 30 samples per category, a total of 330 samples are selected for this study. The total sample and the calculation in estimating the samples for each type of industry are as follows:

Table 4-1: Population and sample

Industry	Population	Number of Samples
Consumer Products	69	42
Industrial Products	154	94
Mining	0	0
Construction	23	14
Trading / Services	126	77
Property	44	27
Plantation	25	15
Technology	58	36
Infrastructure	4	3
Finance	20	12
Hotels	4	3
REIT	11	7
Total	538	330

$$\text{Number of samples for each industry} = \frac{\text{Number of population for each industry} \times 330}{538}$$

Therefore, as an example,

$$\text{Number of samples for Consumer Products industry} = \frac{69 \times 330}{538} = 42 \text{ samples}$$

#### **4.4 Variables definition and measurement**

Operational definitions, or operationalization, is the process of identifying scales that correspond to different values of the concept under study (Zikmund, Babin, Carr, & Griffin, 2010), which can also be referred to as the measurement of variables. Explained in sub-sections below are the operational definitions or measurements which are utilized in this study. The summary for all variables is outlined in Appendix B.

##### **4.4.1 Independent variable: sustainability reporting**

Sustainability reporting, which may also be referred to as “CSR reporting” or “TBL reporting”, is linked to a reporting framework that highlights three important areas, i.e., the economic, environmental and social performance of an organization, in addition to its financial performance (Choudhuri & Chakraborty, 2009). The GRI and ACCA define sustainability reporting as the reporting of the economic, environmental and social performance of an organization, which is similar to other related reports by any other name, such as CSR or TBL reporting. In this study, the data for

sustainability reporting is captured from the year 2010 annual reports or sustainability reports of the sampled firms.

Sustainability reporting is captured using content analysis technique from the annual reports, which has been largely used by previous sustainability research (Al-Tuwaijri, et al., 2004; Amran & Devi, 2008; Aras & Crowther, 2008; Haron, et al., 2006; Janggu, et al., 2007; Milne & Adler, 1999; Nik Ahmad, et al., 2003; Said, et al., 2009; Saleh, et al., 2010, 2011; Thompson & Zakaria, 2004). Content analysis is a technique with the purpose of making replicable and valid references from data to their contexts (Krippendorff, 1980). It is commonly done on the written documents, particularly the documents which are historical in nature, where the researcher usually looks at the frequency of the categories, such as by using words, sentences and page count (Myers, 2009).

As this research is focused on the Malaysian scenario, which represents the developing market, the content analysis of sustainability reporting is based on the Bursa Malaysia CSR Framework for Malaysian PLCs (Bursa Malaysia, 2006). In this framework, the reporting for sustainability commitments in annual reports should be made in accordance to four focal areas, i.e., the environment, the workplace, the community and the marketplace. As such, the measurement for sustainability reporting for this study is based on these four themes, where each of the four themes of sustainability are then further segregated into several dimensions, as utilized in previous Malaysian sustainability studies (Amran & Devi, 2007; Bursa Malaysia, 2008b; Janggu, et al., 2007; Nik Ahmad, et al., 2003; Saleh, et al., 2010). Appendix A lists the various dimensions according to the four themes which are captured as the

sustainability reporting dimensions in this study. The details on the preliminary study conducted to assess the sustainability themes and dimensions by Malaysian firms have been discussed in Section 3.3.2.

Previous research used different measurements for content analysis, such as by the quality and the extent of reporting. The latter relates to the counting of words, sentences or pages, while the former refers to evaluation of the quality of disclosures using a quality index, where the aim is to distinguish between the poor and excellent disclosure of items (Hooks & van Staden, 2011). With regards to the quality of reporting, the index used varies between researchers, where some use dichotomous variables for disclosure and non-disclosure (Haniffa & Cooke, 2005; Mohd Ghazali, 2007), where a score of 1 is given to disclosures and 0 for non-disclosures. Others use a more detailed index, with a scale of 0 to 3, where a score of 3 is for quantitative disclosure, 2 for qualitative disclosure with specific explanations, 1 for general qualitative disclosure and 0 for non-disclosure (Hoq, et al., 2010; Saleh, et al., 2010, 2011; Zainal, et al., 2013b). Others have adapted scoring guidelines by established sustainability frameworks such as the GRI, with a scale of 0 to 2 (Othman, et al., 2011), where the score of 0 denotes no disclosure, 1 for general disclosure, while the score of 2 represents detailed and quantified disclosure.

With regards to the usage of the extent of reporting as the measurement for sustainability reporting, the difference of measurements is due to certain benefits and limitations of each method. The measurement by word count, for instance, is easy to be used and mostly utilized in earlier sustainability research (Deegan & Gordon, 1996; Haniffa & Cooke, 2005; Zeghal & Ahmed, 1990). However, Milne and Adler

(1999) suggest that a good basis for a measurement may not be provided by counting individual words, as it lacks of meaning without a complete sentence . As such, most researchers favor sentences count as the method for identifying the quantity of reporting (Amran & Devi, 2007, 2008; Milne & Adler, 1999; Nik Ahmad, et al., 2003), although this method omits the consideration for disclosures in the form of tables and graphs (Al-Tuwaijri, et al., 2004; Unerman, 1999). Pages count, on the other hand, might be less accurate since different firms may use different margins, formats and font sizes (Hackston & Milne, 1996). Therefore, the differences in features might lead to unreliable comparison of sustainability reporting between different firms. However, the benefit of pages count is that it reflects the total space given to a topic (Unerman, 2000), and it does not ignore disclosures in the form of graphs and tables (Al-Tuwaijri, et al., 2004).

Nevertheless, for the purpose of the current study, two measures for sustainability reporting are utilized. Firstly, the extent of sustainability reporting is measured using the sentences count. The justification for using this type of measurement is that sentences provide true meaning and sound basis which may not be captured by individual words (Milne & Adler, 1999). The problem of omission of information which are in the form of forms, tables and graphs which may result from using the sentences count (Al-Tuwaijri, et al., 2004; Unerman, 1999), is countered by taking 15 words of the captions on the graphs, charts, tables and pictures as equal to one sentence (Hooks & van Staden, 2011). Secondly, this study measures the quality of sustainability reporting using an index with a scale of 0 to 3, where a score of 3 is for quantitative disclosure, 2 for qualitative disclosure with specific explanations, 1 for general qualitative disclosure and 0 for non-disclosure, which has been used in



previous sustainability research (Hoq, et al., 2010; Saleh, et al., 2010, 2011; Zainal, et al., 2013b). Accordingly, the quality index is derived by computing the ratio of the total scores to the number of items, with the following formula:

$$\text{QUALSR}_j = \frac{\sum_{i=1}^{n_j} X_{ij}}{n_j}$$

where

$\text{QUALSR}_j$  = quality of SR for  $j$ th firm,

$n_j$  = total number of items estimated for  $j$ th firm

$X_{ij}$  = the score of 3 for the  $i$ th item if quantitative data is disclosed, the score of 2 for the  $i$ th item if qualitative data with specific explanation is disclosed, the score of 1 for the  $i$ th item if general qualitative data is disclosed and the score of 0 for the  $i$ th item if there is no disclosure.

By taking both extent and quality measurements for sustainability reporting, a more robust analysis may be generated, thus providing a more robust conclusion and interpretation of results.

#### **4.4.2 Dependent variable: institutional investors' ownership**

Generally, institutional investors refer to large investors, other than natural persons, who exercise discretion over the investment of others (Lang & McNichols, 1997).

Specifically, institutional investors denote the pension and superannuation funds, unit trust and mutual funds, financial institutions, investment companies, insurance companies, foundations and charities and credit cooperatives (Chaganti & Damanpour, 1991; Koh, 2003).

For the purpose of this study, the various types of institutions are categorized according to their investment horizons. Following the definition of different types of institutions according to their investment behavior from previous research (Bushee, 1998, 2001; Ke & Petroni, 2004), institutions are divided into those with long-term investment horizons, or dedicated institutions, and those with short-term investment horizons, or also referred to as transient institutions. Specifically, dedicated institutions are those who have large investments in portfolio firms and extremely low turnover, and longer investment with stable ownership (Bushee, 2001; Ke & Petroni, 2004) On the other hand, transient institutions are those who have active trading strategy, with the goal of short-term trading profits, having high portfolio turnover and highly diversified portfolio (Bushee, 2001; Ke & Petroni, 2004).

With this definition, this study classifies the various types of institutions in the Malaysian setting stated in section 3.3.1, into dedicated or transient group of institutions. In section 3.3.1, it has been identified that the share ownership by pension funds institutions, unit trust and mutual funds, pilgrimage funds, banks, and insurance companies, dominates the market for institutional investors among Malaysian firms. The separation of these institutions is based on previous research which classifies pension funds as having long-term horizon, while banks and insurance companies are more inclined to short-term behavior in investment decision making (Cox, et al.,

2004; Cox & Wicks, 2011; Hayashi, 2003; Johnson & Greening, 1999; Oh & Chang, 2011). In the case of unit trust and mutual funds, the situation in Malaysia is unique, as this type of institution can be divided into two categories, i.e., the government-managed unit trust funds and private-managed mutual funds. Although previous research find that unit trust and mutual funds have short-term investment behavior (Cox, et al., 2004; Cox & Wicks, 2011), this study hypothesizes that only the private-managed mutual funds denote such behavior. Government-managed unit trust funds are categorized as having long-term goal of investment, following the clear statement by the major unit trust funds institution, the PNB, where long-term investment horizon is fundamental in investment decision making ([www.pnb.com.my](http://www.pnb.com.my)). For pilgrimage funds, as the establishment of this institution is for the purpose of societal obligations, which is also found in institutions such as foundations and charities, it is justifiable to categorize it under dedicated group of institutions.

In this study, the data for institutional ownership is obtained from the year 2011 annual reports of the sampled firms. Institutional investors' ownership is measured by the percentage of ordinary shares owned by institutional investors to the number of ordinary shares issued, which has been largely used in previous studies (Abdul Jalil & Abdul Rahman, 2010; Abdul Wahab, et al., 2008; Chaganti & Damanpour, 1991; Coffey & Fryxell, 1991; Cox, et al., 2004; Graves & Waddock, 1994; Hoq, et al., 2010; Hsu & Koh, 2005; Johnson & Greening, 1999; Koh, 2003; Mahoney & Roberts, 2007; Saleh, et al., 2010; Wahba, 2008). The data for institutional investors using the abovementioned measurement is extracted manually from the list of 30 largest shareholders of the sampled firms' 2011 annual reports. The extraction process involves aggregate institutional investors, which is later referred to as IO\_TOTAL.

Further, government-managed pension funds, government-managed unit trust funds and government-managed pilgrimage funds are grouped as dedicated institutions (IO\_DEDI), while banks, private-managed mutual funds and insurance companies are grouped as transient institutions (IO\_TRANS). Other types of institutions which are not categorized either as dedicated or transient, such as the foundations, charities, private pension funds, foreign hedge funds, others federal and state government institutions, are grouped as IO\_OTHERS.

#### **4.4.3 Control variables / Moderating variable**

A number of variables are controlled in this study, which consists of the financial performance, firm size, dividend yield, leverage, risk, managerial ownership and Shariah-compliant status. Furthermore, several corporate governance variables are also controlled, such as board size, auditor type, audit committee size, independent directors, multiple directorship of the chairman and duality. For financial performance, besides being used as a control variable, this study also utilizes it as a moderating variable. Each of the control and moderating variables is further explained below.

##### **4.4.3.1 Financial performance**

As explained in the literature review, institutional investors are attracted to firms with good financial performance (Bushee & Goodman, 2007; Graves & Waddock, 1994).

As such, this study predicts positive association between financial performance and institutional ownership. Various measures have been used to measure financial performance in previous sustainability research. Among the measurements used are the measurements for profitability, such as the return on assets (ROA) (Amran & Devi, 2008; Graves & Waddock, 1994; Hoq, et al., 2010; Said, et al., 2009; Wahba, 2008) and ROE (Graves & Waddock, 1994; Haniffa & Cooke, 2005; Mahoney & Roberts, 2007; Said, et al., 2009). For the purpose of this study, ROA is used as a control variable and also to measure the moderating effect of financial performance on the relationship between sustainability reporting and institutional ownership, where it is believed that the positive relationship between sustainability reporting and institutional ownership will be stronger when the financial performance is high. The financial performance variable data is extracted from the Datastream.

#### **4.4.3.2 Firm size**

Firm size has been identified as a factor that may attract institutional investors. Previous studies have found that investors are generally attracted to firms with large sizes (Cox, et al., 2004; Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Muniandy & Barnes, 2010; Saleh, et al., 2010). This study applies the measurement that has been used in previous research to indicate firm size, which is the market capitalization (Mohd Ghazali, 2007; Smith, et al., 2007), where it is predicted that firm size is positively associated with institutional ownership. The firm size data is obtained from the Datastream.

#### **4.4.3.3 Dividend**

Another variable which is used as a control variable in this study is the dividend. Previous studies argue that institutional investors are attracted to high-paying dividend firms (Abdul Wahab, et al., 2008; Covrig, Lau, & Ng, 2006; Del Guercio, 1996; Gompers & Metrick, 2001). As such, this study predicts that dividend may positively affecting the ownership of institutions. Furthermore, in this study, dividend is also utilized as the proxy for financial performance in testing the moderating effect of financial performance on the relationship between sustainability reporting and institutional ownership, where it is believed that the positive relationship between sustainability reporting and institutional ownership will be stronger when the dividend yield is high. Dividend is measured by dividend yield and the data for this variable is obtained from the Datastream.

#### **4.4.3.4 Leverage**

Since institutional investors are risk-averse, they prefer firms with low debt (Graves & Waddock, 1994). As such, firms' leverage is controlled in this study. The common measurement for leverage in sustainability reporting research is the total debt to total assets (Cox, et al., 2004; Graves & Waddock, 1994; Koh, 2003; Mahoney & Roberts, 2007). This study expects that leverage is negatively associated with institutional ownership. The data for this variable is extracted from the Datastream.

#### **4.4.3.5 Risk**

Modern Portfolio Theory suggests that in making investment decision, one of the factors which might be taken into consideration is the risk of the potential firms (Markowitz, 1991). Furthermore, following Abd Wahab et al. (2008), Saleh et al. (2010) and Hoq et al. (2010), variation in firm risk causes variation in institutional ownership structure. As such, risk, which is measured by beta is controlled, and this study predicts non-directional association between risk and institutional ownership. The data for this variable is obtained from the Datastream.

#### **4.4.3.6 Managerial ownership**

This study also controls for managerial ownership, as previous studies have found that institutions are more likely to invest in firms with low ownership by the managers (Abdul Wahab, et al., 2008; Bushee & Goodman, 2007; Koh, 2003). The managerial ownership is measured by the direct percentage of shares held by the managers, and this study predicts a negative relationship between managerial ownership and institutional ownership (Abdul Wahab, et al., 2008; Koh, 2003). The managerial ownership data is obtained from 2010 annual reports of the sampled firms.

#### **4.4.3.7 Shariah-compliant status**

Another variable which is controlled in this study is the Shariah compliant status of the sampled firms. Firms with Shariah compliant status are those that are not involved in activities which are contrary to the Shariah principles. The Shariah Advisory Council (SAC) of the Securities Commission (SC) Malaysia classifies eight activities, (1) financial services based on riba (interest); (2) gambling and gaming; (3) manufacture or sale of non-halal products or related products; (4) conventional insurance; (5) entertainment activities that are non-permissible according to Shariah; (6) manufacture or sale of tobacco-based products or related products; (7) stockbroking or share trading in Shariah non-compliant securities; and (8) other activities deemed non-permissible according to Shariah, which are contrary to Shariah principles. As such, firms that are involved with even one of these activities are considered as Shariah non-compliant firms (Securities Commission Malaysia, 2011b). As this study involves institutions which are sensitive to Shariah principles, such as LTH, the Shariah-compliant status of the sampled firms is controlled by using dummy variables, where 1 indicates firms with Shariah compliant status and 0 for firms with Shariah non-compliant status. This study predicts that Shariah compliant status may positively affecting the ownership of institutions which are sensitive to Shariah principles, such as LTH, as stated in the institution's investment strategy, where the funds are totally invested in Shariah-compliant investment ([www.tabunghaji.gov.my](http://www.tabunghaji.gov.my)).



#### **4.4.3.8 Board size**

One of the important elements of corporate governance is the board of directors, as this element may be used as a mechanism to oversee the conduct of business activities by the agents (Said, et al., 2009). Previous findings suggest mixed outcomes resulting from having large board size. Previous studies suggest that large boards deliver more disclosure (Holder-Webb, Cohen, Nath, & Wood, 2008). Furthermore, small board size is associated to lack of expert advice (Shakir, 2008) and diversity in terms of experience, skills, gender and nationality (Dalton & Dalton, 2005). On the other hand, adverse impact on having large board is also justified in previous studies. For example, negative correlation is found between board size and profitability (Eisenberg, Sundgren, & Wells, 1998), and large board size increases communication and coordination problems (Lipton & Lorsch, 1992). Therefore, it is recommended that reducing board size may improve corporate governance (Lipton & Lorsch, 1992). As different board sizes give positive impact on firm performance in previous studies, while institutional investors are attracted to high performance firms, this study predicts a non-directional effect of board size on institutional ownership. Board size is measured by the number of board members and the data is extracted from year 2010 annual reports.

#### **4.4.3.9 Auditor type**

Quality of auditor matters to investors (Mansi, Maxwell, & Miller, 2004). Previous studies suggest that Big 4 auditors are perceived as having high quality, which in turn

may lead to enhanced audit quality (Khurana & Raman, 2004), in addition to providing protection for firm's reputation and avoiding litigation cost (Francis & Krishnan, 1999). Furthermore, engaging auditors from the Big 4 firms has been proven to be associated with improved financial reporting timeliness (Schmidt & Wilkins, 2013). Due to these reasons, this study hypothesizes that institutional investors are more inclined to invest in firms that engage Big 4 auditors as their external auditor. Using dummy measures of 1 and 0, where 1 indicates firms with Big 4 auditors and 0 otherwise, the data for auditor type is obtained from the year 2010 annual reports of the sampled firms.

#### **4.4.3.10 Audit committee size**

Past research have identified that audit committee plays an effective role in enhancing the reliability of financial reporting (McMullen & Raghunandan, 1996), is positively associated with the extent of voluntary disclosure (Barako, et al., 2006; Ho & Wong, 2001) and signals good corporate governance mechanism (Abdul Wahab, et al., 2008). Past studies also conclude that large audit committee size tends to enhance the committees' status and power (Kalbers & Fogarty, 1993) and receiving more resources (Pincus, Rusbarsky, & Wong, 1989), thus improve the quality of internal control (Zhang, Zhou, & Zhou, 2007) since increased resources and enhanced status may lead to effective monitoring role (Zhang, et al., 2007). However, Beasley (1996) argues that smaller audit committee may be more effective than larger committees. As audit committee is seen as one of the good corporate governance tools, and institutional investors are interested in firms with good level of corporate governance

(Abdul Wahab, et al., 2008), audit committee size is thus controlled in this study. However, this study predicts a non-directional association of audit committee size and institutional ownership, based on the contrary arguments by Zhang et al. (2007) and Beasley (1996). Zhang et al. (2007) measures audit committee size by the number of audit committee members, while Malaysian Code of Corporate Governance (MCCG) requires listed firm to have at least one third of directors to sit on audit committee. Therefore, in this study, audit committee size is measured by the percentage of audit committee members over total board members, and the data is obtained from the year 2010 annual reports of the sampled firms.

#### **4.4.3.11 Board independence**

Another corporate governance variable which is controlled in this study is board independence. The Agency Theory argues that a larger proportion of independent directors may promote effective monitoring as managers are likely to be hindered from pursuing their individual wealth, thus leading to increased firm's performance. Moreover, previous findings find that higher percentage of independent directors sitting on the board may enhance the process of monitoring the management behavior (Cornett, Marcus, & Tehranian, 2008), and improving the quality of financial reporting, since board independence can ensure that the withholding information activities are reduced (Forker, 1992). As such, this study hypothesizes that there may be a positive influence of board independence on the ownership by institutions. Board independence is measured by the percentage of independent directors over the total board.

#### **4.4.3.12 Multiple directorship of the Chairman**

Multiple directorship refers to the situation where directors sit on more than one board (Haniffa & Cooke, 2005). Previous findings found positive relationship between chairmen that holds multiple directorship and voluntary disclosure (Haniffa & Cooke, 2005), which suggest that chairmen with multiple directorship gain experience by sitting on other boards, thus, able to enhance voluntary disclosure. As such, this study predicts that multiple directorship of the chairman is positively associated with institutional ownership, as the literature points out that the existence of multiple directorship of the chairman enhances the level of disclosure. The chairman multiple directorship data is obtained from the year 2010 annual reports of the sampled firms, with dummy measurement, where 1 is for firms where the chairman holds multiple directorship and 0 otherwise, as utilized in previous literature (Haniffa & Cooke, 2005).

#### **4.4.3.13 Duality**

Duality refers to the situation where the position of Chief Executive Officer (CEO) and chairman in a particular firm are held by the same person (Said, et al., 2009). Two contradictory theories, namely the Agency Theory and the Stewardship Theory are commonly used to predict contradictory effect of duality on firm performance in previous studies. On one side, supported by the Agency Theory, previous literature suggest that vesting the power of CEO and the board chairman in one person may create a strong power base which may wear down the board's ability to exercise

effective control (Said, et al., 2009), and at the same time, may compromise the independence of the board (Elsayed, 2007). Furthermore, previous findings also suggest that duality is related to low firm performance (Elsayed, 2007). On another side, based on the tenets of the Stewardship Theory, duality is found to be positively affecting firm performance (Donaldson & Davis, 1991), and particularly advantageous for firms with resource scarcity or high complexity (Boyd, 1995). Furthermore, duality is also found to positively moderate the association between innovative knowledge assets and economic performance, thus support the tenets of the Stewardship Theory that managers may indeed act as responsible stewards of the assets they control. As existing literature shows mixed findings of duality and firm performance, while institutional investors are attracted to firms with good performance, this study hypothesizes a non-directional impact of duality on institutional ownership. Duality is measured by using dummy variables, where 1 indicates that the position of Chairman and CEO are held by the same person, and 0 otherwise. The duality variable data is accumulated from the year 2010 annual reports of the sampled firms.

#### **4.5 Data analysis and interpretation**

For the purpose of interpretation, the data gathered has to undergo a series of analysis, which may be divided into preliminary analyses and hypotheses testing. Both types of analyses and the procedures adopted are further discussed in the subsequent sections. For preliminary analysis and descriptive analysis, this study utilizes SPSS software version 19, while Gretl software version 1.9.8 is used for hypotheses testing.

### **4.5.1 Preliminary analysis**

Before hypotheses can be tested, it is prudent to perform the preliminary analysis, which involves exploring the data through the data cleaning process for the purpose of detecting the missing values and outliers. Furthermore, preliminary analysis also involves the examining of the data normality, multicollinearity and heteroscedasticity. By performing the preliminary analysis, it can be determined whether the technique used for hypotheses testing is appropriate. For instance, multivariate technique is sensitive to data normality (Hair, et al., 2010). As such, it is more practical to perform preliminary analysis to the data set before performing hypotheses testing, as failing to do so may jeopardize the findings and interpretation. The discussions on each technique in the preliminary analysis are put forward in the sub-sections below:

#### **4.5.1.1 Data cleaning**

The first step taken in the preliminary analysis is to clean the data, which involves the detection of missing values and outliers. Missing values or missing data need to be identified, as the identification of missing data leads to the appropriate course of action (Hair, et al., 2010).

Outliers are observations with a unique combination of characteristics identifiable as distinctly different from the other observations (Hair, et al., 2010). The presence of outliers in a data set may distort subsequent statistical tests; therefore, it is crucial for the outliers to be detected, as after detection, the researcher needs to decide whether

the outliers are to be included or excluded from the data set. There are several methods to detect outliers, such as by univariate detection through box plots, bivariate detection using scatterplots, or by employing Mahalanobis distance test for detecting multivariate outliers (Hair, et al., 2010).

#### **4.5.1.2 Normality**

Normality refers to the degree to which the distribution of the sample data corresponds to a normal distribution (Hair, et al., 2010). Various techniques may be used to assess normality, either via graphical techniques, such as histogram, box plot and stem and leaf plot, or through more objective measures, such as skewness and kurtosis, or Shapiro-Wilks test (Coakes, Steed, & Ong, 2010). Furthermore, non-normal data may be remedied through transformation process, such as by using log, inverse, square-root or cubed transformations (Hair, et al., 2010; Osborne, 2010)

#### **4.5.1.3 Multicollinearity**

Multicollinearity refers to high correlations among independent variables (Coakes, et al., 2010), or the extent to which a variable can be explained by other variables in an analysis (Hair, et al., 2010). The problem of multicollinearity is that it may not contribute to a good regression model (Pallant, 2001), as the existence of multicollinearity may give the regression results high  $R^2$  but few significant t ratios, and high pair-wise correlations among regressors (Gujarati, 2003). As such, it is

important for a researcher to check if the data set is experiencing the multicollinearity problem. There are several methods suggested by econometrics textbooks, such as by examining the correlation matrix of the independent variables using Pearson's correlation analysis, where a correlation that exceeds 0.9 and above indicates serious problem of multicollinearity (Gujarati, 2003; Hair, et al., 2010; Pallant, 2001). Another method for multicollinearity detection is by calculating the variance inflation factor (VIF), where the rule of thumb applied is that multicollinearity exists if VIF of the variables exceeds 10 (Gujarati, 2003; Hair, et al., 2010).

#### **4.5.1.4 Heteroscedasticity**

Heteroscedasticity refers to the situation where the variance of the error terms ( $e$ ) does not appear to be constant over a range of predictor variables (Hair, et al., 2010). Heteroscedasticity is not a desirable situation in multivariate analysis as the existence of such problem indicates that the variance of the dependent variables in a dependent relationship is concentrated in only a limited range of the independent variables. The problem of heteroscedasticity may be detected using White's General Heteroscedasticity Tests or Breuch\_Pagan Godfrey Test (Gujarati, 2003); if the problem is detected, a remedy may be employed using White's Heteroscedasticity Consistent Variance and Standard ( $HC_0$ ) error technique (Gujarati, 2003), or by transforming the data (Hair, et al., 2010). Both  $HC_0$  technique and Breuch\_Pagan Godfrey Test may be employed using the Gretl software. To remedy such problem,  $HC_0$  may be performed by selecting the "robust" command, while performing a regression analysis in the Gretl software.



#### **4.5.2 Descriptive Statistics**

Descriptive statistics refer to the analysis done in order to explore, summarize and describe the data collected, which is particularly useful when a researcher wants to make some general observations (Coakes, et al., 2010). In this study, several descriptive analysis techniques are applied in describing the data, such as measures for frequency, mean, standard deviation, and maximum and minimum count.

#### **4.5.3 Correlation analysis**

Correlation test refers to the test done to identify the relationship between two variables in a linear fashion (Coakes, et al., 2010), where it is used to describe the strength and direction of the linear relationship between two variables (Pallant, 2001). However, even though correlation provides indication that there is a relationship between two variables, it does not indicate that one variable causes the other (Pallant, 2001). Nevertheless, the results from correlation tests may provide initial indication of the causal relationship.

