THE UNIVERSITY OF HULL

Fraudulent Financial Reporting: An Application of Fraud Models to Malaysian Public Listed Companies

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ABSTRACT

There have been great concerns among stakeholders on how fraudulent financial reporting (FFR) can affect the reputation of public-listed companies (PLCs). The post Enron era has witnessed many FFR cases around the globe. FFR has impacted many countries around the world including Malaysia, the focus of this thesis. FFR not only causes significant ethical concerns to both individuals and companies but also involves a great amount of financial losses. A survey conducted by KPMG (2014) involving Chief Executives in Malaysian PLCs between January 2010 and December 2013 has found that 26% of respondents who experienced fraud were able to state the estimate of fraud losses experienced, which amounted to RM 2.41 million (≈ USD 0.72 million) on average. Thus, FFR is a major concern for the two primary regulators of the capital markets in Malaysia; Bursa Malaysia and Securities Commission Malaysia (SC). Both authorities continue to refine the parameters that help to ensure rigorous surveillance over Malaysian PLCs (Danial et al, 2014). Effective anti-fraud programmes which include the ability to predict the likelihood of FFR among Malaysian PLCs continue to be important not only for regulators, but also to the nation.

Therefore, this research examines suitable determinants of the likelihood of FFR among Malaysian PLCs based on the fraud-risk factors identified in the Fraud Models [i.e. Fraud Triangle Model (Cressey, 1953), the Fraud Diamond Model (Wolfe & Hermanson, 2004) and Crowe's Fraud Pentagon Model (Crowe, 2011)]. Based on previous literature on FFR and the Fraud Models, this research has identified five pre-developed hypotheses and ten pre-developed sub-hypotheses. Semi-structured interviews were undertaken to explore relevant fraud-risk factors from these pre-developed hypotheses and sub-hypotheses in the Malaysian context. Additionally, interview results have also suggested measurable fraud-risk factors as Malaysian specific results, which have not been tested before. These factors are ignorance and greed. Then, these factors were statistically tested in quantitative analyses (i.e. descriptive statistics and binomial logistic regression analysis). Utilising cross-sectional data series, which involve 160 Malaysian PLCs (45 fraudulent PLCs and 115 non-fraudulent PLCs) for a 10-year period (from 2004 to 2013), this research examines sixteen proxy variables on seven hypotheses and fourteen sub-hypotheses. Ultimately, based on panel data models of binomial logistic regression analysis, this research has found a new fraud model with suitable fraud-risk factors that could fit current business environment and corporate governance culture in Malaysia. In short, utilising a mixed-method design, this research has explored a new perspective in suggesting suitable fraud-risk factors to predict the likelihood of FFR among Malaysian PLCs.

Keywords: Fraudulent Financial Reporting, Fraud Models, Malaysian Public-Listed Companies.

Dedications

This thesis is dedicated to a few special people who are always with me all along my PhD journey.

To my late mother, who has passed away at the beginning of my PhD journey,

"I truly believe that your love and prayers are with me at all times that make it possible for me to complete this thesis. May Allah rest your soul in peace and grant you the best place in Jannah. I pray that for all the goodness of knowledge benefited from this thesis, would continue to be good deeds and rewards for your soul, Amin."

To my beloved wife,

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To my beloved children, Adam and Amsyar,

"I am so thankful for having such wonderful children who never fail to make me smile."