#### **4.5.4 Hypotheses testing**

After the preliminary analysis, descriptive and correlation tests are conducted, the study continues to test the hypotheses, where a statistical technique known as the Ordinary Least Squares (OLS) or Multiple Linear Regression (MLR) technique is

utilized. OLS analysis is a statistical technique that can be employed to analyze the relationship between a single dependent variable and several independent variables (Hair, et al., 2010), where both the independent and variables are metric. Metric data refers to quantitative data, or to be exact, the data which are measured by interval or ratio scales, which provide the highest level of measurement precision, thus, suitable for almost type of analysis (Hair, et al., 2010). However, under certain circumstances, non-metric variables, or those measured by nominal and ordinal scales, may also be included in an OLS equation, such as by transforming non-metric independent variables data to dummy variable coding (Hair, et al., 2010). OLS models are represented by the equation below:

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \dots \beta_nX_n + \varepsilon$$

The below sub-sections elaborates the models used in testing the hypotheses stated in section 3.4. In order to facilitate the explanation, abbreviations to the variables under study are used in the discussions in the below sub-sections and in the next chapter.

#### **4.5.4.1 Regression models relating to Research Question 1**

Eighteen regression models or regression equations (Eq) are developed to test nine hypotheses related to the first research question stated in Section 1.3, which is “Is the effect of sustainability reporting on institutional ownership different between dedicated and transient institutional investors?”. Since the study is using two measurements for SR, each of the nine hypotheses are represented by two regression

models or equations, which use different measurements for SR. For instance, Eq (1) and Eq (2) examine the effect of SR on the aggregate institutional investors (IO\_TOTAL), or specifically, to test H<sub>1</sub>. However, since two measurements are used in measuring SR, the former examines the impact of SR on IO\_TOTAL when SR is measured by the extent of reporting (EXTSR), while the latter measures SR based on the quality measurement (QUALSR). Therefore, in testing nine hypotheses, where each hypothesis is represented by two measurements for SR, in total, there are eighteen models tested relating to the first research question. To simplify understanding, equations with odd numbers (1, 3, 5, 7, 9, 11, 13, 15 and 17) use the equation with EXTSR as measurement for SR. On the other hand, equations with even numbers (2, 4, 6, 8, 10, 12, 14, 16 and 18) utilize the equation with QUALSR as measurement for SR. Both generic equations are outlined below:

Generic equation for models with EXTSR as measurement for SR:

$$Y = \alpha + \beta_1 EXTSR + \beta_2 FPERF + \beta_3 FSIZE + \beta_4 DIV + \beta_5 LEV + \beta_6 RISK + \beta_7 MANOWN + \beta_8 SHARIAH + \beta_9 BSIZE + \beta_{10} AUDITOR + \beta_{11} ACSZ + \beta_{12} BINDEP + \beta_{13} MULTI\_CH + \beta_{14} DUALITY + \varepsilon$$

Generic equation for models with QUALSR as measurement for SR:

$$Y = \alpha + \beta_1 QUALSR + \beta_2 FPERF + \beta_3 FSIZE + \beta_4 DIV + \beta_5 LEV + \beta_6 RISK + \beta_7 MANOWN + \beta_8 SHARIAH + \beta_9 BSIZE + \beta_{10} AUDITOR + \beta_{11} ACSZ + \beta_{12} BINDEP + \beta_{13} MULTI\_CH + \beta_{14} DUALITY + \varepsilon$$

As explained previously, eighteen equations are developed to test research question 1. Eq (1) and Eq (2) examine the impact of SR on aggregate institutional investor

(IO\_TOTAL), or specifically, to answer H<sub>1</sub>: Sustainability reporting exerts significant positive impact on aggregate institutional ownership. Meanwhile, Eq (3) and Eq (4) are equations to answer H<sub>1a</sub>: Sustainability reporting exerts significant positive impact on dedicated institutional ownership, while Eq (5) and Eq (6) are equations to test H<sub>1b</sub>: The impact of sustainability reporting on transient institutional ownership is weaker than its impact on dedicated institutional ownership.

The next six models (Eq (7) to Eq (12)) examine the effect of SR on a number of dedicated institutions separately, namely the IO\_GPF (Eq (7) and (8)), IO\_GUT (Eq (9) and (10)), and IO\_GPL (Eq (11) and (12)). Eq (7) and Eq (8) aim to answer H<sub>1a1</sub>: Sustainability reporting exerts significant positive impact on the ownership of government-managed pension funds (IO\_GPF). Eq (9) and Eq (10) are equations to test H<sub>1a2</sub>: Sustainability reporting exerts significant positive impact on the ownership of government-managed unit trust funds (IO\_GUT), while Eq (11) and Eq (12) aim to test H<sub>1a3</sub>: Sustainability reporting exerts significant impact on the ownership of government-managed pilgrimage funds (IO\_GPL).

The final six equations (Eq (13) to Eq (18)) examine the effect of SR on a number of transient institutions separately, namely the IO\_BANK (Eq (13) and (14)), IO\_PRMF (Eq (15) and (16)), and IO\_INS (Eq (17) and (18)). Eq (13) and Eq (14) are equations to test specifically to answer The impact of sustainability reporting on the ownership of banks (IO\_BANK) is weaker than its impact on the ownership of dedicated institutions., while Eq (15) and Eq (16) aims to test H<sub>1b2</sub>: The impact of sustainability reporting on the ownership of private-managed mutual funds (IO\_PRMF) is weaker than its impact on the ownership of dedicated institutions.. Finally, Eq (17) and Eq

(18) are equations to test  $H_{1b3}$ : The impact of sustainability reporting on the ownership of insurance companies (IO\_INS) is weaker than its impact on the ownership of dedicated institutions.

In all equations, firm performance (FPERF), firm size (FSIZE), dividend (DIV), leverage (LEV), risk (RISK), managerial ownership (MANOWN), Shariah compliant status (SHARIAH), board size (BSIZE), auditor type (AUDITOR), audit committee size (ACSZ), independent directors (BINDEP), multiple directorship of the chairman (MULTI\_CH) and duality (DUALITY) are controlled.

#### **4.5.4.2 Regression models relating to Research Question 2**

With regards to the second research question outlined in section 1.3: “Does financial performance exert moderating impact on the relationship between sustainability reporting and aggregate, dedicated and transient institutional ownership?”, six regression models, represented by Eq (19) to Eq (24) are developed to test the three hypotheses, with two measurements of SR.

As the objective of this study is to examine if financial performance (FPERF) moderates the effect of SR on IO, or specifically, if the positive association between SR and IO is stronger for firms with high financial performance, each of the models includes the interaction of SR and FPERF. For example, Eq (19) represents the regression model to examine the moderating effect of FPERF on the relationship between EXTSR and aggregate IO (IO\_TOTAL); as such, the interaction between

EXTSR and FPERF is included in the model. On the other hand, Eq (20) represents the regression model to examine the moderating effect of FPERF on the relationship between QUALSR and IO\_TOTAL; therefore, the interaction between QUALSR and FPERF is included in the model. Following Choi, Lee and Park (2013), the moderating effect is based on the interaction of two continuous variables. The generic models in relation to the second research question are detailed out as below:

Generic equation for models with EXTSR as measurement for SR:

$$Y = \alpha + \beta_1 EXTSR + \beta_2 FPERF + \beta_3 EXTSR.FPERF + \beta_4 FSIZE + \beta_5 DIV + \beta_6 LEV + \beta_7 RISK + \beta_8 MANOWN + \beta_9 SHARIAH + \beta_{10} BSIZE + \beta_{11} AUDITOR + \beta_{12} ACSZ + \beta_{13} BINDEP + \beta_{14} MULTI\_CH + \beta_{15} DUALITY + \varepsilon$$

Generic equation for models with QUALSR as measurement for SR:

$$Y = \alpha + \beta_1 QUALSR + \beta_2 FPERF + \beta_3 QUALSR.FPERF + \beta_4 FSIZE + \beta_5 DIV + \beta_6 LEV + \beta_7 RISK + \beta_8 MANOWN + \beta_9 SHARIAH + \beta_{10} BSIZE + \beta_{11} AUDITOR + \beta_{12} ACSZ + \beta_{13} BINDEP + \beta_{14} MULTI\_CH + \beta_{15} DUALITY + \varepsilon$$

Using Eq (19) and Eq (20), this study examines the moderating effect of FPERF on the relationship between SR by aggregate institutional investors (IO\_TOTAL), or to address H<sub>2</sub>: The positive association between sustainability reporting and aggregate institutional ownership is stronger for firms with high financial performance.

The next two models are the Eq (21) and Eq (22), where this thesis examines the moderating effect of FPERF on the relationship between SR and the aggregate

dedicated institutional investors (IO\_DEDI), or specifically, to answer H<sub>2a</sub>: The positive association between sustainability reporting and aggregate dedicated institutional ownership is stronger for firms with high financial performance. IO\_DEDI refers to the aggregate percentage of shares owned by the government-managed pension funds (IO\_GPF), government-managed unit trust funds (IO\_GUT) and government-managed pilgrimage funds (IO\_GPL).

Using regression models Eq (23) and Eq (24), this thesis examines the moderating effect of FPERF on the relationship between SR and the aggregate transient institutional investors (IO\_TRANS), or specifically, to answer H<sub>2b</sub>: The association between sustainability reporting and transient institutional ownership is stronger for firms with high financial performance. IO\_TRANS refers to the aggregate percentage of shares owned by the banks (IO\_BANK), private-managed mutual funds institutions (IO\_PRMF) and insurance companies (IO\_INS).

In all equations, firm size (FSIZE), dividend (DIV), leverage (LEV), risk (RISK), managerial ownership (MANOWN), Shariah compliant status (SHARIAH), board size (BSIZE), auditor type (AUDITOR), audit committee size (ACSZ), independent directors (BINDEP), multiple directorship of the chairman (MULTI\_CH) and duality (DUALITY) are controlled. In Eq (19), Eq (21) and Eq (23), financial performance (FPERF) and the interaction between FPERF and EXTSR is included in the regression model to test the moderating effect, while Eq (20), Eq (22) and Eq (24) consists of FPERF and the interaction between FPERF and QUALSR.

#### **4.5.5 Sensitivity analysis**

Besides conducting the multivariate analysis to justify the hypotheses developed, two types of sensitivity checks are also performed with the objective of assessing the robustness of the original results to alternative variables, and to address the issues of endogeneity. Both sensitivity analyses are discussed in the sub-sections below.

##### **4.5.5.1 Assessing the robustness of results with alternative variables**

Previous studies argue that in making investment decision, institutional investors are attracted to firms with high financial performance (Bushee & Goodman, 2007; Cox, et al., 2004; Graves & Waddock, 1994; Matterson, 2000; McLachlan & Gardner, 2004; Michelson, et al., 2004). As such, in fulfilling the first objective of this study, financial performance is controlled, while in completing the second objective, moderating effect of financial performance is observed on the association between sustainability reporting and institutional ownership. For both objectives, ROA is used as the proxy for financial performance.

To test the robustness of the original results for the second objective, dividend yield is used as the proxy for financial performance. The results from this analysis may allow comparison to be made, and to observe if the results from the sensitivity analysis are consistent with the original results.



To test the robustness of results, the models below are utilized. Regression models Eq (25) and Eq (26) refer to the aggregate IO models, while Eq (27) and Eq (28) are for dedicated IO models, and Eq (29) and Eq (30) denote transient IO models. The generic equations for these models are as below:

Generic equation for models with EXTSR as measurement for SR:

$$Y = \alpha + \beta_1 EXTSR + \beta_2 DIV + \beta_3 EXTSR.DIV + \beta_4 FPERF + \beta_5 FSIZE + \beta_6 LEV + \beta_7 RISK + \beta_8 MANOWN + \beta_9 SHARIAH + \beta_{10} BSIZE + \beta_{11} AUDITOR + \beta_{12} ACSZ + \beta_{13} BINDEP + \beta_{14} MULTI\_CH + \beta_{15} DUALITY + \varepsilon$$

Generic equation for models with QUALSR as measurement for SR:

$$Y = \alpha + \beta_1 QUALSR + \beta_2 DIV + \beta_3 QUALSR.DIV + \beta_4 FPERF + \beta_5 FSIZE + \beta_6 LEV + \beta_7 RISK + \beta_8 MANOWN + \beta_9 SHARIAH + \beta_{10} BSIZE + \beta_{11} AUDITOR + \beta_{12} ACSZ + \beta_{13} BINDEP + \beta_{14} MULTI\_CH + \beta_{15} DUALITY + \varepsilon$$

#### **4.5.5.2 Addressing the threats of endogeneity with instrumental variables**

Previous studies argue that many accounting research fail to address the endogeneity bias (Larcker & Rusticus, 2007, 2010), which mostly occurs as a result of simultaneous causality (Larcker & Rusticus, 2010; Schultz, Tan, & Walsh, 2010; Wintoki, Linck, & Netter, 2012) and omitted-variable bias (Bascle, 2008; Garcia-Castro, Arino, & Canela, 2010). Simultaneous causality, also known as simultaneity or reverse causality, relates to the situation when two variables are co-determined, such that each variable may affect the other simultaneously (Schultz, et al., 2010). For

instance, in the sustainability reporting-institutional ownership relationship, previous studies identify that the existence of institutional ownership in a firm will enhance sustainability awareness, commitments and reporting (Coffey & Fryxell, 1991; Hayashi, 2003; Johnson & Greening, 1999; Oh & Chang, 2011); while other studies justify that sustainability commitments and reporting may attract investment from institutional investors (Cox, et al., 2004; Cox & Wicks, 2011; Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Muniandy & Barnes, 2010; Petersen & Vredenburg, 2009; Saleh, et al., 2010). As such, the problem of simultaneous causality is likely.

Omitted-variable bias exists when a variable, which affects the dependent variable and is correlated with one or more explanatory variables, is omitted from the regression (Wooldridge, 2006). This is a common problem encountered in social and behavioral science research (Vella, 1998). As one or more explanatory or exogenous variable is omitted from the regression line, exogeneity condition is said to be violated, thus incurring the problem of endogeneity (Bascle, 2008).

In addressing the issues of endogeneity, this study implements two procedures. Firstly, as this study may encounter the simultaneous causality bias, the method of one year lag in measuring the effect of sustainability reporting on institutional ownership is utilized, which has been used in prior studies (Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Saleh, et al., 2010). In this study, contemporaneous data (annual reports 2011) is used to measure institutional ownership, and one-year lag data (from annual report 2010) is used to measure sustainability reporting. Thus, the effect of sustainability reporting is observed to the

subsequent year's shareholdings by the institutions, which signifies that institutional investors need to consider sustainability reporting, and then only make the investment decision. The method of one year lag may differentiate between the effect of sustainability reporting on institutional ownership and vice versa, as the latter is concerned with the effect of prior or current institutional shareholdings on sustainability reporting (Johnson & Greening, 1999; Oh & Chang, 2011).

Secondly, this study tries to mitigate the possibility of endogeneity which may occur as a result from simultaneous causality bias by performing two-stage least squares analysis. Following previous research that deals with endogeneity (Wan-Hussin & Bamahros, 2013), this study implements the method of detecting endogeneity issues using two stage least squares (TSLS) with instrumental variables. To fulfil the condition of appropriate instrumental variables, the instrument should affect sustainability reporting, but not institutional ownership. In section 5.5.2, two of the controlled variables, namely the auditor type and board independence are identified to fulfil the condition of appropriate instrumental variables.

#### **4.5.6 Other Analysis – Curvi-linear relationship of Managerial Ownership and Institutional Ownership**

Previous studies found that institutional owners are more likely to invest in firms with low managerial ownership (Abdul Wahab, et al., 2008; Bushee & Goodman, 2007; Koh, 2003). However, in Section 5.4.1.4.3, the findings in this study indicate that insurance companies prefer to invest in firms with high share ownership by the

managers. These contradictory results trigger the question if the association between managerial ownership and institutional ownership is curvi-linear; which means that positive association between managerial ownership and institutional ownership may be observed in the beginning. However, as managerial ownership increases, institutional ownership will eventually decrease. This may be explained by the situation of a new firm, with small size, and is an attraction for institutions such as insurance companies (Cox, et al., 2004). Insurance companies may find that large firms less attractive, as their ownership will be less, thus limiting the ability to influence the management (Graves & Waddock, 1994). Therefore, insurance companies will prefer firms with small size. However, as the firm grow larger, it faces the agency conflict (Klapper & Love, 2004), thus decreasing managerial ownership and increasing institutional ownership may be the solution to limit the power of the managers. These justifications are the reasons of predicting the curvi-linear relationship between managerial ownership and institutional ownership.

#### **4.6 Chapter summary**

This chapter highlights the design of the study. The study implements a secondary data study, where the data is extracted from various sources, which are the 2010 and 2011 annual reports of the sampled firms, the Datastream, and the list of Shariah-compliant firms or securities by the SAC of the SC Malaysia as at 27 May 2011. The population of the study is the firms listed on Bursa Malaysia in the year 2010, which continues to fulfil the principle of going concern until the year 2011, and have the financial year end as at 31st December, which consists of 538 firms from 11

industries. A total of 330 samples are selected using the stratified random sampling technique, where the population is stratified according to the firms' industries.

SR is captured using the extent and quality of reporting procedures. Extent of reporting is measured with the method of sentences count, while the quality of reporting is measured by an SR index. The SR information covers various themes under the environment, workplace, marketplace and community dimensions. Institutional ownership is measured by the percentage of ordinary shares owned by institutional investors to the number of ordinary shares issued in a particular firm. The aggregate institutional ownership is then categorized into dedicated and transient institutions, with similar measurement.

Several variables are controlled in this study: financial performance (FPERF), measured by ROA; firm size (FSIZE), measured by market capitalization; dividend (DIV), measured by dividend yield; leverage (LEV), measured by total debt to total assets; risk (RISK), measured by beta; Shariah-compliant status (SHARIAH), measured by dummy variable, where 1 refers to firms with Shariah-compliant status and 0 otherwise; managerial ownership (MANOWN), measured by percentage of shares owned by managers, board size (BSIZE), measured by number of board members, auditor type (AUDITOR), measured by dummy variable, where 1 refers to firms with Big 4 auditors and 0 otherwise; audit committee size (ACSZ), measured by percentage of audit committee members over total board members, board independence (BINDEP), measured by percentage of independent directors over total board members, multiple directorship of the chairman (MULTI\_CH), measured by dummy variable, where 1 refers to firms where the chairman holds multiple

directorship and 0 otherwise; and finally, duality (DUALITY), measured by dummy variable, where 1 refers to firms where the position of chairman and CEO are held by the same person and 0 otherwise. In measuring the moderating impact of financial performance on the relationship between SR and IO, the interaction between SR and FPERF is analyzed using both measures for SR.

Data analysis, which involves the preliminary analysis and descriptive statistics hypotheses testing are conducted using SPSS software version 19, while hypotheses testing utilizes the Gretl software version 1.9.8. Before the hypotheses testing are implemented, the data is firstly screened for missing values and outliers, followed by tests for normality, multicollinearity and heteroscedasticity. This is followed by descriptive statistics. Eighteen models are developed to test nine hypotheses associated to research question 1, while another six models are developed to test three hypotheses related to research question 2. The chapter ends with the explanation on sensitivity analysis involving testing the robustness of the results with alternative variables, and the procedures used in mitigating the endogeneity issues, plus other analysis which deals with testing the curvi-linear relationship between managerial ownership and institutional ownership.

## **CHAPTER 5 : RESULTS**

### **5.1 Introduction**

This chapter presents the empirical evidence on the impact of sustainability reporting on institutional ownership, which is then further categorized into dedicated and transient institutional investors. This chapter also elaborates the findings of the moderating effect of financial performance on the relationship between sustainability reporting and aggregate, dedicated and transient institutional ownership. Specifically, this chapter seeks to provide answers to this study's research questions: (1) Is the impact of sustainability reporting on institutional ownership different between dedicated and transient institutional ownership?; and (2) Does financial performance exert moderating impact on the relationship between sustainability reporting and aggregate, dedicated and transient institutional ownership?

The discussion in this chapter is divided into several sections. Section 5.2 presents the preliminary analysis of data, which is mainly on fulfilling the multivariate assumptions. This is followed by descriptive statistics and correlation analysis in section 5.3 and the results of the hypotheses testing in section 5.4. This chapter also provides the results for sensitivity analyses, which include testing the robustness of results with alternative variables and addressing the threats of endogeneity using instrumental variables in section 5.5, and other analysis which is elaborated in section 5.6. Section 5.7 summarizes this chapter.

## 5.2 Preliminary analysis of data

Preliminary data analysis is done before the examination proceeds to the statistical analysis to observe for any missing values and outliers, and to ascertain the accuracy of the input data. Apart from that, preliminary analysis also involves testing certain assumptions underlying the regressions techniques used, such as normality, multicollinearity and heteroscedasticity. These analyses are crucial as multivariate techniques, such as multiple regressions, are sensitive to data normality (Hair, et al., 2010). The sub-sections below address each of the preliminary analyses and assumptions, which includes the data cleaning and screening, normality tests and outlier detection, tests for multicollinearity, and for addressing the problems of heteroscedasticity.

### 5.2.1 Data cleaning and screening

The data of 330 sampled firms are gathered from different sources which are divided into four categories:

1. Source: Year 2011 annual reports

Type of data	Remarks
a) Institutional ownership (IO) data.	2 of the firms do not indicate the beneficiary of the shares held by nominee companies, as such, the percentage of shares owned by institutional investors may not be determined, therefore, the 2 firms indicate missing PERCIO values.



2. Source: Year 2010 annual reports or sustainability reports

Type of data	Remarks
a) Sustainability reporting (SR) data.	No missing values
b) Control variables data: (i) Managerial ownership (MANOWN) data; (ii) Board Size (BSIZE) data; (iii) Auditor (AUDITOR) data; (iv) Audit committee size (ACSZ) data; (v) Independent director (BINDEP) data; (vi) Multiple directorship of the chairman (MULTI_CH) data; (vii) Duality (DUALITY) data.	No missing values

3. Source: Datastream

Type of data	Remarks
c) Control / moderating variables data: (i) Financial Performance (FPERF) data; (ii) Firm sizes (FSIZE) data; (iii) Dividend yield (DIV) data; (iv) Leverage (LEV) data; (v) Risk (RISK) data.	29 of the sampled firms indicate missing values for RISK, measured by BETA, and 3 firms indicate missing values for FSIZE, measured by market capitalization (MC)

4. Source: List of Shariah-compliant Securities by the SAC of the SC Malaysia as at 27 May 2011

Type of data	Remarks
a) Shariah-compliant status (SHARIAH).	No missing values

As there are 2 firms that indicate missing values for IO, 29 firms for RISK and 3 firms for FSIZE, this study found 34 firms with missing values. Thus, all the observations with missing value are deleted, leaving 296 firms. However, this number of samples is not final at this stage as the outlier detection test has not been done.

### **5.2.2 Normality tests and outlier detection**

After the data has been screened, further examination is done to determine whether the data is suitable for the selected statistical technique, the OLS or MLR. The most fundamental assumption in multivariate analysis (which includes OLS or MLR), is normality (Hair, et al., 2010). This assumption refers to the shape of data distribution for an individual metric variable and its correspondence to the normal distribution, which is the benchmark for statistical method (Hair, et al., 2010).

Several methods may be used to assess the normality of a set of data, whether by using graphical method or statistical method. By graphical method, different means, such as by using histogram, boxplot or normal probability plot, may be employed. On the other hand, statistical method may provide more objective results, such as by using the measure for skewness and kurtosis, Shapiro-Wilk statistics and Kolmogorov-Smirnov statistics with Lilliefors significance level (Coakes, et al., 2010).

For the purpose of this study, the measure for skewness and kurtosis is employed to determine the data normality. Skewness refers to the balance of the data distribution

compared to the normal distribution, while kurtosis refers to the “peakedness” or “flatness” of the data distribution compared to the normal distribution (Hair, et al., 2010). Kline (2005) suggests that the rule of thumb for checking the univariate normality can be based on the measure of skewness of  $\pm 3.00$  and kurtosis of  $\pm 10.00$ . Table 5-1 indicates the result of the univariate normality test statistics for the variables tested in this study.

In Table 5-1, in the column “Before Transformation” where N=296, the variables EXTSR, IO\_DEDI, IO\_TRANS, IO\_GPF, IO\_GUT, IO\_GPL, IO\_BANK, IO\_PRMF, IO\_INS, EXTSR\*FPERF, QUALSR\*FPERF, FSIZE, EXTSR\*DIV, QUALSR\*DIV AND RISK, indicate a non-normality situation, where the skewness or kurtosis is more than  $\pm 3.00$  and  $\pm 10.00$  (Kline, 2005). Hair et al. (2010) suggest that in dealing with the situation of non-normal data, researchers may consider applying data transformation as the means to correct the situation of non-normality. A number of transformation techniques may be chosen to improve the normality of a distribution, such as square root, log, inverse, arcsine and Box-Cox transformations (Hair, et al., 2010; Osborne, 2002, 2010). However, as the skewness of the non-normal variables indicate the sign of positive skewness, three types of data transformation may be employed, which are the log, inverse and square-root data transformations, which are the appropriate transformation techniques for positively skewed data (Hair, et al., 2010; Osborne, 2002). This study firstly applies the natural log (ln) transformation. Nevertheless, the logarithm of number equal to or less than 0 is undefined; as such, before log transformation is done, the data distribution of the non-normal variables with 0 or negative values is firstly anchored at 1.00, as suggested by Osborne (2010). The results after log transformation indicate that

although most variables show improved measures of skewness and kurtosis, the variables IO\_INS, and the variables representing the interaction effect of SR and FPERF, namely the EXTSR\*FPERF and QUALSR\*FPERF, still point to the situation of non-normality, where the score for skewness and kurtosis exceeds  $\pm 3.00$  and  $\pm 10.00$ , respectively (Kline, 2005). Next, the second type of transformation is applied, which is the inverse transformation method. However, the results still point to non-normality for the variables representing the interaction effect of SR and FPERF.

Further analysis is done to detect the outliers which may impact the normality of data. This study employs the Mahalanobis distance,  $D^2$  test, which is a test for detecting multivariate outliers. The test is done on the regression models indicated in Section 4.5.4, in models with and without interaction effect, using both measurements for SR, and with IO\_TOTAL as the dependent variable. The Mahalanobis distance is identified based on the critical value of chi-square for fourteen independent variables in models without interaction effect and fifteen for models with interaction effect, at an alpha level of 0.001 (Coakes, et al., 2010), which is equal to 36.12 and 37.70. Thus, the observation with Mahalanobis distance,  $D^2$  which is larger than the critical level of chi square, is considered as outliers.

From the Mahalanobis tests on all tested models, the study identifies 11 observations that indicate multivariate outliers. As such, all the 11 observations are deleted from sample, which results in a final sample of 285 firms. Following the deletion process, the skewness and kurtosis for the variables are examined once more, and all the

variables indicate normal distribution. The last panel in Table 5-1 depicts the final names of the variables after transformation.

### **5.2.3 Results of multicollinearity**

In testing the multicollinearity among the independent variables, this study employs Pearson's correlation statistics and VIF. Pearson's correlation statistics analysis involves the examination of the correlation matrix of the independent variables, where a correlation that exceeds 0.9 and above indicates serious problem of multicollinearity (Gujarati, 2003; Hair, et al., 2010; Pallant, 2001).

Table 5-2 indicates the results of Pearson's correlation statistics for all the independent variables, the interaction effects of SR and FPERF, the interaction effects of SR and DIV, and all the control variables used in this study.

From the results, three of the correlation statistics indicate scores which are near to the threshold of 0.9, which are the correlation statistics for EXTSR and QUALSR (coefficient = 0.890,  $p < 0.01$ ), correlation of EXTSR\*FPERF and QUALSR\*FPERF (coefficient = 0.917,  $p < 0.1$ ), and the correlation of EXTSR\*DIV and QUALSR\*DIV (coefficient = 0.928,  $p < 0.01$ ). However, although the correlation coefficient is pointing to  $\pm 0.9$ , the variables which reflect EXTSR and QUALSR are not tested in the same model. In simpler words, EXTSR and QUALSR, whether with interaction or without interaction, are tested in different models; as such, multicollinearity is not an issue. Besides these three correlations, none of the other correlation statistics shows

the sign of correlation more than 0.9, which indicates that serious problem of multicollinearity does not exist in all models (Gujarati, 2003; Hair, et al., 2010; Pallant, 2001).

The process of detecting multicollinearity in this study is also done by calculating the VIF, where multicollinearity exists if VIF of the variables exceeds 10 (Gujarati, 2003; Hair, et al., 2010). From the results of VIF calculation in Table 5-3, none of the variables indicates VIF score of more than 10; therefore, it may be concluded that there is no multicollinearity problem existing in all models.

#### **5.2.4 Results of heteroscedasticity**

Homoscedasticity refers to the assumption where the dependent variable exhibits equal levels of variance across the range of the independent variables (Hair, et al., 2010). In MLR, homoscedasticity situation is desirable since it shows that the variance of the dependent variable explained in a relationship is not concentrated in only a limited range of the independent variables. If the variance of the dependent variable explained in a relationship is focused on a limited range of the predictors, the relationship is said to be heteroscedastic.

To mitigate the problem of heteroscedasticity, this study applies the White's Heteroscedasticity Consistent Variance and Standard Errors Technique (Gujarati, 2003). By conducting the regression analysis using the Gretl software, and by selecting the "robust" command in the analysis procedures (Adkins, 2013), all the

models in this study are automatically corrected. White's test is also known as HC0, and the alternative to this estimators are HC1, HC2, and HC3. All these are improvement versions of White's test, where the improved versions are designed for smaller size samples. For instance HC2 and HC3 are designed for data with samples of less than 250, and HC3 may cater for dataset with samples even as small as 25. In this study, HC1 is utilized as the observation is more than 250 (Long & Ervin, 2000).

### **5.3 Descriptive and correlation statistics**

This section begins with the description of the population and sample of the study, followed by the descriptive analysis for each variable and correlation analysis of all the variables under study. The population and sample are compared in order to check for generalizability, while the descriptive analysis using the functions of mean, standard deviation, and maximum and minimum count are applied to make general observations and to describe the data. In addition, correlation analysis identifies the strength and direction of the relationship between two variables in linear fashion (Pallant, 2001). As such, it may provide initial indication of the causal relationship.

Table 5-1: Normality test statistics of the variables

Variable Name	Before Log Transformation (N=296)		After Log Transformation (N=296)		After Inverse Transformation (N=296)		After Mahalanobis test for Outlier detection (N=285)		New Variable Name
	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	
EXTSR	4.734	24.981	0.393	0.124			0.428	0.232	Ln_EXTSR
QUALSR	2.044	4.299					2.068	4.442	QUALSR
IO_TOTAL	1.966	3.446					2.026	3.799	IO_TOTAL
IO_DEDI	3.386	14.191	1.037	-0.421			1.041	-0.404	Ln_IO_DEDI
IO_TRANS	4.116	29.762	0.597	-0.933			0.583	-0.948	Ln_IO_TRANS
IO_GPF	3.425	17.105	1.657	1.237			1.657	1.246	Ln_IO_GPF
IO_GUT	5.383	35.360	2.539	5.559			2.594	5.888	Ln_IO_GUT
IO_GPLGF	7.286	61.016	2.511	5.760			2.522	5.792	Ln_IO_GPLGF
IO_BANK	3.593	17.989	1.369	0.742			1.359	0.728	Ln_IO_BANK
IO_PRMF	3.191	11.960	1.289	0.517			1.289	0.505	Ln_IO_PRMF
IO_INS	12.907	190.561	3.270	13.276	-1.853	2.000	-1.884	2.134	Inv_IO_INS
FPERF	-0.142	5.188					-0.440	2.379	FPERF
EXTSR*FPERF	8.606	84.903	-2.297	47.622	17.161	294.989	-0.496	7.502	Inv_EXTSR*FPERF
QUALSR*FPERF	7.348	77.013	0.845	14.923	6.568	66.841	0.411	5.347	Inv_QUALSR*FPERF
FSIZE	8.342	78.553	0.515	0.115			0.496	0.122	Ln_FSIZE
DIV	2.028	7.354					1.428	2.501	DIV
EXTSR*DIV	5.118	29.302	0.371	-1.111			0.322	-1.145	Ln_EXTSR*DIV
QUALSR*DIV	3.909	21.510	1.297	1.052			1.183	0.557	Ln_QUALSR*DIV
LEV	0.508	-0.756					0.491	-0.747	LEV
RISK	3.282	21.618	-0.677	5.907			-0.124	4.903	Ln_RISK
MANOWN	1.571	1.870					1.500	1.601	MANOWN
SHARIAH	-2.063	2.271					-2.125	2.531	SHARIAH
BSIZE	0.825	0.801					0.832	0.811	BSIZE
AUDITOR	-0.122	-1.999					-0.134	-1.996	AUDITOR
ACSZ	0.702	1.964					0.838	0.777	ACSZ
BINDEP	1.237	1.910					1.243	1.953	BINDEP
MULTI_CH	-0.150	-1.991					-0.134	-1.996	MULTI_CH
DUALITY	1.776	1.163					1.748	1.063	DUALITY

Cont....



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Variables Definition:

EXTSR = Extent of reporting, number of sentences, with ln transformation; QUALSR = Quality of reporting, 3 - quantitative disclosure, 2 - qualitative disclosure with specific explanations, 1 - general qualitative disclosure, and 0 - non-disclosure; IO = Institutional ownership, % of shares held by aggregate institutional investors; IO\_DEDI = Dedicated institutional ownership, % of shares held by dedicated institutions, ie the IO\_GPF, IO\_GUT and IO\_GPL, with ln transformation; IO\_TRANS = Transient institutional ownership, % of shares held by transient institutions, ie the IO\_BANK, IO\_PRMF, and IO\_INS, with ln transformation; IO\_GPF = Government-managed pension funds, % of shares held by government-managed pension funds, with ln transformation; IO\_GUT = Government-managed unit trust funds, % shares held by government-managed unit trust funds, with ln transformation; IO\_GPL = Government-managed pilgrimage funds, % shares held by government-managed pilgrimage funds, with ln transformation; IO\_BANK = Banks, % shares held by foreign and local banks, with ln transformation; IO\_PRMF = Private-managed mutual funds, % shares held by private-managed mutual funds, with ln transformation; IO\_INS = Insurance Companies, % shares held by foreign and local insurance companies, with inverse transformation; FPERF = firm performance, return on assets; EXTSR\*FPERF = the interaction between EXTSR and financial performance, EXTSR X FPERF, with inverse transformation; QUALSR\*FPERF = the interaction between QUALSR and financial performance, QUALSR X FPERF, with inverse transformation; FSIZE = firm size, market capitalization, with ln transformation; DIV = dividend, dividend yield; EXTSR\*DIV = the interaction between EXTSR and dividend, EXTSR X DIV, with ln transformation; QUALSR\*DIV = the interaction between QUALSR and dividend, QUALSR X DIV, with ln transformation; LEV = leverage, total debt to total assets; RISK = risk, beta, with ln transformation; MANOWN = managerial ownership, % shares directly held by the managers; SHARIAH = Shariah status held by firms, 1 for yes, 0 for no; BSIZE = board size, number of board members; AUDITOR = type of auditor, 1 for firm with Big 4 auditors, 0 for firms with non Big 4 auditors; ACSZ = audit committee size, % of audit committee members over total board members; BINDEP = board independence, % of independent directors over total board members; MULTI\_CH = multiple directorship of the chairman, 1 for firms where the chairman holds multiple directorship, 0 for vice versa; DUALITY = duality, 1 for firms where the position of chairman and CEO are held by the same person, 0 for vice versa; N = 285.

Table 5-2: Test for multicollinearity - Pearson's correlation

	EXTSR	QUALSR	FPERF	EXTSR* FPERF	QUALSR* FPERF	FSIZE	DIV	EXTSR* DIV	QUALSR* DIV	LEV	RISK	MANOWN	SHA- RIAH	BSIZE	AUDI- TOR	ACSZ	BINDEP	MULTI_ CH	DUA- LITY
EXTSR	1.000																		
QUALSR	0.890**	1.000																	
FPERF	0.208**	0.203**	1.000																
EXTSR*FPERF	-0.613**	-0.712**	-0.553**	1.000															
QUALSR*FPERF	-0.513**	-0.593**	-0.730**	0.917**	1.000														
FSIZE	0.645**	0.654**	0.410**	-0.565**	-0.549**	1.000													
DIV	0.136*	0.126*	0.417**	-0.273**	-0.337**	0.222**	1.000												
EXTSR*DIV	0.668**	0.648**	0.474**	-0.667**	-0.663**	0.652**	0.667**	1.000											
QUALSR*DIV	0.676**	0.713**	0.429**	-0.692**	-0.686**	0.591**	0.669**	0.928**	1.000										
LEV	.091	.104	-0.179**	.024	.048	.068	-.106	-.045	-.029	1.000									
RISK	.059	.029	-0.121*	.013	.028	.046	-0.187**	-.098	-0.116*	.060	1.000								
MANOWN	-0.245**	-0.252*	-.012	0.179**	0.140*	-0.327**	.019	-0.178**	-0.188**	-.049	-.093	1.000							
SHARIAH	-0.193**	-0.200**	.007	.101	.063	-0.250**	-.014	-.108	-.111	-.002	.014	0.145*	1.000						
BSIZE	0.351**	0.350**	.120	-0.281**	-0.252**	0.431**	0.131*	0.364**	0.333**	.017	-.061	-.084	-.071	1.000					
AUDITOR	0.373**	0.352**	0.237**	-0.341**	-0.356**	0.437**	.056	0.350**	0.313**	-.010	-.029	-0.218**	-.086	0.276**	1.000				
ACSZ	-0.211**	-0.183**	-.090	0.128*	0.130*	-0.265**	-.115	-0.241**	-0.189**	-.058	.095	-.007	.058	-0.771**	-0.219**	1.000			
BINDEP	.041	.023	-0.132*	.046	.090	-.064	-0.145*	-0.121*	-.084	-.004	.100	-.115	-.014	-0.341**	-.096	0.418**	1.000		
MULTI_CH	0.216**	0.172**	-.038	-.075	-.022	0.266**	-.021	0.13*	.084	.070	.059	-.066	-0.127*	.055	.055	-.033	.037	1.000	
DUALITY	-0.185**	-0.156**	-.066	.089	.068	-0.166**	-.049	-0.124*	-.113	-.011	.003	.076	.019	-0.156**	-.040	.064	.071	-0.338**	1.000

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Variables Definition:

EXTSR = Extent of reporting, number of sentences, with ln transformation; QUALSR = Quality of reporting, 3 - quantitative disclosure, 2 - qualitative disclosure with specific explanations, 1 - general qualitative disclosure, and 0 - non-disclosure; FPERF = firm performance, return on assets;  $EXTSR \times FPERF$  = the interaction between EXTSR and financial performance,  $EXTSR \times FPERF$ , with inverse transformation;  $QUALSR \times FPERF$  = the interaction between QUALSR and financial performance,  $QUALSR \times FPERF$ , with inverse transformation; FSIZE = firm size, market capitalization, with ln transformation; DIV = dividend, dividend yield; LEV = leverage, total debt to total assets; RISK = risk, beta, with ln transformation; MANOWN = managerial ownership, % shares held by the managers; SHARIAH = Shariah status held by firms, 1 for yes, 0 for no; BSIZE = board size, number of board members; AUDITOR = type of auditor, 1 for firm with Big 4 auditors, 0 for firms with non Big 4 auditors; ACSZ = audit committee size, % of audit committee members over total board members; BINDEP = board independence, % of independent directors over total board members; MULTI\_CH = multiple directorship of the chairman, 1 for firms where the chairman holds multiple directorship, 0 for vice versa; DUALITY = duality, 1 for firms where the position of chairman and CEO are held by the same person, 0 for vice versa; N = 285.

\*\* = correlation is significant at 0.01 level

\* = correlation is significant at 0.05 level

Table 5-3: Test for multicollinearity - VIF calculations

Variable	Models without moderation effects DV = IO_TOTAL		Models with moderation effects DV = IO_TOTAL	
	VIF	VIF	VIF	VIF
EXTSR	1.855	-	2.363	-
QUALSR	-	1.858	-	2.746
FPERF	1.581	1.583	1.999	3.231
EXTSR*FPERF	-	-	2.403	-
QUALSR*FPERF	-	-	-	4.004
FSIZE	2.718	2.815	2.725	2.832
LEV	1.081	1.084	1.082	1.087
DIV	1.276	1.274	1.277	1.277
RISK	1.076	1.074	1.076	1.082
MANOWN	1.197	1.197	1.199	1.199
SHARIAH	1.103	1.104	1.103	1.105
BSIZE	3.038	3.064	3.093	3.088
AUDITOR	1.328	1.314	1.331	1.382
ACSZ	2.747	2.761	2.801	2.785
BINDEP	1.301	1.285	1.302	1.288
MULTI_CH	1.263	1.263	1.264	1.264
DUALITY	1.190	1.184	1.195	1.194

Variables Definition:

IO = Institutional ownership, % of shares held by aggregate institutional investors; EXTSR = Extent of reporting, number of sentences, with ln transformation; QUALSR = Quality of reporting, 3 - quantitative disclosure, 2 - qualitative disclosure with specific explanations, 1 - general qualitative disclosure, and 0 - non-disclosure; FPERF = firm performance, return on assets; EXTSR\*FPERF = the interaction between EXTSR and financial performance, EXTSR X FPERF, with inverse transformation; FSIZE = firm size, market capitalization, with ln transformation; DIV = dividend, dividend yield; LEV = leverage, total debt to total assets; RISK = risk, beta, with ln transformation; MANOWN = managerial ownership, % shares directly held by the managers; SHARIAH = Shariah-compliant status held by firms, 1 for yes, 0 for no; BSIZE = board size, number of board members; AUDITOR = type of auditor, 1 for firm with Big 4 auditors, 0 for firms with non Big 4 auditors; ACSZ = audit committee size, % of audit committee members over total board members; BINDEP = board independence, % of independent directors over total board members; MULTI\_CH = multiple directorship of the chairman, 1 for firms where the chairman holds multiple directorship, 0 for vice versa; DUALITY = duality, 1 for firms where the position of chairman and CEO are held by the same person, 0 for vice versa; N = 285.

### 5.3.1 Population and sample

The population of study is the active firms listed on Bursa Malaysia in the year 2010 and continue to fulfill the principle of going concern until the year 2011, and have the financial year end as at 31<sup>st</sup> December in both years, which accounts for 538 firms. In the initial stage, 330 firms are selected as samples using the Stratified Random sampling technique, where the population is divided into 11 industry types and each group is sampled separately.

However, after the data cleaning and fulfilling the multivariate assumptions process, the sample is reduced to 285 firms. The details of the sample according to the industry types are tabulated in Table 5-4. Although the sample size reduced from 330 to 285, the percentage of each industry types to the total sample before and after the data cleaning process does not deviate much from the population. Furthermore, the mean of the final sample and the deleted sample has been tested for equality in Table 5-5, and no significant variance is found. Therefore, it may be concluded that generalizability is maintained.

The sample selection in the initial stage follows Roscoe's Rule of Thumb, where it is suggested that when samples are broken into different categories, the minimum of 30 per category is recommended (Roscoe, 1975). However, the final sample consists of only 285 firms. Despite the reduction in number, the situation still fulfils the sample size requirement by Krejcie and Morgan (1970), where for the population of 550, the number of sample required is approximately 226, and 285 samples is definitely enough to fulfill this requirement. Besides, for research that uses MLR analysis

technique, the desired number of samples is in the ratio of 15:1 or 20:1, which means 15 or 20 observations for each independent variable (Hair, et al., 2010). In this study, which has one independent variable and 14 control variables in a multivariate equation, the minimum requirement is 225 (15 x 15) or 300 (20 x 15). Thus, the final sample of 285, which is between the two ratios, fulfils the requirement by Hair et al. (2010).

Table 5-4: Population and final sample

Industry Types	Population		Sample			
			Before Data Cleaning and outlier detection		After Data Cleaning and outlier detection	
	No	%	No	%	No	%
Consumer Products	69	12.8	42	12.8	33	11.6
Industrial Products	154	28.6	94	28.5	83	29.1
Construction	23	4.3	14	4.3	13	4.5
Trading and Services	126	23.4	77	23.3	65	22.8
Property	44	8.2	27	8.2	24	8.4
Plantation	25	4.6	15	4.5	14	4.9
Technology	58	10.8	36	10.9	30	10.5
Infrastructure	4	0.8	3	0.9	3	1.1
Finance	20	3.7	12	3.6	12	4.2
Hotels	4	0.8	3	0.9	3	1.1
REITS	11	2.0	7	2.1	5	1.8
Total	538	100.0	330	100.0	285	100.0

Further analysis is done to determine if the deletion of 45 firms from the group of 330 samples result in sample bias. The t-test is conducted to determine if the mean for the remaining 285 firms and the 45 eliminated firms is equal. The variables tested for the analysis are the SR variables by both measurements, the EXTSR and QUALSR. The results are shown in Table 5-5.

Table 5-5 indicates that there is no significant difference in the mean scores of the final and deleted samples. In Panel A, when SR is measured by EXTSR, the mean for final sample is 51.200, while the mean for deleted sample equals to 32.318. Further, when SR is measured by QUALSR, the mean for final sample is 0.464, while the mean for deleted sample is 0.379. In Panel B, when equal variances are assumed, the results indicate that significant difference between the mean scores when SR is measured by EXTSR is not established ( $p = 0.336$ ,  $p > 0.10$ ). The same situation applies when SR is measured by QUALSR ( $p = 0.295$ ,  $p > 0.10$ ), thus concluding that the final sample does not indicate sample bias.

Table 5-5: T-test results for comparing means of final and deleted samples

Panel A: Group Statistics						
	Group	N	Mean	Std. Deviation		
EXTSR	Final Sample	285	51.200	128.167		
	Deleted Sample	45	32.318	72.422		
QUALSR	Final Sample	285	0.464	0.515		
	Deleted Sample	45	0.379	0.447		
Panel B: Independent Samples Test						
		Levene's Test for Equality of Variances		T-Test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
EXTSR	Equal variances assumed	2.211	0.138	0.963	328	0.336
	Equal variances not assumed			1.431	94.689	0.156
QUALSR	Equal variances assumed	0.622	0.431	1.049	328	0.295
	Equal variances not assumed			1.163	63.958	0.249

### 5.3.2 Descriptive statistics of variables

Descriptive statistics of the variables under study is presented in Table 5-6. For SR variable, which is measured by the extent of SR (EXTSR) and the quality of SR

(QUALSR), both measurements are broken into four separate themes, which are the environment (EV), workplace (WP), marketplace (MP) and community (CM) themes. For EXTSR, the mean score is 51.20 sentences. The score is however very different from the previous research where the mean score for EXTSR for the year 2009 is 116.30 sentences (Zainal, et al., 2013b). In terms of the quality of SR, the mean score in the current study is 0.46, which is also low compared to previous research by Saleh et al. (2010), with the mean of 1.47; and Zainal et al. (2013b) with the score of 0.57<sup>3</sup>. The differences in SR using both measures may be due to different sample selection techniques. The previous research uses purposive sampling technique which aims firms with largest sizes, while the current study applies stratified random sampling technique which randomly selects the sampled firms from various industry types. As such, the extent of SR in the former research is found to be high, as firms with large sizes tend to disclose SR more (Amran & Devi, 2008; Haniffa & Cooke, 2005; Ramasamy & Ting, 2004).

With regards to the separate themes of SR, the WP and CM are found to be mostly reported, with 15.74 sentences related to WP theme and 15.84 for CM theme. In terms of quality, CM theme is the best in quality with 0.61 mean index score followed by WP theme with the mean index score of 0.52. These findings indicate that the Malaysian firms emphasize “people” related SR activities, which is more likely the same with previous sustainability research (Bursa Malaysia, 2008b; Haron, et al., 2006; Jangu, et al., 2007; Nik Ahmad, et al., 2003; Saleh, et al., 2010; Thompson &

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\*<sup>3</sup> Zainal et al. (2013b) divide the total score attained by a firm with total number of items with the maximum score assigned for computing the quality index. Total items is 40 and maximum score assigned is three; therefore the total score attained for each firm is divided by 120, which results in the mean of 0.191 in 2009. To accommodate the comparison with the results from this study, which divides the total score attained by a firm with total number of items for computing the quality index, 0.191 is multiplied with 120 and divided by 40, which results in 0.57.



Zakaria, 2004). The quality index score between 0 and 1 indicates that the quality of SR by Malaysian listed firms falls between no disclosure and general qualitative disclosure.

The second main variable is the institutional ownership (IO) variable. The findings in the descriptive statistics reveal that the mean score for the percentage of shares held by IO is 13.75%. The result shows a small increase in the percentage compared to the results in previous research, where the percentage of shares is about 12% (Abdul Wahab, et al., 2008; Abdul Wahab, Mat Zain, James, & Haron, 2009). The highest percentage of share ownership in Malaysian listed firms is by the government-related pension funds (IO\_GPF) with 2.09%, followed by private-managed mutual funds (IO\_PRMF) with 2.03%, while the third in the row is the ownership by the banks (BANK) with the mean of 1.78%.

The third type of variable is the control variables, which are firm performance (FPERF), which is also the moderating variable in this study, firm size (FSIZE), dividend (DIV), leverage (LEV), risk (RISK) and managerial ownership (MANOWN). From the descriptive statistics, the range for the FSIZE is large, where the minimum market capitalization is 6,171, while the maximum is 63,178,571. For FPERF, some of the firms suffer losses with negative ROA (minimum -23.42) while the maximum is 30.27. For DIV, LEV and beta, the range is not very large as the standard deviation is not so far from the mean. For MANOWN, the mean or average for the firms under observation is 11.73%, with minimum of 0% and maximum of 70.07%. The descriptive statistics also reveal that 86% of the firms are Shariah-compliant firms.

Table 5-6: Descriptive statistics

	Minimum	Maximum	Mean	Std. Deviation
SR				
EXTSR	0.00	946.30	51.20	128.17
EV	0.00	256.80	10.83	32.14
WP	0.00	239.70	15.74	36.38
MP	0.00	253.30	8.78	25.81
CM	0.00	567.60	15.84	50.42
QUALSR	0.00	2.67	0.46	0.51
EV	0.00	2.88	0.41	0.58
WP	0.00	2.50	0.52	0.58
MP	0.00	2.57	0.31	0.50
CM	0.00	2.85	0.61	0.62
IO				
IO_TOTAL	0.00	92.94	13.75	20.24
IO_DEDI	0.00	75.50	5.29	11.25
IO_GPF	0.00	42.72	2.09	4.97
IO_GUT	0.00	53.76	1.49	5.29
IO_GPL	0.00	68.60	1.70	6.88
IO_TRANS	0.00	80.46	4.56	7.83
IO_BANK	0.00	32.03	1.78	3.78
IO_PRMF	0.00	26.95	2.03	4.20
IO_INS	0.00	73.73	0.76	4.62
IO_OTHERS	0.00	69.01	3.91	12.00
Moderating / Control / Instrumental variables				
FPERF	-23.42	30.27	4.51	7.78
FSIZE	6171.00	63178571.00	1280527.92	5526212.31
DIV	0.00	15.09	2.25	2.62
LEV	0.00	66.92	18.41	15.52
RISK	-1.29	9.80	1.07	1.07
MANOWN	0.00	70.07	11.73	15.51
SHARIAH	0.00	1.00	0.86	0.34
BSIZE	4.00	16.00	7.92	2.16
AUDITOR	0.00	1.00	0.53	0.50
ACSZ	21.43	80.00	43.72	11.86
BINDEP	25.00	100.00	42.60	12.40
MULTI_CH	0.00	1.00	0.53	0.50
DUALITY	0.00	1.00	0.17	0.38
				Cont...

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Variables definition:

SR = Sustainability reporting, measured by EXTSR and QUALSR; EXTSR = Extent of reporting, number of sentences; QUALSR = Quality of reporting, 3 - quantitative disclosure, 2 - qualitative disclosure with specific explanations, 1 - general qualitative disclosure, and 0 - non-disclosure; EV = Environment, WP = Workplace, MP = Marketplace, CM = Community (Dimensions of SR), measured by EXTSR and QUALSR; IO = Institutional Ownership; IO\_TOTAL = Aggregate Institutional ownership, % of shares held by aggregate institutional investors; IO\_DEDI = Dedicated institutional ownership, % of shares held by dedicated institutions, ie the IO\_GPF, IO\_GUT and IO\_GPL; IO\_GPF = Government-managed pension funds, % of shares held by government-managed pension funds; IO\_GUT = Government-managed unit trust funds, % shares held by government-managed unit trust funds; IO\_GPL = government-managed pilgrimage funds, % shares held by government-managed pilgrimage funds; IO\_TRANS = Transient institutional ownership, % of shares held by transient institutions, ie the IO\_BANK, IO\_PRMF and IO\_INS; IO\_BANK = Banks, % shares held by foreign and local banks; IO\_PRMF = Private-managed mutual funds, % shares held by private-managed mutual funds; IO\_INS = Insurance companies, % shares held by foreign and local insurance companies; IO\_OTHERS = Other institutional ownership, % of shares by other types of IO not recognize as dedicated or transient; FPERF = firm performance, return on assets; FSIZE = firm size, market capitalization; DIV = dividend, dividend yield; LEV = leverage, total debt to total assets; RISK = risk, beta; MANOWN = managerial ownership, % shares directly held by the managers; SHARIAH = Shariah-compliant status held by firms, 1 for yes, 0 for no; BSIZE = board size, number of board members; AUDITOR = type of auditor, 1 for firm with Big 4 auditors, 0 for firms with non Big 4 auditors; ACSZ = audit committee size, % of audit committee members over total board members; BINDEP = board independence, % of independent directors over total board members; MULTI\_CH = multiple directorship of the chairman, 1 for firms where the chairman holds multiple directorship, 0 for vice versa; DUALITY = duality, 1 for firms where the position of chairman and CEO are held by the same person, 0 for vice versa; N = 285.

In relation to corporate governance variables which are controlled in this study, the findings signify that the board size is around eight persons, while 53% of the firms have Big 4 auditors auditing their financial statements. It is also found that 43.72% of the members sit in the audit committee, and 42.6% of the directors are independent directors, which is fairly higher compared to one third as suggested by the MCCG for both mechanisms. The descriptive findings also indicate that 53% of the chairman of the sampled firms has multiple directorship and 17% hold both the position of chairman and CEO in the respective firms.

### 5.3.3 Correlation analysis

The purpose of correlation test is to identify the strength and direction of the relationship between two variables in linear fashion (Pallant, 2001). The results from a correlation test do not indicate that one variables causes the other (Pallant, 2001); nevertheless, they may provide initial indication of the causal relationship. The correlation test results using Pearson's correlation for all the variables under study are illustrated in Table 5-7.

The main objective of this study is to find out if SR exerts different impact on the ownership of dedicated and transient IO and if FPERF has a moderating effect on the SR-IO relationship. From the results in Table 5-7, the correlation of both measures for SR, i.e., EXTSR and QUALSR, point to positive and significant coefficient for all types of IO, except for IO\_GPL and IO\_INS. For IO\_GPL, the positive and significant correlation coefficient is only found when SR is measured by EXTSR, while for QUALSR, although measured with positive correlation, it is insignificant. Furthermore, both measures of SR indicate significant, but negative correlation coefficient to IO\_INS, which explains that while SR increases, IO\_INS significantly decreases. Meanwhile, the correlation between FPERF and IO\_TOTAL, IO\_DEDI and IO\_TRANS indicates a positive and significant coefficient, thus providing initial signal of institutional preference for FPERF.

With regards to the control variables, the findings indicate positive and significant correlation between FSIZE and all institutional types, except for IO\_INS, where negative and significant correlation coefficient is found. For MANOWN, negative and

significant correlation coefficient is found between MANOWN and all types of institutional investors, except for IO\_INS, which indicates that the higher the managerial shareholdings, the lower the institutional shareholdings. Additionally, IO\_GPL is found not significantly correlated to MANOWN. Furthermore, firms with large board size, with Big 4 auditors, small audit committee size, having chairman with multiple directorship, and not practicing duality, are significantly correlated to higher ownership by institutional investors.

#### **5.4 Tests for hypotheses**

This section deals with hypotheses testing for the purpose of answering the research question stated in section 1.3: (1) Is the effect of sustainability reporting on institutional ownership different between dedicated and transient institutional ownership?; and (2) Does financial performance exert a moderating impact on the relationship between sustainability reporting and aggregate, dedicated and transient institutional ownership?

##### **5.4.1 The effect of sustainability reporting on institutional ownership**

The results of the eighteen models stated in Section 4.5.4.1, which aim is to answer the first research question, are as follows. As explained before, each of the nine hypotheses meant for the first research question, is tested using two models with the

main independent variable, namely SR, measured by EXTSR and QUALSR. To simplify the understanding, four tables are developed to present the results.

Table 5-8 deals with the result of the effect of SR on aggregate IO by both measurements, which is represented by Eq (1) and Eq (2). Table 5-9 presents the result on the effect of SR on dedicated IO and transient IO, also using both measurements, represented by Eq (3) and Eq (4) for dedicated IO, and Eq (5) and Eq (6) for transient IO. This is followed by the effect of SR by both measures on individual dedicated IO, namely the government-managed pension funds (IO\_GPF), represented by Eq (7) and Eq (8), government-managed unit trust funds (IO\_GUT), represented by Eq (9) and Eq (10), and government-managed pilgrimage funds (IO\_GPL), represented by Eq (11) and Eq (12), in Table **5-10**. The fourth table (Table 5-11) outlines the results of the effect of SR by both measures on specific types of transient IO, namely the banks (IO\_BANK) represented by Eq (13) and Eq (14), private-managed mutual funds (IO\_PRMF) in Eq (15) and Eq (16), and insurance companies (IO\_INS), represented by Eq (17) and Eq (18).

Table 5-7: Correlation analysis for all variables

	EXTSR	QUALSR	FPERF	FSIZE	DIV	LEV	RISK	MANOWN	SHARIAH	BSIZE	AUDITOR	ACSZ	BINDEP	MULTI_CH	DUALITY	IO_TOTAL	IO_DEDI	IO_TRANS	IO_GPF	IO_GUT	IO_GPL	IO_BANK	IO_PRMF	IO_INS
EXTSR	1.000																							
QUALSR	0.890**	1.000																						
FPERF	0.208**	0.203**	1.000																					
FSIZE	0.645**	0.654**	0.410**	1.000																				
DIV	0.136*	0.126*	0.417**	0.222**	1.000																			
LEV	.091	.104	-0.179**	.068	-.106	1.000																		
RISK	.059	.029	-0.121*	.046	-0.187**	.060	1.000																	
MANOWN	-0.245**	-0.252*	-.012	-0.327**	.019	-.049	-.093	1.000																
SHARIAH	-0.193**	-0.200**	.007	-0.250**	-.014	-.002	.014	0.145*	1.000															
BSIZE	0.351**	0.350**	.120	0.431**	0.131*	.017	-.061	-.084	-.071	1.000														
AUDITOR	0.373**	0.352**	0.237**	0.437**	.056	-.010	-.029	-0.218**	-.086	0.276**	1.000													
ACSZ	-0.211**	-0.183**	-.090	-0.265**	-.115	-.058	.095	-.007	.058	-0.771**	-0.219**	1.000												
BINDEP	.041	.023	-0.132*	-.064	-0.145*	-.004	.100	-.115	-.014	-0.341**	-.096	0.418**	1.000											
MULTI_CH	0.216**	0.172**	-.038	0.266**	-.021	.070	.059	-.066	-0.127*	.055	.055	-.033	.037	1.000										
DUALITY	-0.185**	-0.156**	-.066	-0.166**	-.049	-.011	.003	.076	.019	-0.156**	-.040	.064	.071	-0.338**	1.000									
IO_TOTAL	0.472**	0.535**	0.162**	0.580**	0.126*	.077	-.015	-0.316**	-0.142*	0.321**	0.311**	-0.171**	.016	0.176**	-0.177**	1.000								
IO_DEDI	0.486**	0.498**	0.263**	0.605**	0.169**	-.002	-.026	-0.245**	-.044	0.301**	0.271**	-.111	-.064	0.118*	-0.116*	0.669**	1.000							
IO_TRANS	0.411**	0.418**	0.281**	0.630**	.073	.075	.066	-0.283**	-0.165**	0.308**	0.369**	-0.263**	-.079	0.229**	-0.127*	0.549**	0.411**	1.000						
IO_GPF	0.513**	0.570**	0.292**	0.696**	0.133*	.052	-.009	-0.275**	-0.146*	0.312**	0.321**	-0.147*	-.092	0.217**	-0.144*	0.604**	0.771**	0.530**	1.000					
IO_GUT	0.389**	0.423**	0.198**	0.447**	0.238**	.027	-0.119*	-0.236**	-.037	0.219**	0.210**	-.041	-.039	.078	-0.163**	0.545**	0.680**	0.219**	0.513**	1.000				
IO_GPL	0.175**	.111	.073	0.163**	.018	-.048	.062	-.027	0.139*	0.125*	.116	-.045	-.054	.000	.038	0.328**	0.601**	0.138*	0.169**	.116	1.000			
IO_BANK	0.257**	0.291**	.112	0.361**	-.052	0.146*	.075	-0.170**	-.074	0.189**	0.215**	-0.177**	-.022	0.142*	-.062	0.317**	0.188**	0.733**	0.286**	0.144*	.014	1.000		
IO_PRMF	0.438**	0.432**	0.287**	0.656**	.094	.021	.084	-0.249**	-0.133*	0.309**	0.343**	0.217**	-.058	0.177**	-0.121*	0.532**	0.490**	0.770**	0.569**	0.241**	0.210**	0.273**	1.000	
IO_INS	-0.263**	-0.328**	-0.246**	-0.458**	-0.211**	-.086	.049	0.198**	0.168**	-0.187**	-0.218**	0.174**	0.136*	-0.151*	.100	-0.466**	-0.471**	-0.513**	-0.535**	-0.332**	-0.193**	-0.164**	-0.389**	1.000

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Variables Definition:

EXTSR = Extent of reporting, number of sentences, with ln transformation; QUALSR = Quality of reporting, 3 - quantitative disclosure, 2 - qualitative disclosure with specific explanations, 1 - general qualitative disclosure, and 0 - non-disclosure; FPERF = firm performance, return on assets; EXTSR\*FPERF = the interaction between EXTSR and financial performance, EXTSR X FPERF, with inverse transformation; QUALSR\*FPERF = the interaction between QUALSR and financial performance, QUALSR X FPERF, with inverse transformation; FSIZE = firm size, market capitalization, with ln transformation; DIV = dividend, dividend yield; LEV = leverage, total debt to total assets; RISK = risk, beta, with ln transformation; MANOWN = managerial ownership, % shares held by the managers; SHARIAH = Shariah-compliant status held by firms, 1 for yes, 0 for no; BSIZE = board size, number of board members; AUDITOR = type of auditor, 1 for firm with Big 4 auditors, 0 for firms with non Big 4 auditors; ACSZ = audit committee size, % of audit committee members over total board members; BINDEP = board independence, % of independent directors over total board members; MULTI\_CH = multiple directorship of the chairman, 1 for firms where the chairman holds multiple directorship, 0 for vice versa; DUALITY = duality, 1 for firms where the position of chairman and CEO are held by the same person, 0 for vice versa; IO = Aggregate institutional ownership, % of shares held by aggregate institutional investors; IO\_DEDI = Dedicated institutional ownership, % of shares held by dedicated institutions, ie the IO\_GPF, IO\_GUT and IO\_GPL, with ln transformation; IO\_TRANS = Transient institutional ownership, % of shares held by transient institutions, ie the IO\_BANKS, IO\_PRMF and IO\_INS, with ln transformation; IO\_GPF = Government-managed pension funds, % of shares held by government-managed pension funds, with ln transformation; IO\_GUT = Government-managed unit trust funds, % shares held by government-managed unit trust funds, with ln transformation; IO\_GPL = Government-managed pilgrimage funds, % shares held by government-managed pilgrimage funds, with ln transformation; IO\_BANKS = Banks, % shares held by foreign and local banks, with ln transformation; IO\_PRMF = Private-managed mutual funds, % shares held by private-managed mutual funds institutions, with ln transformation; IO\_INS = Insurance companies, % shares held by foreign and local insurance companies, with ln transformation; N = 285.

\*\* = correlation is significant at 0.01 level

\* = correlation is significant at 0.05 level



#### **5.4.1.1 Sustainability reporting and aggregate institutional ownership**

From the results in Table 5-8, when SR is measured by EXTSR, the adjusted R-squared for the OLS regression is 0.361 and the F ratio is significant ( $p < 0.01$ ), indicating that the regression model fits the data and a linear relationship between the dependent variable and independent variables is established. The same situation is also observed when SR is measured by QUALSR, where the adjusted R-squared for the OLS regression is 0.382 and the F ratio is significant ( $p < 0.01$ ).

In determining whether SR impacts IO, the positive significant impact is only observed when SR is measured by QUALSR ( $p < 0.01$ ). This is consistent with the Stakeholder Theory, which posits that firms which address the claims of the stakeholders, will in the long-run, create value (Freeman, 1984), and previous findings that justify the ability of SR to attract investment from institutional owners (Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Saleh, et al., 2010). However, when using EXTSR as the measurement for SR, the findings fail to reject the null hypothesis. Nevertheless following the results where SR is measured by QUALSR, hypothesis  $H_1$  is thus supported.

With regards to the control variables, in both models, FSIZE, MANOWN and DUALITY also indicate significant effect on aggregate IO. FSIZE shows positive effect on aggregate IO in both models ( $p < 0.00$ ), while MANOWN signifies negative effect on IO\_TOTAL ( $p < 0.00$ ) in both models. DUALITY shows weak negative effect in both models ( $p < 0.10$ ); where the negative magnitude shows that institutional investors are likely not to prefer firms where the chairman is also the CEO.

Table 5-8: Regression results for aggregate IO models

	prediction	Eq (1) DV = IO_TOTAL			Eq (2) DV = IO_TOTAL		
		#	coeff	t-value	sig	coeff	t-value
EXTSR	+	1.686	1.474		-	-	
QUALSR	+	-	-		9.003	2.776	***
FPERF	+	-0.187	-1.419		-0.168	-1.280	
FSIZE	+	4.757	5.931	***	3.990	5.035	***
DIV	+	0.253	0.708		0.254	0.736	
LEV	-	0.034	0.491		0.023	0.335	
RISK	+/-	-3.883	-1.529		-3.525	-1.452	
MANOWN	-	-0.162	-3.127	***	-0.159	-3.140	***
SHARIAH	+/-	1.051	0.266		1.363	0.353	
BSIZE	+/-	1.233	1.392		1.007	1.157	
AUDITOR	+	2.047	1.106		1.822	0.966	
ACSZ	+/-	0.106	0.719		0.073	0.489	
BINDEP	+	0.088	0.798		0.080	0.729	
MULTI_CH	+	0.015	0.007		0.339	0.174	
DUALITY	+/-	-3.438	-1.770	*	-3.282	-1.733	*
INTERCEPT		-62.351	-4.111	***	-49.638	-3.139	***
R-squared		0.392			0.413		
Adj. R squared		0.361			0.382		
F-statistic		10.204			11.177		
p-value		0.000			0.000		
Variables definition:							
IO_TOTAL = Institutional ownership, % of shares held by institutional investors; EXTSR = Extent of reporting, number of sentences, with ln transformation (Ln_EXTSR); QUALSR = Quality of reporting, 3 - quantitative disclosure, 2 - qualitative disclosure with specific explanations, 1 - general qualitative disclosure, and 0 - non-disclosure; FPERF = firm performance, return on assets; FSIZE = firm size, market capitalization with ln transformation (Ln_FSIZE); DIV = dividend, dividend yield; LEV = leverage, total debt to total assets; RISK = risk, beta with ln transformation (Ln_RISK); MANOWN = managerial ownership, % shares directly held by the managers; SHARIAH = Shariah-compliant status held by firms, 1 for yes, 0 for no; BSIZE = board size, number of board members; AUDITOR = type of auditor, 1 for firm with Big 4 auditors, 0 for firms with non Big 4 auditors; ACSZ = audit committee size, % of audit committee members over total board members; BINDEP = board independence, % of independent directors over total board members; MULTI_CH = multiple directorship of the chairman, 1 for firms where the chairman holds multiple directorship, 0 for vice versa; DUALITY = duality, 1 for firms where the position of chairman and CEO are held by the same person, 0 for vice versa; N = 285.							
*** significant at 1% level							
** significant at 5% level							
* significant at 10% level							

#### **5.4.1.2 Sustainability reporting, dedicated and transient institutional ownership**

Table 5-9 presents the results of the effect of SR on dedicated and transient IO. Earlier in this thesis, it is hypothesized that SR may have positive impact on dedicated IO but no impact on transient IO.

For dedicated IO, in Eq (3), with the adjusted R-squared equal to 0.394 and a significant F ratio ( $p < 0.01$ ), SR is positively and significantly affecting IO ( $p < 0.01$ ), while in Eq (4), the same situation where SR significantly and positively affects IO ( $p < 0.01$ ) is observed (R-squared = 0.394; F statistics = 22.879,  $p < 0.01$ ). These findings are consistent with the Stakeholder Theory which posits that firms which address the claims of the stakeholders, will in the long-run, create value (Freeman, 1984), and previous findings that support the positive association of SR with dedicated IO (Cox, et al., 2004; Cox & Wicks, 2011).

On the other hand, in Eq (5) and Eq (6), which represent the transient institutions, no significant associations between SR and IO\_TRANS are found. Eq (5) indicates an adjusted R-squared of 0.411 and F ratio significant at  $p < 0.01$ , while Eq (6) points to an adjusted R-squared of 0.412, and F ratio significant at  $p < 0.01$ . The findings, thus confirm the premise of the Myopic Institutions Theory, where institutional owners tend to be myopic or short-sighted when making investment decisions (Hansen & Hill, 1991), and previous findings that find no association between SR and transient IO (Cox, et al., 2004; Cox & Wicks, 2011). With all these findings,  $H_{1a}$  and  $H_{1b}$  are thus supported.

With regards to the control variables, FSIZE shows significant positive impact in all dedicated and transient IO models ( $p < 0.01$ ), signifying the interest of IO towards firms with large sizes. Dedicated institutions are also found to be keen to invest in firms with low risk, with Shariah-compliant status, high in board size and high number of audit committee members.

On the other hand, transient institutions are more likely to consider short-term earnings, which may be observed in their preferences for financial performance ( $p < 0.05$ ) in both models. This is also consistent with the Myopic Institutions Theory, which posits that institutional investors are short-sighted when making investment decisions; thus short-term financial performance is always a concern. It is also observed that transient institutions prefer to invest in firms that give low dividend, which is contrary to the expectations, where institutional investors are found to be attracted to high-paying dividend firms (Abdul Wahab, et al., 2008; Covrig, et al., 2006; Del Guercio, 1996; Gompers & Metrick, 2001), and firms having low audit committee members. Besides high financial performance, large size, low dividend and low audit committee members, transient institutions are also keen to invest in firms with low managerial ownership and having Big 4 auditors, which are as expected.

#### **5.4.1.3 Sustainability reporting and specific types of dedicated institutional ownership**

The results of the effect of SR on specific types of dedicated IO are presented in Table 5-10. Three types of institutions, namely the government-managed pension funds

(IO\_GPF), government-managed unit trust funds (IO\_GUT) and government-managed pilgrimage funds (IO\_GPL) represent the institutions classified as dedicated or as having long-term investment horizon. Previously, it is hypothesized that SR exerts positive impact on the ownership by IO\_GPF, IO\_GUT and IO\_GPL.

#### **5.4.1.3.1 Sustainability reporting and government-managed pension funds**

From the results in Table 5-10, Eq (7) and Eq (8) depict the effect of SR on IO\_GPF. When SR is measured by EXTSR, the positive impact of SR on IO\_GPF is observed ( $p < 0.05$ ), where the adjusted R-squared is 0.487, (F-statistic = 19.993,  $p < 0.01$ ). Similar result is observed when QUALSR is used to measure SR, but with higher significant level ( $p < 0.01$ ), and adjusted R-squared of 0.503 (F-statistic = 23.293,  $p < 0.01$ ). With these two findings, it can be concluded that SR does have positive effect on the ownership by government-managed pension funds. Thus,  $H_{1a1}$  is supported, and is consistent with previous findings on the association between SR and pension funds institutions (Cox, et al., 2004; Cox & Wicks, 2011).

With regards to the control variables, IO\_GPF is seen to be interested to invest in firms with large firm size and high audit committee members, which is consistent with previous research, where investors are attracted to firms with large size (Cox, et al., 2004; Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Muniandy & Barnes, 2010; Saleh, et al., 2010), and having good corporate governance mechanism (Abdul Wahab, et al., 2008). However, contrary to expectations, IO\_GPF is also found to be attracted to firms with less independent

directors ( $p < 0.10$ ) when SR is measured by EXTSR and  $p < 0.05$  when SR is measured by QUALSR).

#### **5.4.1.3.2 Sustainability reporting and government-managed unit trust funds**

Eq (9) and Eq (10) in Table 5-10 describe the effect of SR on the ownership of government-managed unit trust funds (IO\_GUT). In the first model, where SR is measured by EXTSR, it is observed that SR has a huge positive impact on IO\_GUT ( $p < 0.01$ ), with adjusted R-squared of 0.269 (F-statistic = 5.363,  $p < 0.01$ ). In the second model, where QUALSR is used to measure SR, the impact is slightly less ( $p < 0.05$ ), with adjusted R-squared of 0.274 (F-statistic = 5.263,  $p < 0.01$ ). Nevertheless, these two findings indicate that SR has positive impact on the ownership by IO\_GUT. Thus,  $H_{1a2}$  is supported.

With regards to the control variables, IO\_GUT is likely to prefer firms with large size, high-paying dividend, low risk, low managerial ownership, high number of audit committee members and firms which do not practice duality. Except for the positive magnitude of BSIZE to IO\_GUT when SR is measured by EXTSR, all other findings are consistent with previous research, that investors are attracted to firms with large size (Cox, et al., 2004; Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Muniandy & Barnes, 2010; Saleh, et al., 2010), paying high dividends (Abdul Wahab, et al., 2008; Covrig, et al., 2006; Del Guercio, 1996; Gompers & Metrick, 2001), with low managerial ownership (Abdul Wahab, et al., 2008; Bushee & Goodman, 2007) and having good governance (Abdul Wahab, et al., 2008).

Table 5-9: Regression results for dedicated and transient IO models

	prediction	Eq (3) DV = IO_DEDI			Eq (4) DV = IO_DEDI			prediction	Eq (5) DV = IO_TRANS			Eq (6) DV = IO_TRANS		
		coeff	t-value	sig	coeff	t-value	sig		coeff	t-value	sig	coeff	t-value	sig
EXTSR	+	0.160	3.173	***	-	-			-0.013	-0.263		-	-	
QUALSR	+	-	-		0.441	3.153	***		-	-		0.012	0.088	
FPERF	+	0.002	-0.190		0.001	-0.145		+	0.013	-1.993	**	0.013	2.004	**
FSIZE	+	0.353	7.432	***	0.347	7.339	***	+	0.311	6.713	***	0.304	6.340	***
DIV	+	0.007	0.295		0.009	0.364		+	-0.033	-1.774	*	-0.033	-1.803	*
LEV	-	-0.003	-0.852		-0.004	-0.900		-	0.002	0.583		0.002	0.560	
RISK	+/-	-0.264	-1.805	*	-0.236	-1.634		+/-	0.142	0.993		0.141	0.980	
MANOWN	-	-0.005	-1.373		-0.005	-1.362		-	-0.007	-2.249	**	-0.007	-2.241	**
SHARIAH	+/-	0.433	2.621	***	0.437	2.638	***	+/-	-0.025	-0.146		-0.159	-0.130	
BSIZE	+/-	0.096	2.019	**	0.091	1.880	*	-	-0.036	-0.881		-0.022	-0.925	
AUDITOR	+	-0.067	-0.496		-0.050	-0.373		+	0.210	1.713	*	0.204	1.671	*
ACSZ	+/-	0.022	2.546	**	0.020	2.296	**	+/-	-0.015	-2.522	**	-0.015	-2.525	**
BINDEP	+	-0.007	-1.190		-0.006	-1.034		+	-0.001	-0.183		-0.001	-0.236	
MULTI_CH	+	0.083	-0.663		0.062	-0.495		+	0.176	1.579		0.175	1.573	
DUALITY	+/-	-0.029	0.186		-0.014	0.092		+/-	-0.015	-0.110		0.011	-0.078	
INTERCEPT		-5.153	-6.519	***	-3.786	-5.600	***		-1.980	-2.504	***	-1.904	-2.309	**
R-squared		0.425			0.424				0.440			0.441		
Adj. R-squared		0.394			0.394				0.411			0.412		
F-statistic		21.699			22.879				23.723			23.813		
p-value		0.000			0.000				0.000			0.000		
Cont....														

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Variables definition:

IO\_DEDI = Dedicated institutional ownership, % of shares held by dedicated institutions, ie the IO\_GPF, IO\_GUT and IO\_GPL, with ln transformation (Ln\_IO\_DEDI); IO\_TRANS = Transient institutional ownership, % of shares held by transient institutions, ie the IO\_BANK, IO\_PRMF and IO\_INS, with ln transformation (Ln\_IO\_TRANS); EXTSR = Extent of reporting, number of sentences, with ln transformation (Ln\_EXTSR); QUALSR = Quality of reporting, 3 - quantitative disclosure, 2 - qualitative disclosure with specific explanations, 1 - general qualitative disclosure, and 0 - non-disclosure; FPERF = firm performance, return on assets; FSIZE = firm size, market capitalization with ln transformation (Ln\_FSIZE); DIV = dividend, dividend yield; LEV = leverage, total debt to total assets; RISK = risk, beta with ln transformation (Ln\_RISK); MANOWN = managerial ownership, % shares directly held by the managers; SHARIAH = Shariah-compliant status held by firms, 1 for yes, 0 for no; BSIZE = board size, number of board members; AUDITOR = type of auditor, 1 for firm with Big 4 auditors, 0 for firms with non Big 4 auditors; ACSZ = audit committee size, % of audit committee members over total board members; BINDEP = board independence, % of independent directors over total board members; MULTI\_CH = multiple directorship of the chairman, 1 for firms where the chairman holds multiple directorship, 0 for vice versa; DUALITY = duality, 1 for firms where the position of chairman and CEO are held by the same person, 0 for vice versa; N = 285.

\*\*\* significant at 1% level

\*\* significant at 5% level

\* significant at 10% level



#### **5.4.1.3.3 Sustainability reporting and government-managed pilgrimage funds**

In Table 5-10, Eq (11) and Eq (12) depict the results of the effect of SR on the ownership of government-managed pilgrimage funds (IO\_GPL). It is hypothesized that SR may exert significant impact on the share ownership by IO\_GPL. Based on the results in Table 5-10 however, SR indicates weak positive significant impact ( $p < 0.10$ ) to IO\_GPL when SR is measured by EXTSR, while no impact is observed when SR is measured by QUALSR. Although  $H_{1a3}$  is supported when SR is measured by EXTSR, the adjusted R-squared is low with only 4.9% of variance explained (adjusted R-squared = 0.049, F statistics = 2.369,  $p < 0.01$ ).

For the control variables, SHARIAH shows significant impact on IO\_GPL in both models, indicating IO\_GPL or LTH prefers firms which are in line with the Shariah law. Besides SHARIAH, IO\_GPL also invest in firms with large size ( $p < 0.05$ ), which is shown in Eq (12), and is consistent with previous findings that suggest the interest of institutional investors in investing in large firms (Cox, et al., 2004; Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Muniandy & Barnes, 2010; Saleh, et al., 2010).

#### **5.4.1.4 Sustainability reporting and specific types of transient institutional ownership**

The results of the effect of SR on specific types of transient institutional ownership are presented in Table 5-11. Eq (13) and Eq (14) depict the results for the first type of

transient IO, namely the banks (IO\_BANK), followed by private-managed mutual funds (IO\_PRMF) in Eq (15) and Eq (16). Finally, in Eq (17) and Eq (18), the results of the effect of SR on the ownership by insurance companies (IO\_INS) are shown.

#### **5.4.1.4.1 Sustainability reporting and ownership by banks**

In Table 5-11, Eq (13) and Eq (14) represent the hypothesis that SR exerts no impact on share ownership by banks. From the results, in both models, no significant impact of SR is found on IO\_BANK, which justifies this hypothesis, which is based on the Myopic Institutions Theory. Thus, H<sub>1b1</sub> is supported.

Both regression models are found to be significant ( $p < 0.01$ ), with adjusted R-squared equal to 0.179 and F-statistics equal to 6.495 in Eq (13); and R-squared equal to 0.183 and F-statistics equal to 6.756 in Eq (14). IO\_BANK are also seen to be interested in investing in firms having large size, and with small audit committee size, which is as expected. However, the interesting points from the findings are the influence of DIV ( $p < 0.05$ ) on the ownership of banks which appear to be in the negative direction, which signifies that banks prefer firms that distribute low dividend. Furthermore, IO\_BANKS are also keen to invest in firms with high leverage, which is contrary to the expectations.

#### **5.4.1.4.2 Sustainability reporting and ownership by private-managed mutual funds**

Eq (15) and Eq (16) represent the results of the effect of SR on the ownership by private-managed mutual funds institutions (IO\_PRMF). It is hypothesized that SR exerts no impact on the ownership by private-managed mutual funds. Based on the results in Table 5-11, the hypothesis,  $H_{1b2}$ , is supported when both models indicate a non-significant impact of SR on IO\_PRMF (adjusted R-squared = 0.417, F-statistics = 16.657,  $p < 0.01$  in Eq (15) and adjusted R-squared = 0.417, F-statistics = 16.680,  $p < 0.01$  in Eq (16). These findings are consistent with previous findings that conclude the non-association of sustainability reporting and ownership by unit trust and mutual funds (Cox, et al., 2004; Cox & Wicks, 2011).

In both models, only FSIZE shows significant positive impact on IO\_PRMF, which is also justified in previous findings that institutional investors prefer firms with large size (Cox, et al., 2004; Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Muniandy & Barnes, 2010; Saleh, et al., 2010).

Table 5-10: Regression results for specific dedicated IO models

		Eq (7) DV = IO_GPF			Eq (8) DV= IO_GPF			Eq (9) DV = IO_GUT			Eq (10) DV= IO_GUT			Eq (11) DV = IO_GPL			Eq (12) DV= IO_GPL		
	prediction	coeff	t-value	sig	coeff	t-value	sig	coeff	t-value	sig	coeff	t-value	sig	coeff	t-value	sig	coeff	t-value	sig
EXTSR	+	0.080	2.056	**	-			0.094	2.683	***	-	-		0.083	1.963	*	-	-	
QUALSR	+	-	-		0.376	3.244	***	-	-		0.322	2.470	**	-	-		0.030	0.246	
FPERF	+	0.003	0.499		0.004	0.618		-0.005	-0.943		-0.005	-0.868		-0.002	-0.304		-0.002	-0.388	
FSIZE	+	0.307	8.419	***	0.279	7.566	***	0.138	3.645	***	0.125	3.250	***	0.055	1.457		0.085	2.154	**
DIV	+	-0.015	-1.093		-0.015	-1.091		0.042	1.979	**	0.043	2.006	**	-0.009	-0.500		-0.007	-0.396	
LEV	-	0.000	0.100		-0.000	-0.057		0.001	0.238		0.000	0.152		-0.004	-1.247		-0.003	-1.141	
RISK	+/-	-0.172	-1.627		-0.156	-1.546		-0.364	-3.137	***	-0.346	-3.026	***	0.131	1.110		0.144	1.225	
MANOWN	-	-0.004	-1.457		-0.004	-1.451		-0.006	-3.121	***	-0.005	-3.147	***	0.001	0.415		0.001	0.397	
SHARIAH	+/-	0.096	0.740		0.108	0.848		0.194	1.566		0.200	1.592		0.461	4.371	***	0.451	4.335	***
BSIZE	+/-	0.039	1.127		0.030	0.884		0.062	1.792	*	0.057	1.630		0.045	0.956		0.050	1.036	
AUDITOR	+	-0.005	-0.070		-0.011	-0.144		-0.003	-0.037		0.001	0.016		0.043	0.410		0.070	0.664	
ACSZ	+/-	0.012	2.143	**	0.010	1.910	*	0.017	2.496	**	0.016	2.301	**	0.008	0.871		0.008	0.849	
BINDEP	+	-0.007	-1.967	*	-0.007	-2.034	**	-0.003	-0.758		-0.003	-0.715		-0.005	-0.781		-0.003	-0.565	
MULTI_CH	+	0.079	0.992		0.093	1.209		-0.086	-0.930		-0.072	-0.790		-0.013	-0.124		-0.007	-0.064	
DUALITY	+/-	0.016	0.158		0.019	0.203		-0.155	-1.888	*	-0.159	-1.944	*	0.198	1.508		0.176	1.329	
INTERCEPT		-3.830	-7.435	***	-3.337	-6.175	***	-2.421	-3.804	***	-2.101	-3.145	***	-1.575	-2.098	**	-1.836	-2.235	**
R-squared		0.512			0.527			0.305			0.312			0.096			0.085		
Adj. R-squared		0.487			0.503			0.269			0.274			0.049			0.037		
F-statistic		19.933			23.293			5.363			5.263			2.369			2.293		
p-value		0.000			0.000			0.000			0.000			0.004			0.000		
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Variables definition:

IO\_GPF = Government-managed pension funds, % of shares held by government-managed pension funds, with ln transformation (Ln\_IO\_GPF); IO\_GUT = Government-managed unit trust funds, % of shares held by government-managed unit trust funds, with ln transformation (Ln\_IO\_GUT); IO\_GPL = Government-managed pilgrimage funds, % of shares held by government-managed pilgrims fund, with ln transformation (Ln\_IO\_GPL); EXTSR = Extent of reporting, number of sentences, with ln transformation (Ln\_EXTSR); QUALSR = Quality of reporting, 3 - quantitative disclosure, 2 - qualitative disclosure with specific explanations, 1 - general qualitative disclosure, and 0 - non-disclosure; FPERF = firm performance, return on assets; FSIZE = firm size, market capitalization, with ln transformation (Ln\_FSIZE); DIV = dividend, dividend yield; LEV = leverage, total debt to total assets; RISK = risk, beta with ln transformation (Ln\_RISK); MANOWN = managerial ownership, % shares directly held by the managers; SHARIAH = Shariah-compliant status held by firms, 1 for yes, 0 for no; BSIZE = board size, number of board members; AUDITOR = type of auditor, 1 for firm with Big 4 auditors, 0 for firms with non Big 4 auditors; ACSZ = audit committee size, % of audit committee members over total board members; BINDEP = board independence, % of independent directors over total board members; MULTI\_CH = multiple directorship, 1 for firms where the chairman holds multiple directorship, 0 for vice versa; DUALITY = duality, 1 for firms where the position of chairman and CEO are held by the same person, 0 for vice versa; N = 285.

\*\*\* significant at 1% level

\*\* significant at 5% level

\* significant at 10% level

#### **5.4.1.4.3 Sustainability reporting and insurance companies**

Eq (17) and Eq (18) depict the results of the effect of SR on the ownership by insurance companies by both measurements, EXTSR and QUALSR. In the previous chapter, it is hypothesized that SR may not have an impact on the share ownership by insurance companies. From the results in Table 5-11, no significant impact of SR is found in either models (adjusted R-squared = 22%,  $p < 0.01$ ), which is consistent with previous findings (Cox & Wicks, 2011). Thus,  $H_{1b3}$  is supported.

For the control variables, IO\_INS are seen to be interested in firms having high percentage of independent directors, which is as expected. However, the more interesting fact is that insurance companies seem to be attracted to firms with small size ( $p < 0.01$ ), and have little interest in firms with high managerial ownership ( $p < 0.10$ ).

Table 5-11: Regression results for specific transient IO models

		Eq (13) DV = IO_BANK			Eq (14) DV= IO_BANK			Eq (15) DV = IO_PRMF			Eq (16) DV= IO_PRMF			Eq (17) DV = IO_INS			Eq (18) DV= IO_INS		
	prediction	coeff	t-value	sig	coeff	t-value	sig	coeff	t-value	sig	coeff	t-value	sig	coeff	t-value	sig	coeff	t-value	sig
EXTSR		0.008	0.216		-	-		0.010	0.251		-	-		0.009	0.596		-	-	
QUALSR		-	-		0.138	1.125		-	-		0.009	0.064		-	-		-0.034	-0.794	
FPERF	+	0.006	0.912		0.006	0.980		0.005	0.840		0.005	0.830		-0.002	-0.827		-0.002	-0.927	
FSIZE	+	0.133	3.240	***	0.114	2.726	***	0.291	8.071	***	0.294	7.558	***	-0.057	-4.177	***	-0.048	-3.422	***
DIV	+	-0.041	-2.535	**	-0.041	-2.565	**	-0.020	-1.425		-0.020	-1.408		-0.010	-1.540		-0.009	-1.484	
LEV	-	0.006	1.798	*	0.005	1.725	*	-0.002	-0.605		-0.002	-0.597		-0.001	-1.267		-0.001	-1.154	
RISK	+/-	0.104	0.906		0.107	0.926		0.154	1.454		0.156	1.450		0.036	0.948		0.037	0.987	
MANOWN	-	-0.003	-1.006		-0.003	-0.989		-0.002	-0.981		-0.002	-0.982		0.001	1.747		0.001	1.697	*
SHARIAH	+/-	0.051	0.362		0.059	0.411		0.080	0.579		0.079	0.572		0.045	0.829		0.041	0.767	
BSIZE	+/-	-0.019	-0.529		-0.024	-0.667		-0.007	-0.210		-0.007	-0.198		0.014	1.306		0.016	1.491	
AUDITOR	+	0.088	0.801		0.078	0.724		0.092	1.065		0.095	1.096		-0.011	-0.363		-0.004	-0.142	
ACSZ	+/-	-0.010	-1.906	*	-0.010	-2.025	*	-0.005	-0.930		-0.004	-0.943		0.002	1.298		0.002	1.365	
BINDEP	+	0.001	0.325		-0.001	0.236		-0.000	-0.117		-0.000	-0.088		0.002	1.535		0.002	1.767	*
MULTI_CH	+	0.080	0.779		0.084	0.816		0.013	0.152		0.014	0.162		-0.022	-0.765		-0.022	-0.759	
DUALITY	+/-	0.019	0.148		0.026	0.203		-0.024	-0.244		-0.027	-0.268		0.012	0.368		0.007	0.209	
INTERCEPT		-0.800	-1.244		-0.539	-0809		-2.869	-5.496	***	-2.889	-5.321	***	1.230	6.746	***	1.123	5.707	***
R-squared		0.179			0.183			0.446			0.446			0.258			0.259		
Adj. R-squared		0.136			0.140			0.417			0.417			0.219			0.220		
F-statistic		6.495			6.756			16.657			16.680			6.162			6.538		
p-value		0.000			0.000			0.000			0.000			0.000			0.000		

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Variables definition:

IO\_BANK = Banks, % shares held by foreign and local banks, with ln transformation (Ln\_IO\_BANK); IO\_PRMF = Private-managed mutual funds, % shares held by private-managed foreign and local mutual funds, with ln transformation (Ln\_IO\_PRMF); IO\_INS = Insurance companies, % shares held by foreign and local insurance companies, with ln transformation (Ln\_IO\_INS); EXTSR = Extent of reporting, number of sentences, with ln transformation (Ln\_EXTSR); QUALSR = Quality of reporting, 3 - quantitative disclosure, 2 - qualitative disclosure with specific explanations, 1 - general qualitative disclosure, and 0 - non-disclosure; FPERF = firm performance, return on assets; FSIZE = firm size, market capitalization, with ln transformation (Ln\_FSIZE); DIV = dividend, dividend yield; LEV = leverage, total debt to total assets; RISK = risk, beta with ln transformation (Ln\_RISK); MANOWN = managerial ownership, % shares directly held by the managers; SHARIAH = Shariah-compliant status held by firms, 1 for yes, 0 for no; BSIZE = board size, number of board members; AUDITOR = type of auditor, 1 for firm with Big 4 auditors, 0 for firms with non Big 4 auditors; ACSZ = audit committee size, % of audit committee members over total board members; BINDEP = board independence, % of independent directors over total board members; MULTI\_CH = multiple directorship of the chairman, 1 for firms where the chairman holds multiple directorship, 0 for vice versa; DUALITY = duality, 1 for firms where the position of chairman and CEO are held by the same person, 0 for vice versa; N = 285.

\*\*\* significant at 1% level

\*\* significant at 5% level

\* significant at 10% level



#### **5.4.2 The moderating effect of financial performance on the relationship between sustainability reporting and institutional ownership**

The results of the six models for three hypotheses proposed in Section 4.5.4.2, which aim to answer the second research question, are as follows. As with the first research question, each hypothesis is tested using two models with the main independent variable, namely SR, measured by EXTSTR and QUALSR. In the models where SR is measured by EXTSTR, an interaction of EXSTR and FPERF is determined to test if FPERF moderates the relationship between EXSTR and IO. Similarly, in the models with QUALSR as the measurement for SR, an interaction of QUALSR and FPERF is established to determine if FPERF moderates the relationship between QUALSR and IO.

Table 5-12 depicts the result of the moderating effect of FPERF on the relationship between SR and aggregate IO; Table 5-13 for the results of the moderation effect of FPERF on the relationship between SR and aggregate dedicated IO; and finally, Table 5-14 for the results of the moderating effect of FPERF on the relationship between SR and aggregate transient IO. All tables indicate the measurement of SR by both measurements, presented in Eq (19) to Eq (24). The tables also include the results of the models when no interaction effect is tested as in previous sections, namely Eq (1) to Eq (6), for comparisons. The findings are discussed separately in the following sub-sections.

#### **5.4.2.1 The moderating effect of financial performance on the relationship between sustainability reporting and aggregate institutional ownership**

The results of the moderation effect of FPERF on the relationship between SR and aggregate IO are presented by Eq (19) and Eq (20) in Table 5-12, where the objective is to support hypothesis H<sub>2</sub>: The positive association between sustainability reporting and aggregate institutional ownership is stronger for firms with high financial performance.

Previously, when the models are tested without the interaction effect (refer Eq (1) and Eq (2)), the results indicate that SR does not influence IO\_TOTAL when SR is measured by EXTSR; however, positive impact of SR is found on IO\_TOTAL when SR is measured by QUALSR ( $p < 0.01$ ). Similar results are found when the interaction of SR and FPERF is tested (refer Eq (19) and Eq (20)), where SR influences IO\_TOTAL when SR is measured by QUALSR ( $p < 0.10$ ), but not EXTSR. The findings however, indicate that the impact of SR in the original model without interaction, Eq (2), is stronger ( $p < 0.01$ ) compared to the model with interaction, Eq (19), which indicates weaker p-value ( $p < 0.10$ ). With regards to the control variables, three control variables, namely FSIZE, MANOWN and DUALITY consistently influence IO\_TOTAL, either in the non-interaction or interaction models of SR-FPERF.

Moderation effect occurs when the third variable changes the relationship between the two variables under study (Hair, et al., 2010). To answer the question if FPERF has a moderating effect on the relationship between SR and IO, both models, Eq (19) and

Eq (20) signify that the moderation effect exists. In Eq (19), with the adjusted R-squared of 0.394 and significant F-statistic ( $p < 0.01$ ), a significant negative moderation effect of FPERF is observed ( $p < 0.01$ ). Furthermore, R-squared shows an increase from 39.2% in the original model to 42.6% in the interaction model, when SR is measured by EXTISR, while there is a slight increase in R-squared from 41.3% to 41.8% in models when SR is measured by QUALSR. Based on these findings, it is clear that moderation effect of FPERF exists in the SR\_IO relationship. The results however, indicate contrary conclusions from expectation. Previously, it is hypothesized that the positive association between sustainability reporting and aggregate institutional ownership is stronger for firms with high financial performance. Conversely, the results point out that the preference of institutional investors towards SR is stronger for firms with low financial performance. Thus, H<sub>2</sub> is not supported.

#### **5.4.2.2 The moderating effect of financial performance on the relationship between sustainability reporting and dedicated institutional ownership**

The results of the moderation effect of FPERF on the relationship between SR and IO\_DEDI is presented by Eq (21) and Eq (22) in Table 5-13, where the objective is to support hypothesis H<sub>2a</sub>: The association between sustainability reporting and aggregate dedicated institutional ownership is stronger for firms with high financial performance.

Table 5-12: Moderation effect results for aggregate IO models

	prediction	Eq (19) DV = IO_TOTAL			Eq (1) DV = IO_TOTAL			Eq (20) DV = IO_TOTAL			Eq (2) DV = IO_TOTAL		
		coeff	t-value	sig	coeff	t-value	sig	coeff	t-value	sig	coeff	t-value	sig
EXTSR	+	-0.153	-0.128		1.686	1.474		-	-		-	-	
QUALSR	+	-	-		-	-		6.308	1.757	*	9.003	2.776	***
FPERF	+	-0.495	-3.465	***	-0.187	-1.419		-0.411	-2.340	**	-0.168	-1.280	
EXTSR*FPERF	+	-41785.7	-3.387	***	-	-		-	-		-	-	
QUALSR*FPERF	+	-	-		-	-		-332.09	-1.934	*	-	-	
FSIZE	+	4.581	6.047	***	4.757	5.931	***	4.097	5.168	***	3.990	5.035	***
DIV	+	0.203	0.602		0.253	0.708		0.221	0.652		0.254	0.736	
LEV	-	0.029	0.422		0.034	0.491		0.018	0.263		0.023	0.335	
RISK	+/-	-4.009	-1.606		-3.883	-1.529		-3.945	-1.637		-3.525	-1.452	
MANOWN	-	-0.151	-3.019	***	-0.162	-3.127	***	-0.156	-3.040	***	-0.159	-3.140	***
SHARIAH	+/-	0.970	0.257		1.051	0.266		1.214	0.317		1.363	0.353	
BSIZE	+/-	0.834	0.930		1.233	1.392		0.900	1.027		1.007	1.157	
AUDITOR	+	1.677	0.905		2.047	1.106		1.477	0.768		1.822	0.966	
ACSZ	+/-	0.033	0.217		0.106	0.719		0.054	0.355		0.073	0.489	
BINDEP	+	0.096	0.907		0.088	0.798		0.086	0.782		0.080	0.729	
MULTI_CH	+	0.169	0.089		0.015	0.007		0.385	0.200		0.339	0.174	
DUALITY	+/-	-4.168	-2.182	**	-3.438	-1.770	*	-3.665	-1.890	*	-3.282	-1.733	*
INTERCEPT		-21.879	-1.106		-62.351	-4.111	***	-31.023	-1.626		-49.638	-3.139	***
R-squared		0.426			0.392			0.418			0.413		
Adj. R-squared		0.394			0.361			0.386			0.382		
F-statistic		10.374			10.204			10.436			11.177		
p-value		0.000			0.000			0.000			0.000		
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Variables definition:

IO\_TOTAL = Aggregate institutional ownership, % of shares held by aggregate institutional investors; EXTISR = Extent of reporting, number of sentences, with ln transformation (Ln\_EXTISR); QUALSR = Quality of reporting, 3 - quantitative disclosure, 2 - qualitative disclosure with specific explanations, 1 - general qualitative disclosure, and 0 - non-disclosure; FPERF = firm performance, return on assets; EXTISR\*FPERF = the interaction between EXTISR and financial performance, EXTISR x FPERF, with inverse transformation (INV\_EXTISR\*FPERF); QUALSR\*FPERF = the interaction between QUALSR and financial performance, QUALSR x FPERF, with inverse transformation (INV\_QUALSR\*FPERF); FSIZE = firm size, market capitalization with ln transformation (Ln\_FSIZE); DIV = dividend, dividend yield; LEV = leverage, total debt to total assets; RISK = risk, beta with ln transformation (Ln\_RISK); MANOWN = managerial ownership, % shares directly held by the managers; SHARIAH = Shariah-compliant status held by firms, 1 for yes, 0 for no; BSIZE = number of board members; AUDITOR = type of auditor, 1 for firm with Big 4 auditors, 0 for firms with non Big 4 auditors; ACSZ = audit committee size, % of audit committee members over total board members; BINDEP = % of independent directors over total board members; MULTI\_CH = 1 for firms where the chairman holds multiple directorship, 0 for vice versa; DUALITY = 1 for firms where the position of chairman and CEO are held by the same person, 0 for vice versa; N = 285.

\*\*\* significant at 1% level

\*\* significant at 5% level

\* significant at 10% level

In previous models, where the interaction effect is not tested (refer Eq (3) and Eq (4)), the results indicate that SR positively influences IO\_DEDI in both measurements of SR ( $p < 0.01$ ), namely the EXTSR and QUALSR. However, when the interaction of SR and FPERF is tested (refer Eq (21) and Eq (22)), the direct positive influence of SR on IO\_DEDI is observed in both models, however weaker in significance. With regards to the control variables, four control variables, namely FSIZE, SHARIAH, BSIZE and ACSZ consistently influence all IO\_DEDI models, either in the non-interaction or interaction models of SR-FPERF. However, RISK is found to influence IO\_DEDI only in the SR-PERF non-interaction models and direct model when SR is measured by EXTSR.

To answer the question if FPERF has a moderating effect on the relationship between SR and IO\_DEDI, the results in Eq (21) and eq (22) signify that the moderation effect exists when SR is measured by EXTSR, but no moderation exists when SR is measured by QUALSR. Moderation effect occurs when the third variable changes the relationship between the two variables under study (Hair, et al., 2010). In Eq (21), with the adjusted R-squared of 0.404 and significant F-statistic ( $p < 0.01$ ), the significant negative moderation effect of FPERF ( $p < 0.01$ ) denotes that in determining whether to invest in a firm that engages in SR, institutional investors prefer an SR engagement firm with low financial performance. The existence of moderation may also be justified with the increase in the R-squared (0.425 to 0.435) and adjusted R-squared (0.394 to 0.404) in the direct and interaction models.

A different situation is observed in Eq (22), with the adjusted R-squared of 0.394 and significant F-statistic ( $p < 0.01$ ), where the results confirm that no moderation effect is

established. Although the coefficient still points to negative magnitude of moderation, the p-value is not significant to justify the existence of moderation. Furthermore, the consistent adjusted R-squared value (0.394) in Eq (4) and Eq (22) signals the non-existence of the moderation effect. These two findings, where in Eq (21), moderation exists but in negative magnitude, which is contrary to expectations, and in Eq (22), where moderation does not exist, show that  $H_{2a}$  is not supported.

#### **5.4.2.3 The moderating effect of financial performance on the relationship between sustainability reporting and transient institutional ownership**

The results of the moderation effect of FPERF on the relationship between SR and IO\_TRANS are presented by Eq (23) and Eq (24) in Table 5-14, where the objective is to support hypothesis  $H_{2b}$ : The association between sustainability reporting and transient institutional ownership is stronger for firms with high financial performance.

Eq (23) and Eq (24) in Table 5-14 present the results of the moderation effect of FPERF on the relationship between SR and IO\_TRANS. In section 5.4.1.2, when the models are tested directly (refer Eq (5) and Eq (6)), the results indicate that SR does not influence IO\_TRANS in both measurements of SR, namely the EXTSR and QUALSR. In Eq (23) and Eq (24), when the interaction effect of SR and FPERF is tested, similar results are found where no significant impact of SR is observed on IO\_TRANS by both measures of SR.

Table 5-13: Moderation effect results for dedicated IO models

	prediction	Eq (21) DV = IO_DEDI			Eq (3) DV = IO_DEDI			Eq (22) DV = IO_DEDI			(Eq (4) DV = IO_DEDI		
		coeff	t-value	sig	coeff	t-value	sig	coeff	t-value	sig	coeff	t-value	sig
EXTSR	+	0.096	1.896	*	0.160	3.173	***	-	-		-	-	
QUALSR	+	-	-		-	-		0.358	2.529	**	0.441	3.153	***
FPERF	+	-0.012	-1.437		0.002	-0.190		-0.009	-0.880		0.001	-0.145	
EXTSR*FPERF	+	-1443.94	-2.751	***	-	-		-	-		-	-	
QUALSR*FPERF	+	-	-		-	-		-10.310	-1.322		-	-	
FSIZE	+	0.347	7.262	***	0.353	7.432	***	0.351	7.392	***	0.347	7.339	***
DIV	+	0.006	0.229		0.007	0.295		0.008	0.325		0.009	0.364	
LEV	-	-0.003	-0.894		-0.003	-0.852		-0.004	-0.934		-0.004	-0.900	
RISK	+/-	-0.269	-1.855	*	-0.264	-1.805	*	-0.249	-1.724	*	-0.236	-1.634	
MANOWN	-	-0.005	-1.280		-0.005	-1.373		-0.005	-1.320		-0.005	-1.362	
SHARIAH	+/-	0.431	2.632	***	0.433	2.621	***	0.432	2.604	***	0.437	2.638	***
BSIZE	+/-	0.812	1.687	*	0.096	2.019	**	0.088	1.789	*	0.091	1.880	*
AUDITOR	+	-0.079	-0.595		-0.067	-0.496		-0.060	-0.451		-0.050	-0.373	
ACSZ	+/-	0.019	2.163	**	0.022	2.546	**	0.020	2.194	**	0.020	2.296	**
BINDEP	+	-0.007	-1.164		-0.007	-1.190		-0.006	-1.001		-0.006	-1.034	
MULTI_CH	+	-0.077	-0.627		0.083	-0.663		-0.060	-0.484		0.062	-0.495	
DUALITY	+/-	0.003	0.022		-0.029	0.186		0.002	0.015		-0.014	0.092	
INTERCEPT		-3.755	-3.624	***	-5.153	-6.519	***	-4.254	-4.099	***	-3.786	-5.600	***
R-squared		0.435			0.425			0.426			0.424		
Adj. R-squared		0.404			0.394			0.394			0.394		
F-statistic		21.298			21.699			21.331			22.879		
p-value		0.000			0.000			0.000			0.000		
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Variables definition:

IO\_DEDI = Dedicated institutional ownership, % of shares held by dedicated institutions,, with ln transformation; EXTSR = Extent of reporting, number of sentences, with ln transformation (Ln\_EXTSR); QUALSR = Quality of reporting, 3 - quantitative disclosure, 2 - qualitative disclosure with specific explanations, 1 - general qualitative disclosure, and 0 - non-disclosure; FPERF = firm performance, return on assets; EXTSR\*FPERF = the interaction between EXTSR and financial performance, EXTSR x FPERF, with inverse transformation (INV\_EXTSR\*FPERF); QUALSR\*FPERF = the interaction between QUALSR and financial performance, QUALSR x FPERF, with inverse transformation (INV\_QUALSR\*FPERF); FSIZE = firm size, market capitalization with ln transformation (Ln\_FSIZE); DIV = dividend, dividend yield; LEV = leverage, total debt to total assets; RISK = risk, beta with ln transformation (Ln\_RISK); MANOWN = managerial ownership, % shares directly held by the managers; SHARIAH = Shariah-compliant status held by firms, 1 for yes, 0 for no; BSIZE = number of board members; AUDITOR = type of auditor, 1 for firm with Big 4 auditors, 0 for firms with non Big 4 auditors; ACSZ = audit committee size, % of audit committee members over total board members; BINDEP = % of independent directors over total board members; MULTI\_CH = 1 for firms where the chairman holds multiple directorship, 0 for vice versa; DUALITY = 1 for firms where the position of chairman and CEO are held by the same person, 0 for vice versa; N = 285.

\*\*\* significant at 1% level

\*\* significant at 5% level

\* significant at 10% level

With regards to the control variables, five control variables, namely the FSIZE, DIV, MANOWN, AUDITOR and ACSZ consistently influence IO\_TRANS either in the non-interaction or interaction models of SR-FPERF. The positive and significant magnitude of FSIZE on IO\_TRANS ( $p < 0.01$ ) indicates that transient IO are interested in firms with large sizes (Cox, et al., 2004; Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Muniandy & Barnes, 2010; Saleh, et al., 2010). Furthermore, the preference for firms with low MANOWN, having low audit committee members and having Big 4 auditors is consistent with expectations. Contrary to expectations, transient institutional investors are also found to invest in firms that give low dividend.

To answer the question if FPERF has a moderating effect on the relationship between SR and IO\_TRANS in both models, the interaction of SR with FPERF indicates insignificant effect on ownership by IO\_TRANS. Furthermore, the R-squared of the models with and without interaction do not show significant increment. For instance, when SR is measured by EXTSR, the R-squared shows about 44% of variables explained. Further, when interaction of SR and FPERF is added to the model, the R-squared still points to 44% of variables explained, which indicates that moderation does not exist. The same situation applies to the models with QUALSR as the measurement for SR, where the R-squared still points to 44% of variables explained, both in the original model and the interaction model. Based on these justifications, it is concluded that moderation effect does not exist, thus rejecting H<sub>2b</sub>.

Table 5-14 : Moderation effect results for transient IO models

		Eq (23) DV = IO_TRANS			Eq (5) DV = IO_TRANS			Eq (24) DV = IO_TRANS			Eq (6) DV = IO_TRANS		
	prediction	coeff	t-value	sig	coeff	t-value	sig	coeff	t-value	sig	coeff	t-value	sig
EXTSR		-0.026	-0.508		-0.013	-0.263		-	-		-	-	
QUALSR		-	-		-	-		0.022	0.144		0.012	0.088	
FPERF	+	0.011	1.578		0.013	-1.993	**	0.014	1.789	*	0.013	2.004	**
EXTSR*FPERF	+	-317.232	-0.606		-	-		-	-		-	-	
QUALSR*FPERF	+	-	-		-	-		-1.204	0.143		-	-	
FSIZE	+	0.310	6.613	***	0.311	6.713	***	0.304	6.361	***	0.304	6.340	***
DIV	+	-0.033	-1.786	*	-0.033	-1.774	*	-0.033	-1.788	*	-0.033	-1.803	*
LEV	-	0.002	0.573		0.002	0.583		0.003	0.563		0.002	0.560	
RISK	+/-	0.141	0.989		0.142	0.993		0.142	0.986		0.141	0.980	
MANOWN	-	-0.007	-2.220	**	-0.007	-2.249	**	-0.007	-2.242	**	-0.007	-2.241	**
SHARIAH	+/-	-0.026	-0.150		-0.025	-0.146		-0.022	-0.127		-0.159	-0.130	
BSIZE	+/-	-0.039	-0.960		-0.036	-0.881		-0.037	-0.915		-0.022	-0.925	
AUDITOR	+	0.207	1.685	*	0.210	1.713	*	0.205	1.676	*	0.204	1.671	*
ACSZ	+/-	-0.015	-2.600	***	-0.015	-2.522	**	-0.015	-2.496	**	-0.015	-2.525	**
BINDEP	+	-0.001	-0.170		-0.001	-0.183		-0.001	-0.239		-0.001	-0.236	
MULTI_CH	+	0.177	1.588		0.176	1.579		0.175	1.567		0.175	1.573	
DUALITY	+/-	-0.021	-0.149		-0.015	-0.110		-0.010	-0.068		0.011	-0.078	
INTERCEPT		-1.673	-1.777	*	-1.980	-2.504	***	-1.971	-2.045	**	-1.904	-2.309	**
R-squared		0.441			0.440			0.441			0.441		
Adj. R-squared		0.410			0.411			0.409			0.412		
F-statistic		22.279			23.723			22.132			23.813		
p-value		0.000			0.000			0.000			0.000		

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Variables definition:

IO\_TRANS = Transient institutional ownership, % of shares held by transient institutions,, with ln transformation; EXTSR = Extent of reporting, number of sentences, with ln transformation (Ln\_EXTSR); QUALSR = Quality of reporting, 3 - quantitative disclosure, 2 - qualitative disclosure with specific explanations, 1 - general qualitative disclosure, and 0 - non-disclosure; FPERF = firm performance, return on assets; EXTSR\*FPERF = the interaction between EXTSR and financial performance, EXTSR x FPERF, with inverse transformation (INV\_EXTSR\*FPERF); QUALSR\*FPERF = the interaction between QUALSR and financial performance, QUALSR x FPERF, with inverse transformation (INV\_QUALSR\*FPERF); FSIZE = firm size, market capitalization with ln transformation (Ln\_FSIZE); DIV = dividend, dividend yield; LEV = leverage, total debt to total assets; RISK = risk, beta with ln transformation (Ln\_RISK); MANOWN = managerial ownership, % shares directly held by the managers; SHARIAH = Shariah-compliant status held by firms, 1 for yes, 0 for no; BSIZE = number of board members; AUDITOR = type of auditor, 1 for firm with Big 4 auditors, 0 for firms with non Big 4 auditors; ACSZ = audit committee size, % of audit committee members over total board members; BINDEP = % of independent directors over total board members; MULTI\_CH = multiple directorship of the chairman, 1 for firms where the chairman holds multiple directorship, 0 for vice versa; DUALITY = 1 for firms where the position of chairman and CEO are held by the same person, 0 for vice versa; N = 285.

\*\*\* significant at 1% level

\*\* significant at 5% level

\* significant at 10% level

## **5.5 Sensitivity analysis**

Two types of sensitivity checks are performed, with the objective of: (1) assessing the robustness of the original results to alternative variables; and (2) addressing the issues of endogeneity. In sub-sections below, the results of both sensitivity checks are discussed.

### **5.5.1 Assessing the robustness of results with alternative variables**

To test the robustness of results, this study examines if the outcome of the moderation effect of financial performance on the relationship between SR and aggregate, dedicated and transient IO is different when different measurement is applied for measuring financial performance. The alternative variable tested as the proxy for FPERF is dividend (DIV), and it is hypothesized that the association between SR and aggregate, dedicated and transient IO is stronger in firms that yield higher dividend. The results of the test are presented in Table 5-15.

In Table 5-15, Eq (25) and Eq (26) represent the IO\_TOTAL models with the interaction of FPERF and DIV, where Eq (25) indicates the results when SR is measured by EXTISR, while Eq (26) specifies the results when SR is measured by QUALSR. IO\_DEDI models are represented by Eq (27) and Eq (28), where the former indicates the results when SR is measured by EXTISR, while the latter uses QUALSR as proxy for SR. The same situation also applies to the models representing IO\_TRANS, which are the Eq (29) and Eq (30).

To test whether the indirect effect of financial performance on the SR\_IO association is different when different proxy is used for FPERF, i.e., DIV is used to replace ROA, the focus is directed to the interaction of EXTISR with DIV and QUALSR with DIV in all panels. In Eq (25), the interaction of EXTISR and DIV shows a positive and significant effect on IO\_TOTAL. However, in Eq (26), when SR is measured by QUALSR, the interaction does not signify any significant impact. Nevertheless, the results in Eq (25) point out that the positive association of SR and IO\_TOTAL is stronger for firms with high dividend yield. In simpler words, institutional investors prefer to invest in firms that engage in SR, but at the same time, give high dividend to their shareholders. However, when the institutional investors are divided into IO\_DEDI and IO\_TRANS, no significant impact of the interaction of SR and DIV is found in all panels.

### **5.5.2 Addressing the threats of endogeneity with instrumental variables**

Wintoki et al. (2012) argue that endogeneity commonly occurs due to simultaneous causality or reverse causality. It is a situation where two variables are co-determined, such that each variable may affect the other simultaneously (Schultz, et al., 2010). As previous studies find that the presence of institutional owners in firms' ownership structure is associated with enhancement of sustainability engagement (Abd-Mutalib, et al., 2013; Coffey & Fryxell, 1991; Hayashi, 2003; Johnson & Greening, 1999; Oh & Chang, 2011), and sustainability engagement attracts institutional owners (Cox, et al., 2004; Cox & Wicks, 2011; Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Petersen & Vredenburg, 2009; Saleh, et al., 2010), the endogeneity

threats to this study are not taken for granted. Thus, in this section, the procedure to mitigate the endogeneity threats is discussed in detail, using the two stage least squares (TSLS) analysis with instrumental variables, following previous research that deals with endogeneity (Wan-Hussin & Bamahros, 2013).

The main independent variable in this study is SR, which is measured by EXTSR and QUALSR, while the dependent variables selected for this analysis is IO\_TOTAL, IO\_DEDI and IO\_TRANS. In determining the instruments for TSLS analysis, the instrument variables selected should impact the independent variable, but not the dependent variables (Wan-Hussin & Bamahros, 2013). The first choice of instrumental variable is board independence (BINDEP). Previous studies justify that independence of the board may ensure the improved quality of firms' reporting (Forker, 1992), while the second choice of instrumental variables is the auditor type (AUDITOR), as previous studies identify that Big 4 auditors are perceived to have high quality and expertise (Khurana & Raman, 2004) compared to the non Big 4 firms. Therefore, the quality and expertise of the auditors may enhance the level of firms' non-financial, as well as financial reporting.

Table 5-15: Robustness test with DYIELD as financial performance

	Eq (25) DV = IO_TOTAL				Eq (26) DV= IO_TOTAL			Eq (27) DV = IO_DEDI			Eq (28) DV= IO_DEDI			prediction	Eq (29) DV = IO_TRANS			Eq (30) DV= IO_TRANS		
	prediction	coeff	t-value	sig	coeff	t-value	sig	coeff	t-value	sig	coeff	t-value	sig		coeff	t-value	sig	coeff	t-value	sig
EXTSR	+	0.603	0.499		-	-		0.152	2.369	**	-	-			-0.033	-0.606		-	-	
QUALSR	+	-	-		9.016	1.894	*	-	-		0.209	0.951			-	-		0.064	0.355	
FPERF_DIV	+	-0.452	-0.801		0.257	0.421		0.002	0.059		-0.034	-1.067		+	-0.045	-1.703	*	-0.023	-0.876	
EXTSR*DIV	+	1.482	1.652	*	-	-		0.011	0.188		-	-		+	0.027	0.602		-	-	
QUALSR*DIV	+	-	-		-0.018	-0.004		-	-		0.315	1.329		+	-	-		-0.070	-0.408	
FPERF_ROA	+	-0.212	-1.632		-0.168	-1.294		-0.002	-0.213		-0.002	-0.277		+	0.012	1.928	*	0.013	2.034	**
FSIZE	+	4.344	5.177	***	3.990	5.033	***	0.350	6.875	***	0.342	7.158	***	+	0.034	6.218	***	0.305	6.392	***
LEV	-	0.042	0.599		0.023	0.336		-0.003	-0.826		-0.003	0.806		-	0.003	0.618		0.002	0.536	
RISK	+/-	-3.589	-1.417		-3.526	-1.432		-0.263	-1.774	*	-0.217	-1.496		+/-	0.148	1.030		0.136	0.937	
MANOWN	-	-0.159	-3.074	***	-0.159	-3.116	***	-0.005	-1.363		-0.005	-1.225		-	-0.007	-2.237	**	-0.007	-2.254	**
SHARIAH	+/-	0.599	0.151		1.364	0.357		0.430	2.565	**	0.417	2.480	**	+/-	-0.033	-0.191		-0.018	-0.104	
BSIZE	+/-	1.154	1.295		1.007	1.150		0.095	1.977	**	0.085	1.739	*	-	-0.037	-0.917		-0.036	-0.893	
AUDITOR	+	1.746	0.955		1.823	0.969		-0.069	-0.512		-0.065	-0.484		+	0.204	1.662	*	0.207	1.685	*
ACSZ	+/-	0.097	0.654		0.073	0.481		0.022	2.511	**	0.019	2.151	**	+/-	-0.015	-2.557	**	-0.014	-2.487	**
BINDEP	+	0.098	0.909		0.080	0.725		-0.007	-1.174		-0.006	-1.023		+	-0.001	-0.143		-0.001	-0.244	
MULTI_CH	+	-0.060	-0.031		0.339	0.173		-0.083	-0.668		-0.059	-0.482		+	0.175	1.567		0.175	1.565	
DUALITY	+/-	-3.765	-1.929	*	-3.282	-1.752	*	0.026	0.168		0.001	0.009		-	-0.021	-0.152		-0.008	-0.058	
INTERCEPT		-55.68	-3.487	***	-49.65	-3.149	***	-5.104	-5.846	***	-4.658	-5.221	***		-1.858	-2.262	**	-1.942	-2.354	**
R-squared		0.397			0.413			0.425			0.428				0.441			0.441		
Adj. R-squared		0.364			0.380			0.393			0.396				0.410			0.410		
F-statistic		9.756			10.486			20.252			21.645				22.339			22.139		
p-value		0.000			0.000			0.000			0.000				0.000			0.000		

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Variables definition:

IO\_TOTAL = Aggregate institutional ownership, % of shares held by institutional investors; IO\_DEDI = Dedicated institutional ownership, % of shares held by dedicated institutions, ie the IO\_GPF, IO\_GUT and IO\_GPL, with ln transformation (Ln\_IO\_DEDI); IO\_TRANS = Transient institutional ownership, % of shares held by transient institutions, ie the IO\_BANK, IO\_PMF and IO\_INS, with ln transformation (Ln\_IO\_TRANS); EXTSR = Extent of reporting, number of sentences, with ln transformation (Ln\_EXTSR); QUALSR = Quality of reporting, 3 - quantitative disclosure, 2 - qualitative disclosure with specific explanations, 1 - general qualitative disclosure, and 0 - non-disclosure; FPERF\_DIV = dividend, dividend yield; EXTSR\*DIV = the interaction between EXTSR and dividend, EXTSR x DIV, with ln transformation (Ln\_EXTSR\*DIV); QUALSR\*DIV = the interaction between QUALSR and dividend, QUALSR x DIV, with ln transformation (Ln\_QUALSR\*FPERF); FPERF = firm performance, return on assets; FSIZE = firm size, market capitalization, with ln transformation (Ln\_FSIZE); LEV = leverage, total debt to total assets; RISK = risk, beta with ln transformation (Ln\_RISK); MANOWN = managerial ownership, % shares directly held by the managers; SHARIAH = Shariah-compliant status held by firms, 1 for yes, 0 for no; BSIZE = board size, number of board members; AUDITOR = type of auditor, 1 for firm with Big 4 auditors, 0 for firms with non Big 4 auditors; ACSZ = audit committee size, % of audit committee members over total board members; BINDEP = board independence, % of independent directors over total board members; MULTI\_CH = multiple directorship of the chairman, 1 for firms where the chairman holds multiple directorship, 0 for vice versa; DUALITY = duality, 1 for firms where the position of chairman and CEO are held by the same person, 0 for vice versa; N = 285.

\*\*\* significant at 1% level

\*\* significant at 5% level

\* significant at 10% level

### 5.5.2.1 EXTSR as measurement for sustainability reporting

In this sub-section, this study examines if endogeneity threat exists when SR is measured by EXTSR. Several steps are taken to address the endogeneity concern. Firstly, the original OLS equation of Eq (1), Eq (3) and Eq (5) in section 4.5.4.1 are reused in this section and renamed as Equation 31a, Equation 32a and Equation 33a, as below, and all the models are regressed accordingly.

*Equation 31a:*

$$IO\_TOTAL = \alpha + \beta_1 EXTSR + \beta_2 FPERF + \beta_3 FSIZE + \beta_4 DIV + \beta_5 LEV + \beta_6 RISK + \beta_7 MANOWN + \beta_8 SHARIAH + \beta_9 BSIZE + \beta_{10} AUDITOR + \beta_{11} ACSZ + \beta_{12} BINDEP + \beta_{13} MULTI\_CH + \beta_{14} DUALITY + \varepsilon$$

*Equation 32a:*

$$IO\_DEDI = \alpha + \beta_1 EXTSR + \beta_2 FPERF + \beta_3 FSIZE + \beta_4 DIV + \beta_5 LEV + \beta_6 RISK + \beta_7 MANOWN + \beta_8 SHARIAH + \beta_9 BSIZE + \beta_{10} AUDITOR + \beta_{11} ACSZ + \beta_{12} BINDEP + \beta_{13} MULTI\_CH + \beta_{14} DUALITY + \varepsilon$$

*Equation 33a:*

$$IO\_TRANS = \alpha + \beta_1 EXTSR + \beta_2 FPERF + \beta_3 FSIZE + \beta_4 DIV + \beta_5 LEV + \beta_6 RISK + \beta_7 MANOWN + \beta_8 SHARIAH + \beta_9 BSIZE + \beta_{10} AUDITOR + \beta_{11} ACSZ + \beta_{12} BINDEP + \beta_{13} MULTI\_CH + \beta_{14} DUALITY + \varepsilon$$

The results of Equations 31a, 32a and 33a using OLS estimates are outlined in Table 5-16. Panels X, Y and Z describe the comparative results when using TSLS and OLS

for the models when the dependent variables refer to IO\_TOTAL, IO\_DEDI and IO\_TRANS respectively. In all the three equations, it is observed that when using OLS models, both instrumental variables, AUDITOR and BINDEP, do not significantly affect IO\_TOTAL and IO\_DEDI ( $p > 0.1$ ), and in IO\_TRANS model, BINDEP does not significantly affect the dependent variable ( $P > 0.1$ ).

The second step is to test whether AUDITOR and BINDEP significantly affect EXTSR. Therefore, all the exogenous variables are regressed to EXSTR, using the equation below, and named as Equation 34a. The findings stated in Panel W of Table 5-16 signify that both variables significantly affect EXTSR, which is a sign of good instrument (AUDITOR,  $p < 0.05$ ; BINDEP,  $p < 0.01$ ).

*Equation 34a*

$$EXTSR = \alpha + \beta_1 FPERF + \beta_2 FSIZE + \beta_3 DIV + \beta_4 LEV + \beta_5 RISK + \beta_6 MANOWN + \beta_7 SHARIAH + \beta_8 BSIZE + \beta_9 AUDITOR + \beta_{10} ACSZ + \beta_{11} BINDEP + \beta_{12} MULTI\_CH + \beta_{13} DUALITY + \varepsilon$$

The third step is TSLS analysis, with AUDITOR and BINDEP as instrument variables for IO\_TOTAL and IO\_DEDI models and only BINDEP as instrumental variable in IO\_TRANS model. In all panels X, Y and Z, the R-squared and adjusted R-squared show not much fluctuation either when using TSLS or OLS in all models. Although there is a slight increase in the coefficient for EXSTR in IO\_TOTAL model (Panel X), when using TSLS compared to using OLS (7.508 for TSLS versus 1.686 for OLS), the p-value and R-squared indicate almost consistent significance. The same situation may also be observed in the IO\_TRANS model (Panel Z), where the R-

squared, adjusted R-squared, coefficient and p-value are almost consistent. In IO\_DEDI model (Panel Y), by using OLS, although the p-value indicates significant impact of EXTSR when using OLS ( $p < 0.01$ ), in TSLS, the impact is not significant. Nevertheless, the coefficient does not show much fluctuation despite the different magnitude.

The important indication on whether the models suffer from endogeneity threats is based on the Hausman tests and Sargan over-identifying restrictions. Hausman test refers to the specification error test that may be used to test the simultaneity problem in OLS (Gujarati, 2003). In other words, Hausman test points out if the OLS estimates used in predicting an association are consistent. From the results in Table 5-16, the Hausman test in all three models (IO\_TOTAL: Chi-square = 1.843,  $p > 0.1$ ; IO\_DEDI: Chi-square = 1.709,  $p > 0.1$ ; IO\_TRANS: Chi-square = 0.039,  $p > 0.1$ ) indicate that all the OLS models are consistent. Therefore, it is unlikely that TSLS represents an improvement over OLS.

Sargan over-identifying restriction is a method to test the validity of instruments used in instrumental variables analysis (Gujarati, 2003). In instrumental variables analysis, it is appropriate to have an over-identified model, or have more instruments than the endogenous regressors (Adkins, 2013). From Table 5-16, Sargan statistics for each TSLS model indicate that the models are over-identified (IO\_TOTAL: Sargan statistics = 0.001,  $p > 0.1$ ; IO\_DEDI: Sargan statistics = 0.322,  $p > 0.1$ ), which points out that both instruments, AUDITOR and BINDEP, in the two models, are exogenous, and therefore, valid.

### 5.5.2.2 QUALSR as measurement for sustainability reporting

The next procedure in determining if this study is exposed to endogeneity threat is by conducting the TSLS analysis when SR is measured by QUALSR. Similar to the previous sub-section, a number of steps are taken to address the endogeneity concern. Firstly, the original OLS equation of Eq (2), Eq (4) and Eq (6) in section 4.5.4.1 are reused in this section and renamed as Equation 31b, Equation 32b and Equation 33b, as below, and all the models are regressed accordingly.

*Equation 31b:*

$$\begin{aligned} IO\_TOTAL = & \alpha + \beta_1 QUALSR + \beta_2 FPERF + \beta_3 FSIZE + \beta_4 DIV + \beta_5 LEV + \beta_6 RISK \\ & + \beta_7 MANOWN + \beta_8 SHARIAH + \beta_9 BSIZE + \beta_{10} AUDITOR + \beta_{11} ACSZ + \beta_{12} BINDEP \\ & + \beta_{13} MULTI\_CH + \beta_{14} DUALITY + \varepsilon \end{aligned}$$

*Equation 32b:*

$$\begin{aligned} IO\_DEDI = & \alpha + \beta_1 QUALSR + \beta_2 FPERF + \beta_3 FSIZE + \beta_4 DIV + \beta_5 LEV + \beta_6 RISK + \\ & \beta_7 MANOWN + \beta_8 SHARIAH + \beta_9 BSIZE + \beta_{10} AUDITOR + \beta_{11} ACSZ + \beta_{12} BINDEP + \\ & \beta_{13} MULTI\_CH + \beta_{14} DUALITY + \varepsilon \end{aligned}$$

*Equation 33b:*

$$\begin{aligned} IO\_TRANS = & \alpha + \beta_1 QUALSR + \beta_2 FPERF + \beta_3 FSIZE + \beta_4 DIV + \beta_5 LEV + \beta_6 RISK + \\ & \beta_7 MANOWN + \beta_8 SHARIAH + \beta_9 BSIZE + \beta_{10} AUDITOR + \beta_{11} ACSZ + \beta_{12} BINDEP + \\ & \beta_{13} MULTI\_CH + \beta_{14} DUALITY + \varepsilon \end{aligned}$$

Table 5-16: Testing for endogeneity – SR measured by EXTSR

	Panel W		Panel X				Panel Y				Panel Z			
	Equation 34a – OLS		Equation 31a – TSLS		Equation 31a – OLS		Equation 32a – TSLS		Equation 32a – OLS		Equation 33a – TSLS		Equation 33a – OLS	
	DV = EXTSR		DV = IO_TOTAL				DV = IO_DEDI				DV = IO_TRANS			
	coeff	sig	coeff	sig	coeff	sig	coeff	sig	coeff	sig	coeff	sig	coeff	sig
EXTSR			7.508	0.132	1.686	0.142	-0.178	0.531	0.160	0.002	-0.072	0.360	-0.013	0.793
BINDEP	0.015	0.008			0.088	0.426			-0.007	0.235			-0.001	0.855
AUDITOR	0.360	0.014			2.047	0.270			-0.067	0.621	0.231	0.132	0.210	0.088
FPERF	-0.007	0.410	-0.145	0.364	-0.187	0.157	-0.003	0.701	0.002	0.849	0.012	0.021	0.013	0.047
FSIZE	0.416	0.000	2.330	0.330	4.757	0.000	0.498	0.000	0.353	0.001	0.336	0.094	0.311	0.000
DIV	0.022	0.404	0.124	0.761	0.253	0.480	0.015	0.592	0.007	0.768	-0.031	0.045	-0.033	0.077
LEV	0.004	0.310	0.008	0.915	0.034	0.624	-0.002	0.681	-0.003	0.395	0.002	0.802	0.002	0.560
RISK	0.150	0.487	-4.749	0.190	-3.883	0.127	-0.220	0.153	-0.264	0.072	0.151	0.553	0.142	0.322
MANOWN	-0.001	0.886	-0.158	0.008	-0.162	0.002	-0.005	0.170	-0.005	0.171	-0.007	0.040	-0.007	0.025
SHARIAH	-0.150	0.484	1.925	0.671	1.051	0.791	0.384	0.039	0.433	0.009	-0.034	0.931	-0.025	0.884
BSIZE	0.083	0.107	0.746	0.430	1.233	0.165	0.125	0.023	0.096	0.044	-0.031	0.207	-0.036	0.379
ACSZ	0.001	0.928	0.103	0.492	0.106	0.473	0.021	0.020	0.022	0.011	-0.015	0.006	-0.015	0.012
MULTI_CH	0.067	0.640	-0.376	0.868	0.015	0.994	-0.064	0.633	0.083	0.508	0.180	0.208	0.176	0.116
DUALITY	-0.284	0.122	-1.781	0.445	-3.438	0.078	-0.069	0.698	-0.029	0.852	-0.033	0.758	-0.015	0.913
INTERCEPT	-3.896	0.000	-39.601	0.074	-62.351	0.000	-6.545	0.000	-5.153	0.001	-2.213	0.312	-1.980	0.013
R-squared	0.461		0.326		0.392		0.347		0.425		0.437		0.440	
Adj. R-squared	0.435		0.297		0.361		0.318		0.394		0.410		0.411	
F-statistic (p-value)	19.325 (0.000)		11.704 (0.000)		10.204 (0.000)		20.770 (0.000)		21.699 (0.000)		24.949 (0.000)		23.723 (0.000)	
Hausman test Chi-square (p-value)			1.843 (0.175)				1.709 (0.191)				0.039 (0.843)			
Sargan statistics (p-value)			0.001 (0.977)				0.322 (0.570)							
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Variables definition:

IO\_TOTAL = Aggregate institutional ownership, % of shares held by aggregate institutional investors; IO\_DEDI = Dedicated institutional ownership, % of shares held by dedicated institutions, with ln transformation, IO\_TRANS = Transient institutional ownership, % of shares held by transient institutions, with ln transformation; EXTSR = Extent of reporting, number of sentences, with ln transformation (Ln\_EXTSR); FPERF = financial performance, return on assets; FSIZE = firm size, market capitalization with ln transformation (Ln\_FSIZE); DIV = dividend, dividend yield; LEV = leverage, total debt to total assets; RISK = risk, beta with ln transformation (Ln\_RISK); MANOWN = managerial ownership, % shares directly held by the managers; SHARIAH = Shariah-compliant status held by firms, 1 for yes, 0 for no; BSIZE = number of board members; AUDITOR = type of auditor, 1 for firm with Big 4 auditors, 0 for firms with non Big 4 auditors; ACSZ = audit committee size, % of audit committee members over total board members; BINDEP = board independence, % of independent directors over total board members; MULTI\_CH = multiple directorship of the chairman, 1 for firms where the chairman holds multiple directorship, 0 for vice versa; DUALITY = 1 for firms where the position of chairman and CEO are held by the same person, 0 for vice versa; N = 285.

The results of Equation 31b, 32b and 33b using OLS estimates are outlined in Table 5-17. Comparative results when using TSLS and OLS for the models when the dependent variables refer to IO\_TOTAL, IO\_DEDI and IO\_TRANS, are described in Panels X, Y and Z, respectively. In all the three equations, it is observed that when using OLS models, both instrumental variables, AUDITOR and BINDEP, do not significantly affect IO\_TOTAL and IO\_DEDI, while only BINDEP does not significantly affect IO\_TRANS ( $p > 0.1$ ).

The next step is to test whether AUDITOR and BINDEP significantly affect QUALSR. Therefore, all the exogenous variables are regressed to QUALSR, using the equation below, and named as Equation 34b. The findings stated in Panel W of Table 5-17 signify that both variables significantly affect EXTSR, which is a sign of good instrument (AUDITOR,  $p < 0.05$ ; BINDEP,  $p < 0.10$ ).

*Equation 34b*

$$\begin{aligned} \text{QUALSR} = & \alpha + \beta_1 \text{FPERF} + \beta_2 \text{FSIZE} + \beta_3 \text{DIV} + \beta_4 \text{LEV} + \beta_5 \text{RISK} + \beta_6 \text{MANOWN} + \\ & \beta_7 \text{SHARIAH} + \beta_8 \text{BSIZE} + \beta_9 \text{AUDITOR} + \beta_{10} \text{ACSZ} + \beta_{11} \text{BINDEP} + \beta_{12} \text{MULTI\_CH} + \\ & \beta_{13} \text{DUALITY} + \varepsilon \end{aligned}$$

The third step is to perform TSLS analysis, with AUDITOR and BINDEP as instrument variables. Not much fluctuation is observed in the R-squared and adjusted R-squared also shows not much fluctuation by using TSLS or OLS in all models in all three Panels X, Y and Z, despite the increase in the coefficient for QUALSR in IO\_TOTAL model (Panel X), when using TSLS compared to using OLS (29.640 for TSLS versus 9.003 for OLS), and different significance levels. The same situation is



also observed in the IO\_DEDI model (Panel Y), where the R-squared, adjusted R-squared, coefficient and p-value are consistent, despite higher different coefficient and significance level for TSLS and OLS (coeff = -0.694,  $p > 0.10$  for TSLS; coeff = 0.441,  $p < 0.01$  for OLS) . In IO\_TRANS model (Panel Z), both methods TSLS and OLS show no significant impact of SR on IO\_TRANS.

The important indication on whether the models suffer from endogeneity threats is based on the Hausman tests and Sargan over-identifying restrictions. Hausman test refers to the specification error test that may be used to test the simultaneity problem in OLS (Gujarati, 2003). In other words, Hausman test points out if the OLS estimates used in predicting an association are consistent. From the results in Table 5-17, the Hausman test in all three models (IO\_TOTAL: Chi-square = 1.571,  $p > 0.1$ ; IO\_DEDI: Chi-square = 1.263,  $p > 0.1$ ; IO\_TRANS: Chi-square = 0.063,  $p > 0.1$ ) indicate that all the OLS models are consistent. Therefore, it is unlikely that TSLS represents an improvement over OLS.

Sargan over-identifying restriction is a method to test the validity of instruments used in instrumental variables analysis (Gujarati, 2003). In instrumental variables analysis, it is appropriate to have over-identified model, or have more instruments than the endogenous regressors (Adkins, 2013). From Table 5-17, Sargan statistics for each TSLS model indicates with dependent variables of IO\_TOTAL and IO\_DEDI, are over-identified (IO\_TOTAL: Sargan statistics = 0.002,  $p > 0.1$ ; IO\_DEDI: Sargan statistics = 0.315,  $p > 0.1$ ), which points out that both instruments, AUDITOR and BINDEP, in the two models, are exogenous, and therefore, valid.

Table 5-17: Testing for endogeneity – SR measured by QUALSR

	Panel W		Panel X				Panel Y				Panel Z			
	Equation 34b – OLS		Equation 31b – TSLS		Equation 31b – OLS		Equation 32b – TSLS		Equation 32b – OLS		Equation 33b – TSLS		Equation 33b – OLS	
	DV = QUALSR		DV = IO_TOTAL				DV = IO_DEDI				DV = IO_TRANS			
	coeff	sig	coeff	sig	coeff	sig	coeff	sig	coeff	sig	coeff	sig	coeff	sig
QUALSR			29.640	0.145	9.003	0.006	-0.694	0.542	0.441	0.002	-0.291	0.360	0.012	0.930
BINDEP	0.004	0.064			0.080	0.467			-0.006	0.302			-0.001	0.814
AUDITOR	0.092	0.031			1.822	0.335			-0.050	0.709	0.232	0.137	0.204	0.096
FPERF	-0.004	0.299	-0.096	0.577	-0.168	0.202	-0.004	0.643	0.001	0.885	0.012	0.021	0.013	0.046
FSIZE	0.163	0.000	0.617	0.861	3.990	0.000	0.537	0.008	0.347	0.000	0.353	0.094	0.304	0.000
DIV	0.004	0.600	0.173	0.653	0.254	0.463	0.013	0.627	0.009	0.716	-0.031	0.045	-0.033	0.073
LEV	0.002	0.202	-0.020	0.829	0.023	0.738	-0.001	0.813	-0.004	0.369	0.002	0.802	0.002	0.576
RISK	-0.012	0.848	-3.273	0.216	-3.525	0.148	-0.255	0.110	-0.236	0.103	0.137	0.553	0.141	0.328
MANOWN	-0.001	0.723	-0.151	0.009	-0.159	0.002	-0.005	0.170	-0.005	0.174	-0.007	0.040	-0.007	0.026
SHARIAH	-0.063	0.451	2.657	0.575	1.363	0.725	0.368	0.067	0.437	0.009	-0.041	0.931	-0.159	0.897
BSIZE	0.041	0.029	0.164	0.896	1.007	0.248	0.139	0.041	0.091	0.061	-0.025	0.207	-0.022	0.356
ACSZ	0.004	0.195	-0.005	0.981	0.073	0.625	0.024	0.026	0.020	0.022	-0.013	0.006	-0.015	0.012
MULTI_CH	-0.023	0.628	0.829	0.701	0.339	0.862	-0.092	0.512	0.062	0.621	0.168	0.207	0.175	0.117
DUALITY	-0.070	0.179	-1.825	0.422	-3.282	0.084	-0.068	0.708	-0.014	0.927	-0.032	0.758	0.011	0.938
INTERCEPT	-2.142	0.000	-5.321	0.905	-49.638	0.002	-7.341	0.003	-3.786	0.000	-2.553	0.312	-1.904	0.022
R-squared	0.462		0.330		0.413		0.318		0.424		0.430		0.441	
Adj. R-squared	0.436		0.301		0.382		0.288		0.394		0.402		0.412	
F-statistic (p-value)	10.072 (0.000)		11.877 (0.000)		11.177 (0.000)		17.087 (0.000)		22.879 (0.000)		24.198 (0.000)		23.813 (0.000)	
Hausman test – Chi-square (p-value)			1.571 (0.210)				1.263 (0.261)				0.063 (0.801)			
Sargan test – LM (p-value)			0.002 (0.960)				0.315 (0.575)							
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Variables definition:

IO\_TOTAL = Aggregate institutional ownership, % of shares held by aggregate institutional investors; IO\_DEDI = Dedicated institutional ownership, % of shares held by dedicated institutions,, with ln transformation, IO\_TRANS = Transient institutional ownership, % of shares held by transient institutions , with ln transformation; QUALSR = Quality of reporting, 3 - quantitative disclosure, 2 - qualitative disclosure with specific explanations, 1 - general qualitative disclosure, and 0 - non-disclosure; FPERF = financial performance, return on assets; FSIZE = firm size, market capitalization with ln transformation (Ln\_FSIZE); DIV = dividend, dividend yield; LEV = leverage, total debt to total assets; RISK = risk, beta with ln transformation (Ln\_RISK); MANOWN = managerial ownership, % shares directly held by the managers; SHARIAH = Shariah-compliant status held by firms, 1 for yes, 0 for no; BSIZE = number of board members; AUDITOR = type of auditor, 1 for firm with Big 4 auditors, 0 for firms with non Big 4 auditors; ACSZ = audit committee size, % of audit committee members over total board members; BINDEP = board independence, % of independent directors over total board members; MULTI\_CH = multiple directorship of the chairman, 1 for firms where the chairman holds multiple directorship, 0 for vice versa; DUALITY = 1 for firms where the position of chairman and CEO are held by the same person, 0 for vice versa; N = 285.

As a conclusion, in IO\_TOTAL and IO\_DEDI models, Hausman tests indicate that OLS is consistent and TSLS does not show improvement over OLS, while Sargan statistics points out that the instruments used are valid. For IO\_TRANS models, although Sargan statistics could not be obtained as the models only use one instrumental variable, the Hausman test results indicate that OLS results are consistent. With all these findings, whether by using EXTSR or QUALSR in measuring SR, it may be concluded that all the models used in this study are not exposed to endogeneity threats.

## **5.6 Other Analysis - Curvi-linear relationship of Managerial Ownership and Institutional Ownership**

The purpose for this analysis is to identify if the curvi-linear relationship exists between MANOWN and INSTOWN. Previous studies found that institutional owners are more likely to invest in firms with low managerial ownership (Abdul Wahab, et al., 2008; Bushee & Goodman, 2007; Koh, 2003). However, the results in Section 5.4.1.4.3 show that insurance companies indicate positive preference to large managerial ownership. As such, this analysis tries to examine if the relationship between MANOWN and INSTOWN is curvi-linear, which means that the relationship is positive in the beginning, however, becomes negative at a certain level of institutional ownership. Two regression models to test the curvi-linear relationships are as follows. The results are indicated in Table 18.

Equation for model with EXTISR as measurement for SR (Eq 35) :

$$Y = \alpha + \beta_1EXTISR + \beta_2FPERF + \beta_3FSIZE + \beta_4DIV + \beta_5LEV + \beta_6RISK + \beta_7MANOWN + \beta_8MANOWN^2 + \beta_9 SHARIAH + \beta_{10}BSIZE + \beta_{11}AUDITOR + \beta_{12}ACSZ + \beta_{13}BINDEP + \beta_{14}MULTI\_CH + \beta_{15}DUALITY + \varepsilon$$

Equation for model with QUALSR as measurement for SR (Eq 36):

$$Y = \alpha + \beta_1QUALSR + \beta_2FPERF + \beta_3FSIZE + \beta_4DIV + \beta_5LEV + \beta_6RISK + \beta_7MANOWN + \beta_8MANOWN^2 + \beta_9 SHARIAH + \beta_{10}BSIZE + \beta_{11}AUDITOR + \beta_{12}ACSZ + \beta_{13}BINDEP + \beta_{14}MULTI\_CH + \beta_{15}DUALITY + \varepsilon$$

In Table 18, in both models,  $MANOWN^2$  indicate significant positive values, which point out that there is a positive curvi-linear relationship between  $MANOWN$  and  $INSTOWN$ . The results thus support the prediction made in earlier section. In the previous section, the study predict that new firms, with small sizes will have high ownership by managers, thus is an attraction to institutional investors such as insurance companies (Cox, et al., 2004) as insurance companies prefer to invest in smaller firms as they may have the ability to influence the managers (Graves & Waddock, 1994). Therefore, higher managerial ownership will be positively associated to institutional ownership. However, as the firms grow, they will face the agency conflict, thus by increasing the institutional ownership, such conflict may be countered. Thus, the relationship between managerial ownership and institutional ownership will be negatively related.

Table 5-18: Curvi-linear relationship of MANOWN and INSTOWN

	prediction	Eq (35) DV = IO_TOTAL			Eq (36) DV = IO_TOTAL		
		#	coeff	t-value	sig	coeff	t-val
EXTSR	+	1.699	1.484		-	-	
QUALSR	+	-	-		8.878	2.751	***
FPERF	+	-0.198	-1.503		-0.179	-1.362	
FSIZE	+	4.595	5.717	***	3.861	4.875	***
DIV	+	0.282	0.794		0.284	0.820	
LEV	-	0.038	0.548		0.027	0.394	
RISK	+/-	-4.076	-1.611		-3.712	-1.526	
MANOWN	-	-0.532	-3.474	***	-0.513	-3.422	***
MANOWN_SQ	+	0.008	2.881	***	0.007	2.841	***
SHARIAH	+/-	1.415	0.358		1.702	0.441	
BSIZE	+/-	1.085	1.233		0.871	1.009	
AUDITOR	+	1.847	0.986		1.647	0.866	
ACSZ	+/-	0.083	0.564		0.051	0.345	
BINDEP	+	0.091	0.835		0.083	0.771	
MULTI_CH	+	0.087	0.044		0.406	0.208	
DUALITY	+/-	-3.777	-1.914	*	-3.619	-1.880	
INTERCEPT		-57.023	-3.721	***	-44.859	-2.822	***
R-squared		0.403			0.422		
Adj. R squared		0.370			0.390		
F-statistic		9.970			10.936		
p-value		0.000			0.000		
Variables definition:							
<p>IO_TOTAL = Institutional ownership, % of shares held by institutional investors; EXTSR = Extent of reporting, number of sentences, with ln transformation (Ln_EXTSR); QUALSR = Quality of reporting, 3 - quantitative disclosure, 2 - qualitative disclosure with specific explanations, 1 - general qualitative disclosure, and 0 - non-disclosure; FPERF = firm performance, return on assets; FSIZE = firm size, market capitalization with ln transformation (Ln_FSIZE); DIV = dividend, dividend yield; LEV = leverage, total debt to total assets; RISK = risk, beta with ln transformation (Ln_RISK); MANOWN = managerial ownership, % shares directly held by the managers; MANOWN<sup>2</sup> = squared of MANOWN; SHARIAH = Shariah-compliant status held by firms, 1 for yes, 0 for no; BSIZE = board size, number of board members; AUDITOR = type of auditor, 1 for firm with Big 4 auditors, 0 for firms with non Big 4 auditors; ACSZ = audit committee size, % of audit committee members over total board members; BINDEP = board independence, % of independent directors over total board members; MULTI_CH = multiple directorship of the chairman, 1 for firms where the chairman holds multiple directorship, 0 for vice versa; DUALITY = duality, 1 for firms where the position of chairman and CEO are held by the same person, 0 for vice versa; N = 285.</p> <p>*** significant at 1% level  ** significant at 5% level  * significant at 10% level</p>							

## 5.7 Chapter summary

This chapter presents the results of the impact of SR on IO, and the moderating impact of FPERF on the relationship between the two. Specifically, this chapter deals with the findings of the impact of SR on aggregate, dedicated and transient IO, and specific types of dedicated and transient IO. Furthermore, the moderating impact of FPERF is examined on the relationship between SR and the aggregate, dedicated and transient IO.

Based on the OLS models, the results indicate that SR shows positive and significant impact on aggregate IO when SR is measured by QUALSR, but not EXTSR. In addition, when IO is dichotomized into dedicated and transient IO, different results are found, where SR signifies positive and significant impact on dedicated IO, but no impact is found on transient IO. Furthermore, when SR is tested on specific dedicated and transient IO, it is observed that SR, when measured by EXTSR, exerts positive and significant impact on all IO specified as dedicated; however, when SR is measured by QUALSR, the significant impact is only found in two out of three institutions specified as dedicated. Additionally, when SR is tested on specific transient IO, it is found that SR exerts no impact on all three IO specified as transient, by both measures.

On the indirect effect of FPERF, the moderating effect of FPERF is found on the relationship between SR and aggregate IO. However, when IO is dichotomized into dedicated and transient IO, the moderating effect is found only in the SR-IO\_TOTAL and SR-IO\_DEDI relationship, but none in the SR-IO\_TRANS models. The

interesting point is that the moderating effects are found to be in negative magnitude, which denotes that in deciding to invest in firms that engage in SR, institutional investors prefer firms with low FPERF.

In answering the research question “Is the impact of sustainability reporting on institutional ownership different between dedicated and transient institutional ownership?”, this study concludes that different impact of SR may be observed on the ownership of dedicated and transient institutional investors, thus, justifying that the difference in investment horizons or behavior results in different perspectives on SR when making investment decision, therefore, confirming the hypotheses. Furthermore, in answering the research question, “Does financial performance exert a moderating impact on the relationship between sustainability reporting and aggregate, dedicated and transient institutional ownership?”, this study justifies that the moderating impact only occurs in the SR-IO\_TOTAL and SR-IO\_DEDI relationship, but not in SR-IO\_TRANS relationship. Although the moderating effect is justified, the magnitudes of the moderation impacts are in negative direction, thus not lending support for the hypotheses.



## **CHAPTER 6 : DISCUSSIONS AND CONCLUSIONS**

### **6.1 Introduction**

This chapter discusses the findings of the main results presented earlier in the previous chapter. The discussions of all models relating to the association between sustainability reporting and institutional ownership, the moderating impact of financial performance on the association between sustainability reporting and institutional ownership and the results of the control variables are presented in section 6.2. This is followed by the implications of study in section 6.3. Section 6.4 reports the conclusions, while section 6.5 offers the limitations of the study and suggestions for future research avenues. Finally, in section 6.6, the summary of the chapter is provided.

### **6.2 Discussions of the study**

Based on the results in section 5.4, the findings of all the main models are discussed in the following sections.

#### **6.2.1 Discussions on first research question**

The first research question aims to answer if sustainability reporting exerts different influence on the ownership by dedicated and transient institutional investors. Section

6.2.1.1 discusses the results of the association between sustainability reporting and aggregate institutional ownership. Section 6.2.1.2 argues on the different impacts of sustainability reporting on dedicated and transient institutional ownership, while sections 6.2.1.3 and 6.2.1.4 discuss the impact of sustainability reporting on specific dedicated and transient institutional ownership.

### **6.2.1.1 Sustainability reporting and aggregate institutional ownership**

The results in Table 5-8 present the OLS or multiple regression analysis used to test if sustainability reporting is positively associated to the ownership of aggregate institutional investors. Two models, namely Eq (1) and Eq (2) depict the results for different measures for sustainability reporting, where the former measures sustainability reporting by the extent of reporting (EXTSR) and the latter measures sustainability reporting by the quality of reporting (QUALSR). In Eq (1), the R-squared is 0.392 and the adjusted R-squared is 0.361 (F statistics = 10.204,  $p < 0.01$ ), while in Eq (2), the R-squared is 0.413 and the adjusted R-squared is 0.382 (F statistics = 11.177,  $p < 0.01$ ), which indicate that both R-squared and adjusted R-squared are moderately high, as well as statistically significant, thus are signs of good predictive models for aggregate institutional ownership. Furthermore, the adjusted R-squared in both models indicate that more than 36% of the variation in the institutional ownership is explained by the models. Both adjusted R-squared in these models are also higher compared to 0.2141 in a similar Malaysian study (Saleh, et al., 2010). Both R-squared in the models of this study are higher compared to a similar

foreign study with 0.134 (Mahoney & Roberts, 2007); however it is lower compared to another study, which indicates R-squared of 0.51 (Graves & Waddock, 1994).

On the association between sustainability reporting and aggregate institutional ownership, the study finds that sustainability reporting influences aggregate institutional ownership when sustainability reporting is measured by QUALSR, but not EXTSR, thus indicating that the institutional owners prefer to invest in firms that report good quality of sustainability engagement, but not in firms with large quantity of reporting. The results also conclude that firms which engage in sustainability commitments manage to attract investment from institutional owners, which is also evident in previous similar studies (Graves & Waddock, 1994; Mahoney & Roberts, 2007; Petersen & Vredenburg, 2009; Saleh, et al., 2010). Additionally, the results support the premise of the Stakeholder Theory, which posits that firms which address the claims of the stakeholders, may create value in the long-run (Freeman, 1984), and thus have the ability to attract institutional investors.

#### **6.2.1.2 Sustainability reporting, dedicated and transient institutional ownership**

The results in Table 5-9 present the OLS or multiple regression analysis used to test the association between sustainability reporting with dedicated and transient institutional ownership. Eq (3) and Eq (4) present the results for the association between sustainability reporting with the former, while Eq (5) and Eq (6) depict the association between sustainability reporting with the latter. Eq (3) and Eq (5) depict the results when sustainability reporting is measured by the extent of reporting

(EXTSR), while Eq (4) and Eq (6) show the results when sustainability reporting is measured by the quality of reporting (QUALSR).

In all four models, the R-squared and adjusted R-squared show that about 40% of variations is explained by the models. Furthermore, all four models also indicate F-statistics with significant p-values ( $p < 0.01$ ), thus signaling that all models are statistically significant and good predictive models for dedicated and transient institutional ownership.

The R-squared of the dedicated institutional ownership models of this study is higher (R-squared = 0.425 in Eq (3) and 0.424 in Eq (4)), compared to a similar foreign study with 0.306 (Cox, et al., 2004). For the transient institutional ownership models, the R-squared of 0.440 in Eq (5) and 0.441 in Eq (6) also indicate higher variations explained compared to a previous foreign study, with the R-squared of 0.233 (Cox, et al., 2004).

On the association between sustainability reporting with dedicated and transient institutional ownership, the study finds that sustainability reporting exerts positive and significant influence on the ownership by dedicated institutional investors. However, no significant effect is found on the share ownership by transient institutions. These results conclude that dedicated institutions, which have long-term behavior in holding shares, will have the patience to wait for the benefits resulting from sustainability engagement to materialize. Thus, dedicated institutional owners are attracted to invest in firms that engage in sustainability commitments. The results also justify the premise of the Stakeholder Theory, where firms that cater to stakeholders' needs, in

the long-run, may create value (Freeman, 1984), thus, have the ability to attract IO; and support the findings from previous studies that justify the positive association between sustainability reporting and dedicated institutional ownership (Cox, et al., 2004; Cox & Wicks, 2011). On the contrary, the non-association between sustainability reporting and transient institutional ownership justifies that transient institutions are myopic when making investment decisions. Sustainability reporting by potential firms is not something to be considered in the investment making process, thus, the impact of sustainability reporting is totally weak compared to those on the ownership of dedicated institutions. The results thus support the premise of the Myopic Institutions Theory, which posits institutional owners tend to be myopic or short-sighted when making investment decisions (Hansen & Hill, 1991), and findings in previous studies (Cox, et al., 2004; Cox & Wicks, 2011).

### **6.2.1.3 Sustainability reporting and specific dedicated institutions**

Table 5-10 depicts the results of the impact of sustainability reporting on the specific dedicated institutional ownership, namely the government-managed pension funds, represented by Eq (7) and Eq (8), government-managed unit trust funds represented by Eq (9) and Eq (10), and government-managed pilgrimage funds, represented by Eq (11) and Eq (12).

In Eq (7), when sustainability reporting is measured by the extent of reporting (EXTSR), the R-squared is 0.512, and the adjusted R-squared is 0.487 ( $F = 19.933$ ,  $p < 0.01$ ), which show that the model is statistically significant. Furthermore, the R-

squared and adjusted R-squared point out that about 50% of the variations in the ownership of government-managed pension funds is explained by the model. Similar results are observed when sustainability reporting is measured by the quality of reporting (QUALSR), where R-squared is 0.527, and adjusted R-squared is 0.503 (F statistics = 23.293,  $p < 0.01$ ), thus explaining that the model is statistically significant and the variations in the ownership of government-managed pension funds is explained by about 50% by the model. Additionally, the R-squared of the current study in both models is much more higher compared to a similar previous study with R-squared of 0.194 (Cox, et al., 2004).

With regards to the association of sustainability reporting and the ownership by the government-managed pension funds, in both models, the study finds that sustainability reporting exerts significant positive impact on the ownership of government-managed pension funds ( $p < 0.05$  when sustainability reporting is measured by EXTSR and  $p < 0.01$  when sustainability reporting is measured by QUALSR). The results hence support the premise of the Stakeholder Theory, where firms that cater to stakeholders' needs, in long-run may create value (Freeman, 1984). Therefore, as pension funds are associated with long-term investment horizons (Ryan & Schneider, 2002), it is not surprising that sustainability reporting, which benefits are materialized in long-run, may be a significant factor for pension funds in making investment decisions. Additionally, the results also support the findings made in similar foreign studies on the association of sustainability reporting with the ownership of pension funds (Cox, et al., 2004; Cox & Wicks, 2011).

The next discussion is on the association of sustainability reporting with the ownership by government-managed unit trust funds, which is presented by Eq (9) and Eq (10). In Eq (9), when sustainability reporting is measured by the extent of reporting (EXTSR), the R-squared is 0.305, while the adjusted R-squared is 0.269 (F statistics = 5.363,  $p < 0.01$ ), which shows that the model is statistically significant. Similarly, statistically significant model may also be observed when sustainability reporting is measured by the quality of reporting (QUALSR), where R-squared is 0.312, and adjusted R-squared is 0.274 (F statistics = 5.263,  $p < 0.01$ ). Therefore, the results of R-squared and adjusted R-squared point out that both models are statistically significant and the variations in the ownership of government-managed pension funds is explained by about 30%.

On the association of sustainability reporting and the ownership by the government-managed unit trust funds, in both models, the study finds positive and significant impact of sustainability reporting on the ownership of government-managed unit trust funds ( $p < 0.01$  when sustainability reporting is measured by EXTSR and  $p < 0.05$  when sustainability reporting is measured by QUALSR). The results hence support the premise of the Stakeholder Theory, which posits that firms which cater to stakeholders' needs, in long-run may create value (Freeman, 1984). As government-managed unit trust funds are associated with dedicated or long-term behavior in making investment decisions, which is clearly stated in their investment philosophy ([www.pnb.com.my](http://www.pnb.com.my)), and the fact that this type of institution is highly controlled by the government (which is highly dedicated to sustainability agenda), the positive association between sustainability reporting and the ownership by government-managed unit trust funds is as expected. Previous studies justify that unit trusts or

mutual funds are associated with transient behavior; thus, sustainability reporting is not a concern in making investment decision (Cox, et al., 2004; Cox & Wicks, 2011). The results of this study, however, provide new angles on the relationship between sustainability reporting and the ownership of unit trust funds, where the government's influence on the unit trusts funds may pressure such institutions to behave positively towards sustainability engagement.

The following discussion is on the association of sustainability reporting and the ownership by government-managed pilgrimage funds, which is presented by Eq (11) and Eq (12). In Eq (11), when sustainability reporting is measured by the extent of reporting (EXTSR), the R-squared is only 0.096, while the adjusted R-squared is 0.049. Similar results are observed when sustainability reporting is measured by the quality of reporting (QUALSR), where R-squared is 0.085, and adjusted R-squared is 0.037. The low R-squared and adjusted R-squared signal that in both models, the variations in the ownership of government-managed pilgrimage funds explained by the model is less than 10%. Despite the low variations explained, both models are statistically significant with F-statistics of 2.369 ( $p < 0.01$ ) in Eq (11) and 2.293 ( $p < 0.01$ ) in Eq (12).

With regards to the association of sustainability reporting and the ownership by the government-managed pilgrimage funds, the study finds positive and significant impact of sustainability reporting on the ownership of government-managed pension funds when sustainability reporting is measured by EXTSR ( $p < 0.10$ ), and no significant association when sustainability reporting is measured by QUALSR. Although the impact is weak, significant impact is established, thus justifying that



institutions involved in societal obligations, such as foundations and charities, have dedicated behavior in investment decision making (Cox, et al., 2004). Therefore, sustainability is a factor to be considered in investment decision making. The findings from this study provide a unique contribution as up to this date, limited evidence has been found on the impact of sustainability on the ownership of government-managed pilgrimage funds.

#### **6.2.1.4 Sustainability reporting and specific transient institutions**

Table 5-11 depicts the results of the impact of sustainability reporting on the specific transient institutional ownership, namely the banks, represented by Eq (13) and Eq (14), private-managed mutual funds represented by Eq (15) and Eq (16), and insurance companies, represented by Eq (17) and Eq (18).

In Eq (13), when sustainability reporting is measured by the extent of reporting (EXTSR), the R-squared is 0.441, and the adjusted R-squared is 0.412 (F statistics = 23.723,  $p < 0.01$ ), which signify that the model is statistically significant. Similar results are observed when sustainability reporting is measured by the quality of reporting (QUALSR), where R-squared is 0.441, and adjusted R-squared is 0.412 (F-statistics = 23.813,  $p < 0.01$ ), thus explaining that both models are statistically significant and that 44% variations in the ownership of banks is explained by both models.

With regards to the association of sustainability reporting and the ownership by the banks, in both models, the study finds that sustainability reporting exerts no significant impact on the ownership of the banks. The results thus support the premise of the Myopic Institutions Theory, which posits that institutional owners are myopic or short-sighted when making investment decisions; as such, the fund managers of the institutions may direct their decision to risk aversion and focus on achieving short-term profit from an investment (Hansen & Hill, 1991). As banks are the types of institutions which have been identified as having short-term investment horizon (Zahra, 1996), it is not surprising if sustainability reporting, which benefits may only be materialized in long-run, is not a significant factor for banks when they make investment decisions.

The next discussion is on the association of sustainability reporting with the ownership by private-managed mutual funds, which is presented by Eq (15) and Eq (16). In both models, the R-squared is 0.446, while the adjusted R-squared is 0.417 (F statistics = 16.657,  $p < 0.01$  in Eq (15) and F statistics = 16.680,  $p < 0.01$  in Eq (16)). Therefore, the results of R-squared and adjusted R-squared point out that both models are statistically significant and the variation in the ownership of private-managed mutual funds is explained by about 44% in both models .

On the association of sustainability reporting and the ownership by the private-managed mutual funds, in both models, although the study finds positive impact, the results are insignificant. Similar to the situation of the banks, the results hence support the premise of the Myopic Institutions Theory, which posits that institutional owners are myopic or short-sighted when making investment decisions. As such, the fund

managers of the institutions may direct their decision to risk aversion and focus on achieving short-term profit from an investment (Hansen & Hill, 1991). Furthermore, the ability of unit trust and mutual fund managers to maintain their position is determined by their performance and also the managers' portfolio choices (Chevalier & Ellison, 1999); managers are also faced with punishment if their actions deviate from other managers (Chevalier & Ellison, 1999). As such, in order to maintain their positions, unit trust and mutual fund managers are pressured to present persistent short run performance (Du, et al., 2009). Thus, social responsibility factors are not the factors to be considered, as the benefits from these activities may only occur in the long horizon. Furthermore, the results of the current study are consistent with previous studies which justify the non-associations of sustainability reporting and ownership by unit trust and mutual funds (Cox, et al., 2004; Cox & Wicks, 2011).

The following discussion is on the association of sustainability reporting with the ownership by insurance companies, which is presented by Eq (17) and Eq (18). In Eq (17), when sustainability reporting is measured by the extent of reporting (EXTSR), the R-squared is only 0.258, while the adjusted R-squared is 0.219. Similar results are observed when sustainability reporting is measured by the quality of reporting (QUALSR), where R-squared is 0.259, and adjusted R-squared is 0.220. Both models are statistically significant with F-statistics of 6.162 ( $p < 0.01$ ) in Eq (17) and 6.538 ( $p < 0.01$ ) in Eq (18). The R-squared of this study is higher compared to similar foreign study with R-squared of 0.096 (Cox, et al., 2004).

With regards to the association of sustainability reporting and the ownership by insurance companies, the study finds no significant impact in both models. This is

consistent with a previous foreign study where insurance companies share the same traits as mutual funds when making investment decision, where they tend to put liquidity factor as a priority in the potential portfolio, and not social responsibility (Cox & Wicks, 2011). Furthermore, insurance companies act as a division and under the corporate control of banks, which makes them prone to be under pressure of consistent peer group benchmark. As such, the competition and the need to perform well may shorten the investment time horizon, as the need for commercial profit increases to avoid underperformance compared to other divisions (Cox & Wicks, 2011). Thus, insurance companies tend to be myopic in making investment decision, hence, supporting the premise of the Myopic Institutions Theory.

### **6.2.2 Discussions on second research question**

The results in Tables 5-12, 5-13 and 5-14 present the OLS or multiple regression analysis to test if the association between sustainability reporting and institutional ownership is stronger for firms with high financial performance. In Table 5-12, the interaction effect of financial performance and sustainability reporting is tested on aggregate institutional ownership, while in Tables 5-13 and 5-14, the interaction effect of financial performance and sustainability reporting is tested on the ownership by dedicated institutions and transient institutions.

In Table 5-12, when the interaction effect of financial performance and sustainability reporting is regressed to aggregate institutional ownership, it is found that in both Eq (19) and Eq (20), the interaction effects are significant to the ownership by aggregate

institutional investors, which signals the existence of the moderation effect of financial performance. The same situation is observed in Table 5-13, where the moderation effect of financial performance exists; however, only in the model where sustainability reporting is measured by the extent of reporting (Eq (21)). Although the moderation effect is evident, the interesting point observed here is the negative magnitude of the moderating effect in the models. As the moderation effect occurs when the third variable changes the relationship between the two variables under study (Hair, et al., 2010), while the negative moderation effect occurs in the positive relationship between sustainability reporting and aggregate institutional ownership and sustainability reporting and dedicated institutional ownership, the conclusion that can be made from the results is that aggregate institutional investors and dedicated institutional investors would prefer firms which engage in sustainability activities, but with low financial performance. Although the moderating effect is evident, the negative magnitude is contrary to the findings from a previous study, where institutional investors prefer firms that engage in environmental responsibility, but with high financial performance (Wahba, 2008).

The situation where institutional investors prefer firms with low financial performance may be explained by the benefits that may occur resulting from shareholder activism. Previous studies argue that institutional investors, such as pension funds, are likely to invest more in firms with poor financial performance, with the expectation that the benefit from shareholder activism would be larger (Woidtke, 2002). Shareholder activism refers to the situation where shareholders claim their power as firm owners to influence firms' behavior. Through shareholder activism, shareholders may demand for more information from firm, thus

transparency, democracy, and responsibility may be obtained from the corporate sectors (Loh & Mat Zain, 2007). Gillan and Starks (2000) suggest that by investing in poorly performing portfolio firms; institutional owners may exert pressure on the management of such firms to improve their performance (Gillan & Starks, 2000). Besides concentrating on financial performance, shareholder activism may also be used as a technique where the shareholders use their voting rights attached to ordinary shares to achieve political or other objectives (Sparkes, 2001). Previous findings suggest that shareholder activism is largely successful in changing the governance structure, and as a result of the successful governance structure, the wealth of the shareholders is significantly increased (Smith, 1996). Furthermore, in the US, shareholder activism is used as a tool to force change on underperforming firms, in the hope of initiating higher share prices (Sparkes, 2001). Thus, institutional investors, specifically the pension funds, who have dedicated behavior in making investment decision, and have the anticipation of larger benefits from shareholder activism, may tend to invest in firms which engage in sustainability commitments, and at the same time, have poor financial performance. This may allow them to control the management decision of the firms, particularly in the area of governance and sustainability.

The negative moderation results however, points to certain limitations, where the findings indicate high coefficient in all indirect models for institutional ownership and dedicated institutional ownership. The high coefficients may be due to the research design used in this study, where it utilizes the lagged independent variables and contemporaneous variable. Past studies argue that lagged variables may produce

biased coefficient estimates (Achen, 2000; McKinnish, 2002; Wilkins, 2014), thus may be the reason of high coefficient estimates in the models.

Despite the negative moderation of financial performance found in the relationship between sustainability reporting and aggregate institutional ownership, and in the relationship between sustainability reporting and dedicated institutional ownership, contrary results are found for the relationship between sustainability reporting and transient institutional ownership. In Table 5-14, in both models where sustainability reporting is measured by the extent and quality of reporting (Eq (23) and Eq (24)), the study fails to identify any significant sign of moderation effect of financial performance on the relationship between sustainability reporting and transient institutional ownership. The results thus conclude that sustainability engagement is not a concern in investment decision making by transient institutions, regardless of the firms' financial performance. However, financial performance directly and positively give impact on investment decision by transient institutions.

### **6.2.3 Results of control variables**

In this study, thirteen variables are controlled, namely financial performance, firm size, dividend, leverage, risk, managerial ownership, Shariah-compliant status, board size, auditor type, audit committee size, board independence, multiple directorship of the chairman and duality. The results of each control variable in all models are discussed below.

Financial performance is predicted to have positive impact on institutional ownership, as justified in earlier studies (Bushee & Goodman, 2007; Graves & Waddock, 1994). In this study, when financial performance is regressed to the aggregate institutional ownership, the results fail to justify such association. However, when institutional ownership is segregated into dedicated and transient institutions, the positive effect of financial performance is found on the transient institutional ownership, but not on the ownership by dedicated institutions. The result is only partially consistent with previous findings, where financial performance is found to be positively associated to the ownership of both dedicated and transient institutions (Cox, et al., 2004). Furthermore, when financial performance is regressed to specific dedicated and transient institutions, none of the dedicated institutions shows any significant sign to the control variable. However, the significant positive association is found on one of the specific transient institutions, namely the banks. These results thus reveal that compared to dedicated institutions, transient institutions are more myopic in investment decision, hence, confirming the Myopic Institutions Theory, where such institutions favor firms with good financial performance when making investment decision (Hansen & Hill, 1991).

With regards to firm size, the control variable indicates a positive and significant effect on aggregate, dedicated and transient institutional ownership. When the variable is regressed to specific dedicated institutional ownership, the results reveal that firm size indicates positive and significant association to two types of dedicated institutions, namely the government-managed pension funds and government-managed mutual funds in all models. Positive and significant association between firm size and the government-managed pilgrimage funds is also found, but only in the



model where sustainability reporting is measured by the quality of reporting. Further examination reveals that firm size is also positively and significantly associated to two of the specific transient institutions, namely the banks and the private-managed mutual funds. These results thus confirm that institutional investors are interested in firms of large size (Cox, et al., 2004; Graves & Waddock, 1994; Hoq, et al., 2010; Mahoney & Roberts, 2007; Muniandy & Barnes, 2010; Saleh, et al., 2010). On the other hand, negative and significant impact of firm size is found in the ownership of insurance companies. Previous studies argue that large firms are linked to greater agency problem (Klapper & Love, 2004). For instance, because of “free cash flow” arguments (Jensen, 1986), where managers hoard excess cash flow, hence, making the monitoring process harder. Furthermore, some institutional investors find large firms less attractive, as their ownership will be less, thus limiting the ability to influence the management (Graves & Waddock, 1994), and small firms may experience better growth opportunities (Klapper & Love, 2004), which is also an attraction to investors. Additionally, previous studies justify the negative significant association of firm size to the ownership of insurance companies (Cox, et al., 2004). These justifications may be the reasons why insurance companies prefer small size firms.

The next variable controlled in this study is the dividend, where this study expects that dividend may positively affect the ownership of institutions, as previous studies justify that institutional investors are attracted to high-paying dividend firms (Abdul Wahab, et al., 2008; Covrig, et al., 2006; Del Guercio, 1996; Gompers & Metrick, 2001). The results of this study reveal that the positive significant impact of dividend is only found in the ownership by government-managed unit trust funds, thus confirming that this type of institution prioritizes dividend when making investment

decision compared to other types of institutions. On the contrary, the effect of dividend on the ownership of transient institutions and one of the specific transient institutions, namely the banks, indicates negative significant sign. The different preferences for firms' dividend policy by different types of investors is referred to as the clientele effect, where investors tend to invest in firms where the dividend policy matches their preference (Pettit, 1977). Older and poorer investors are likely to invest in high-paying dividend firms, while younger and wealthier investors tend to invest in low-paying dividend firms (Pettit, 1977). Furthermore, investors who pay high tax and do not need cash are expected to invest in firms with low or no dividends (Naser, Nuseibeh, & Rashed, 2013). Thus, the preference for dividend in this study is evidenced by the government-managed unit trust funds, while the transient institutions, particularly the banks prefer to invest in low-paying dividend firms, confirming the clientele effect of investors. Additionally, the different preferences of institutional investors towards dividend in this study confirm that transient institutions behave less prudently compared to dedicated institutions (Yan & Zhang, 2009).

With regards to the firms' leverage, none of the models indicates significant association between leverage and the ownership by all types of institutions, thus signifying that firms' leverage is not an important determinant for institutional ownership in this study.

One of the factors which might be taken into consideration in making investment decision is the risk of the potential firms, as suggested by the Modern Portfolio Theory (Markowitz, 1991). Furthermore, previous studies justify that variation in firm risk causes variation in institutional ownership structure; thus, this study predicts a

non-directional association of firm risk and institutional ownership (Abdul Wahab, et al., 2008; Hoq, et al., 2010; Saleh, et al., 2010). The results from this study identify that firm risk is negatively associated to dedicated institutional ownership when the extent of reporting is used to measure sustainability reporting. In addition, the negative and significant association is also found on the relationship between firm risk and the share ownership by government-managed unit trust funds, thus confirming the Modern Portfolio Theory, and consistent with previous findings (Abdul Wahab, et al., 2008; Hoq, et al., 2010; Saleh, et al., 2010). The results of this study, however, fail to identify the impact of firm risk on other institutional ownership models.

Previous studies justify that institutional investors are attracted to firms with low managerial ownership (Abdul Wahab, et al., 2008; Bushee & Goodman, 2007; Koh, 2003). As such, this study expects that the relationship between managerial ownership and institutional ownership is negatively significant. As expected, the results reveal that managerial ownership exerts negative impact on the ownership by aggregate institutional ownership, transient institutional ownership, a specific dedicated institution, namely the government-managed unit trust funds, and a specific transient institution, namely the banks. However, the result of the association between managerial ownership and ownership by insurance companies, shows a slightly positive significant impact, in the model where sustainability reporting is measured by the quality of reporting. A previous study argues that the low level of managerial ownership in a firms' ownership structure may result in greater agency problem (Ang, Cole, & Lin, 2000), thus making monitoring harder. Therefore, insurance companies may avoid such issues by investing in firms with slightly higher managerial ownership.

The positive and significant association between the Shariah-compliant status and institutional ownership in this study is justified in the dedicated institutions models, particularly in the ownership by government-managed pilgrimage funds. As the government-managed pilgrimage funds is bound by the Shariah law, and is consistent with the institution's investment philosophy ([www.tabunghaji.gov.my](http://www.tabunghaji.gov.my)), it is not surprising that the Shariah-compliant status is highly and positively significant to this type of institution when making investment decision. The study however, does not find any significant relationship between this control variable on other types of institutional investors which are not bound to Shariah law, thus confirming that Shariah-compliant status is not a concern for other types of institutions.

The study also controls for board size, where a non-directional effect is predicted board size and institutional ownership. Some studies argue that large board size is correlated to lower profitability (Eisenberg, et al., 1998), and associated with communication and coordination problems (Lipton & Lorsch, 1992). Contrarily, large board size is also associated to deliverance of more disclosure (Holder-Webb, et al., 2008), while small board size is pointed to lack of expert advice (Shakir, 2008) and diversity in terms of experience, skills, gender and nationality (Dalton & Dalton, 2005). The results of this study however, only found positive association of board size and the ownership by dedicated institutions and government-managed unit trust funds, while for other types of institutions, non associations are found, thus explains that board size matters to dedicated institutions, particularly the government-managed unit trust funds.

Positive association between auditor type and institutional ownership is expected in this study as investors prefer auditors with high quality (Mansi, et al., 2004), which may enhance audit quality (Khurana & Raman, 2004), improve financial reporting timeliness (Schmidt & Wilkins, 2013), provide protection to firm's reputation and avoid litigation costs (Francis & Krishnan, 1999). The results of this study reveal that auditor type has positive impact only on the ownership of transient institutions, particularly on the ownership by banks. These results suggest that transient institutions, mainly the banks, are more prudent and conscious of the quality of reporting; thus, auditor quality of the potential firms is an important factor in determining their investment decision.

Another variable which is controlled in this study is the audit committee size. The presence of the audit committee members is associated with good level of corporate governance (Abdul Wahab, et al., 2008) and reliability of financial reporting (McMullen & Raghunandan, 1996) and voluntary disclosure (Barako, et al., 2006; Ho & Wong, 2001). However, smaller audit committee is argued to be more effective than larger committees (Beasley, 1996). The results from this study reveal mixed findings. Dedicated institutions, particularly the government-managed pension funds and government-managed unit trust funds prefer to invest in firms with high percentage of audit committee members. On the other hand, audit committee is negatively and significantly related to the ownership of the transient institutions, particularly the banks, thus signify transient institutions' preference to firms with small but effective audit committee.

With regards to board independence, the Agency Theory posits that effective monitoring may be promoted by larger proportion of independent directors. This is justified by previous findings where independent directors monitor management behavior and improve financial quality (Cornett, et al., 2008; Forker, 1992). Hence, this study predicts positive association between board independence and institutional ownership. The results of the study however only find such association in the ownership of insurance companies' model, although only a slight impact is found, involving the model where sustainability reporting is measured by the quality of reporting. Contrary to expectations, in the share ownership by government-managed pension funds models, even though board independence shows significant impact, the magnitude is in negative direction. Although past studies suggest positive outcomes by having independent board, previous studies also suggest that having more outside directors corresponds to poorer performance (Bhagat & Black, 2002; Dulewicz & Herbert, 2004), as a board which mainly comprises more inside members may have more motivation and knowledge to help firms succeed (Sonnenfeld, 2004). Therefore, the poor performance resulting from having more outsiders sitting on the board may be the reason why government-managed pension funds prefer firms with lower board independence. Meanwhile, in other types of institutional ownership models, board independence shows a no association to institutional ownership.

A previous study suggests that chairman with multiple directorship gain extra knowledge and experience by sitting on other boards, thus enhance voluntary disclosure (Haniffa & Cooke, 2005). Due to this reason, this study expects that multiple directorship is positively associated to institutional ownership, on the ground that good voluntary disclosure may be a good factor to attract institutional investors.

The results of this study however, fail to find any significant association between multiple directorship of the chairman and institutional ownership, which signifies that multiple directorship of the chairman is not a concern for institutional investors in making investment decision.

The final variable controlled in this study is duality. Previous studies found negative impact on duality, where duality may wear down the ability of boards to exercise effectively (Said, et al., 2009), and at the same time may compromise the independence of the board (Elsayed, 2007) and also related to low performance (Elsayed, 2007). On the other hand, duality is found to positively affecting firm performance (Boyd, 1995; Donaldson & Davis, 1991), and positively moderate the relationship between innovative knowledge assets and economic performance. As mixed findings are found on the relationship between duality and performance, while institutional owners prefer to invest in high performing firms, non-directional effects are previously hypothesized between duality and institutional ownership. The results from this study show that duality is negatively associated to the ownership by aggregate institutional ownership and the ownership by government-managed unit trust funds, thus confirming that duality is not an attractive factor for institutional ownership.

### **6.3 Implications of study**

Both theoretical and practical implications of this study are discussed in the following sub-sections.

### **6.3.1 Theoretical implications**

The first part of this study indicates that sustainability reporting exerts positive and significant impact on the ownership of institutional investors, which signals that institutional investors are likely to invest in firms that cater to the needs of the stakeholders. Further investigation reveals that when institutional investors are partitioned into dedicated and transient institutions, different effect is observed, where sustainability reporting exerts positive significant impact on the former, but not on the latter. Although similar results are found in previous studies (Cox, et al., 2004; Cox & Wicks, 2011; Johnson & Greening, 1999), those studies concentrate on the developed market. The results of this study however, focus on the developing market, which is highly controlled by the government, as well as a broader set of control variables, thus contributing to the extant literature on the ownership of institutions.

Further investigation of this study concludes that sustainability reporting exerts positive impact on the share ownership of three types of institutions, categorized as dedicated institutions, namely the government-managed pension funds, government-managed unit trust funds and government-managed pilgrimage funds. However, sustainability reporting is found to exert no significant impact on the share ownership of three institutions classified as transient, namely the banks, private-managed mutual funds and insurance companies. In previous studies, the effects of sustainability reporting on institutions, such as pension funds, mutual funds, banks and insurance companies have been justified (Cox, et al., 2004; Cox & Wicks, 2011). The current study however, provides unique contributions as it separates the unit trust and mutual funds into those which are either government-managed or private-managed, and this



study concludes that different effects of sustainability reporting are found on these types of institutions. Furthermore, limited evidence has been found on the effect of sustainability reporting on the ownership by government-managed pilgrimage funds; hence, the literature on institutional ownership is further extended.

The second part of this study identifies that the preferences for sustainability reporting by institutional investors is determined by the level of financial performance. However, different results are observed when institutional investors are partitioned into dedicated and transient institutions. Institutions with dedicated investment behavior tend to invest in firms with sustainability engagement, but with low financial performance. In contrast, for transient institutions, the decision to invest in a sustainability performer is not moderated by financial performance, which signals that sustainability commitment by potential firms is not an important criterion to be considered, regardless of their financial performance. Up to this date, limited evidence has been found on the role of financial performance as a moderator on the association between sustainability reporting and institutional ownership. One existing study (Wahba, 2008) focuses on environmental reporting alone and uses a monolithic interpretation for institutional investors. Thus, the findings from this study add to the extant literature on the role of financial performance in moderating the association between sustainability reporting and different types of institutional investors according to their investment behavior.

### **6.3.2 Practical implications**

The practicality of this study may be observed in a number of ways. Firstly, the results of this study are based on four to five years after the post-mandatory period where sustainability reporting was made a requirement in the year 2007 by Bursa Malaysia. Thus, this study provides more current results compared to previous Malaysian studies (Hoq, et al., 2010; Muniandy & Barnes, 2010; Saleh, et al., 2010). Furthermore, the sample of this study consists of the Malaysian listed firms in all industry types; hence the results of this study are more generalizable, compared to previous studies which concentrate only on large size firms (Hoq, et al., 2010; Muniandy & Barnes, 2010; Saleh, et al., 2010).

Secondly, the results of this study are important to the organizations to better understand the different preferences towards sustainability engagement by the various types of institutional investors. Although the engagement in sustainability commitments is only an attraction for dedicated institutional investors, in the long run, such commitments improve the performance of the firm. This may then attract transient institutional investors as well. Hence, such understanding towards engagement in sustainability commitments may guide the organizations on the factors which may be enhanced to attract investment from different types of institutional investors, which have different preferences when making investment decisions.

The high commitment of the Malaysian government towards sustainability may be observed in a number of policies; among others, the government announced that investments made by two of the prominent government-related institutions, namely

the EPF and KWAP, should be in firms with good sustainability performance (Ministry of Finance, 2006). Thus, the results of this study, where the government-managed pension funds, which include both institutions afore-mentioned, are keen to invest in firms that engage in sustainability commitments, justify that such policy is on track. The findings from this study also uncover that besides those two institutions, other government-managed institutions also show preferential behavior towards investing in sustainability related firms, hence, validating that the government's policy on promoting sustainability awareness and guiding the sustainability activities and implementations through the establishment of the Silver Book, is not only for the Malaysian GLCs, but has also been taken positively by the GLICs. Besides, the findings also provide preliminary indication on the preferences of the institutional investors in investing in sustainability related firms as required by the Malaysian Code for Institutional Investors (Minority Shareholders Watchdog Group & Securities Commission Malaysia, 2014).

#### **6.4 Conclusions**

This study investigates the impact of sustainability reporting on institutional ownership, and explores if the preferences for sustainability reporting by institutional investors are moderated by firms' financial performance. The study is motivated by the gap in the existing literature where the association between sustainability reporting and institutional ownership has been inconsistent. This study predicts that the inconsistency in the existing literature is due to several factors. Firstly, the inconsistency may be due to different preferences for firms' sustainability

engagement by different types of institutional investors when making investment decisions, where institutions with dedicated or long-term behavior prefer to invest in firms that engage in sustainability activities, as they can take advantage of the benefits from such commitments in the long run. On the other hand, institutions with transient or short-term investment horizon do not consider firms' sustainability engagement, as they concentrate more on firms' short-term financial performance. Hence, this study specifically investigates if the impact of sustainability reporting on institutional ownership is different for dedicated and transient institutions, by focusing on the Malaysian market, representing the developing market, where up to date, limited evidence has been found. Secondly, the inconsistent findings in previous studies may also be due to the indirect effect of financial performance which has been predicted to occur in the form of moderation. Based on the Myopic Institutions Theory, which posits that institutions concentrate on firms' financial performance when making investment decision, this study examines if the preferences for sustainability reporting by institutional investors are more for firms with high financial performance.

The results of this study reveal that although institutional investors aggregately show positive preference for sustainability reporting when making investment decision, contradictory results are observed when the institutions are partitioned into those with dedicated and transient investment behavior. The former indicates positive behavior towards firms' sustainability engagement, while the latter shows no significant preference towards firms' sustainability commitments. Further analysis is done by separating the dedicated institutions into government-managed pension funds, government-managed unit trust funds and government-managed pilgrimage funds, and transient institutions into banks, private-managed mutual funds and insurance

companies. The results reveal that sustainability reporting exerts significant positive impact on all types of dedicated institutions, while no significant impact is found on all types of transient institutions. The results hence confirm that different investment horizons by different types of institutional investors may result in different preference for firms' sustainability engagement.

Further examination is done to determine if the association between sustainability reporting and institutional ownership is moderated by financial performance, or in other words, if institutional investors prefer firms that engage in such commitments, and at the same time have high financial performance. The results reveal that when institutional investors are tested aggregately, the moderating effect of financial performance exists, although in a negative magnitude, which concludes that institutional investors prefer to invest in firms with sustainability engagement, but with low financial performance. Further examination also reveals that when institutions are partitioned between dedicated and transient institutions, the negative magnitude of the moderation effect is only observed in dedicated institutional ownership, while no significant result is found in transient institutional ownership. The results, which are contrary to expectations, may be due to the expectation of benefits from shareholder activism (Woidtke, 2002), where shareholders emphasize investment in poorly performing portfolio firms; thus, pressure may be exerted on the management of such firms to improve their performance (Gillan & Starks, 2000). Thus, institutional investors, specifically the pension funds, may tend to invest in firms which engage in sustainability commitments, and at the same time, have poor financial performance. This gives them the ability to control the management decision of the firms, particularly in the area of governance and sustainability.

## **6.5 Limitations of the study and suggestions for future research**

The conclusions drawn from this study should be taken in a limited way, thus, opening opportunities for further research avenues. First, this study only utilizes a one-year lag data of the year 2010 for sustainability reporting and one-year contemporaneous data of the year 2011 for institutional ownership. The issue of financial crisis in the year 2008 and 2009, which may have impacted the financial performance data used in the moderating analysis if included, limits the scope of this study. The short period of study may not be representative of the way institutional investors manage their investment decisions. Thus, future research may extend the study by including more years of data, and including longitudinal analysis, which may provide further examinations on the impact of sustainability reporting on the ownership of dedicated and transient institutional investors, and the moderating effect of financial performance on the association of sustainability reporting and aggregate, dedicated and transient institutional investors in the long-run.

Secondly, the study only utilizes the annual reports and stand-alone sustainability reports to capture the sustainability engagement of the sampled firms. Future research may consider including other media of sustainability disclosures, especially the web-reporting, considering the internet has become an important medium to communicate sustainability information (Chaidri & Wang, 2007; Wanderley, Lucian, Farache, & de Sousa Filho, 2008).

Thirdly, the coefficient estimates in the models testing indirect effect of financial performance on the association between sustainability reporting and institutional

ownership shows high values, which may be explained by the research design where lagged variables are used in the regression models. Previous studies argue that lagged variables may produce biased coefficient estimates (Achen, 2000; McKinnish, 2002; Wilkins, 2014), thus may be the reason of high coefficient estimates in the models. Future studies might consider gauging the same problem, but to use contemporaneous data, therefore, may be able to produce more robust results on the moderating effect of financial performance.

Fourthly, the main objective of this study is to examine the impact of sustainability reporting on institutional ownership, and one of the institutions under study is the government-managed pilgrimage funds. From the results, it is observed that the variations of the ownership of government-managed pilgrimage funds may only be explained by the model with less than 10%, and among the control variables, only firms' size and the firms' Shariah-compliant status are identified to be associated to the institution's share ownership, which contributes to the low variations explained. Future research may want to further investigate the factors which may attract investment from this institution. The vast amount of funds held by this institution is a motivating factor as to what criteria must be possessed by firms in order to attract investment from this institution.

Fifthly, future studies might also try to examine the preference of the dedicated institutions towards specific types of sustainability commitments. For instance, pension funds and government-managed unit trust funds have been found to have positive preferences to sustainability commitments by potential portfolio while making investment decision. It is interesting to know if their preferences are focused

on certain sustainability themes, such as on environment, workplace, marketplace or community themes.

Next, future studies might also consider examine the impact of sustainability engagement on a type of institution which accumulates assets in the form of reserves, namely the sovereign wealth fund (Truman, 2007; Truman, 2008). Kunzel, et al. (2010) classifies this type of fund into stabilizing funds, savings funds, pension reserve funds and investment corporations, where these classifications demote different invest horizon in investment decision making. With the separation of the sovereign wealth funds into several types, it is interesting to know whether sustainability engagement by firms manage to attract investment from this type of institution.

The impact of one of the control variables on institutional ownership, namely the managerial ownership, has been found mixed. Several institutions are seen to prefer to invest in firms with low managerial ownership, but large firm size; however, insurance companies show slight preference to firms with high managerial ownership, but with small firm size. The mixed findings suggest that the relationship between managerial ownership and institutional ownership may not be in a linear fashion, but in a curvi-linear pattern, where positive association between managerial ownership and institutional ownership may be found when the firm size is small. However, when firms become larger in size, the association between managerial ownership and institutional ownership becomes negative due to the agency conflict. Future studies may consider examine this situation.



Lastly, future research may consider examine the difference between engagement to sustainability commitments and preference to such commitments while making investment decisions by transient institutions such as banks and insurance companies. In this study, these types of institutions are identified as having transient behavior in investment decision making, thus sustainability engagement by potential firms is taken lightly. However, previous studies find that financial institutions have high commitments to sustainability (Abd-Mutalib, Muhammad Jamil, & Wan Hussin, 2014; Abdul Rahman, Md Hashim, & Abu Bakar, 2010; Maali, Casson, & Napier, 2006; Singh, Yahya, Amran, & Nabiha, 2009). Therefore, future studies may want to gauge the reasons behind the different commitment to sustainability by such institutions.

## **6.6 Summary of the study**

In summary, this thesis seeks to investigate the impact of sustainability reporting on dedicated and transient institutional ownership and the moderating effect of financial performance on the relationship between sustainability reporting and institutional ownership among Malaysia listed firms. The results from this study enhance our understanding of the different preferences towards firms' sustainability engagement by institutional investors in a unique situation, where the market for institutional investors is highly controlled by the government, which has high commitment to sustainability. The results from this study also highlight that different types of institutional investors have different perceptions towards investing in firms that

engage in sustainability, thus providing different conclusion from what has been found in the studies related to developed countries.

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