Acknowledgements

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS / FREQUENTLY USED TERMS

AICPA the American Institute of Certified Public Accountants

APB Auditing Practices Board

BN Barisan Nasional

BODs Board of Directors

CEO Chief Executive Officer

CEODUAL CEO Duality

CEOPIC Number of CEOs' pictures in Annual Reports

CIMA Chartered Institute of Management Accountant

CMs Conceptual Models

COMBODs Composition of Board of Directors

COSO Committee of Sponsoring Organisations of the Treadway Commission

CPI Corruption Perception Index

DV Dependent Variable

EM Earnings Management

EXREMU Executive Directors' Remunerations

FE Fixed-Effects

FFR Fraudulent Financial Reporting

FRF Financial Reporting Foundation

FRS Financial Reporting Standards

GAAP Generally Accepted Accounting Principles

GE General Election

GLCs Government-Linked Companies

GROWTH	PLCs' Growth
HFRTs'	Historical Financial Restatement Times
IAASB	International Auditing and Assurance Standards Board
IAS	International Accounting Standards
ICAEW	Institute of Chartered Accountants in England and Wales
IFRS	International Financial Reporting Standards
INEDU	Number of Corporate Governance Courses for Executive and Non-Executive Directors
KPMG	Klynveld Peat Marwick Goerdeler
LEV	PLCs' Leverage
MASA	Malaysian Approved Standards on Auditing
MASB	Malaysian Accounting Standards Board
MFRS	Malaysian Financial Reporting Standards
MIA	Malaysian Institute of Accountant
OLS	Ordinary Least Square
PDI	Power Distance Index
PLCs'	Public Listed Companies
POLCEO	A CEO and/or Chairman of BODs who is also a Politician
RE	Random-Effects
REMDAYs	Days Taken by PLCs to Submit Annual Financial Reports
ROs	Research Objectives
ROA	Return on Asset
RQs	Research Questions
SAS	Statement on Auditing Standards
SC	Securities Commission Malaysia
SD	Standard Deviation

CHAPTER 1: INTRODUCTION

Financial report is one of the key mediums in disseminating financial information of a business entity or a company. In principle, financial reports reflect management's accountability and efficiency in managing financial resources and expenses (Mohamed Yusof *et al.*, 2015). Thus, for public listed-companies (hereafter referred to as 'PLCs'), financial reports published in annual reports are regarded as the main form of communication with the shareholders (Stanton & Stanton, 2002). From an accounting perspective, a financial report usually contains five components, which are (1) Statement of Financial Position (previously known as 'Balance Sheet'); (2) Income Statement; (3) Statement of Changes in Equity; (4) Cash Flow Statement; and (5) Accounting Policies and Explanatory Notes. Nevertheless, previous financial scandals and cases suggest that one or more financial report components could be manipulated for fraudulent purposes. Such unethical actions in this research are regarded as fraudulent financial reporting (hereafter referred to as 'FFR').

As one of the fraud components, FFR has become a significant white collar crime in today's business environment (Palshikar, 2002). Many capital market players recognise the potential harm to the business caused by FFR (Mohamed Yusof *et al.*, 2015). This phenomenon is not only an increasing trend (Albrecht & Albrecht, 2002), but also inevitable[1] (KPMG, 2014). According to Beasley *et al.* (1999) and Rezaee (2005), the Committee of Sponsoring Organisations of the Treadway Commission (COSO) has reported that the consequences associated with financial statement fraud can be very severe based on adverse consequences ranging from filing for bankruptcy to changing owners, delisting by the national stock exchange to substantial decline in stock value.

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[1] KPMG Malaysia (2014) reported that 90% of respondents from Malaysian PLCs believed that fraud (including FFR) is an inevitable cost of doing business.

1

Eventually, FFR could bring about financial collapse (Lehman & Okcabol, 2005), which usually involves a huge amount of losses in term of monetary and assets values. For instance, the head of fraud investigation and risk management at Ernst & Young in the United Kingdom (UK) estimates world-wide fraud levels to be USD 10 billion per annum or USD 40 million per working day (Spollen, 1997). Additionally, Abrecht *et al*. (2004) report that among the largest bankruptcies in the United States of America (USA) history which involve FFR and/or Chief Executive Officer (CEO) fraud are WorldCom (USD 101.9 billion of total assets) and Enron (USD 63.4 billion of total assets). In short, among all fraud cases, financial statement fraud has cost market participants more than USD500 billion during recent years (Cotton, 2002; Rezaee, 2002, 2005). In a recent FFR case, Tesco's senior management team are facing the potential threat of jail after the Serious Fraud Office (SFO) launched a criminal investigation into the ailing supermarket's £263 million (≈USD 399.4 million) accounting scandal (BBC, 2014). The case provides solid evidence that FFR continues to be one of the major problems in recent years. The next section explains motivations of this research.

1.1 Motivations of the Research: Research Setting in Malaysia

Located in South-East Asia, Malaysia is bordered by Thailand, Indonesia, and Brunei. Malaysia also shares maritime borders with Singapore, Vietnam, and the Philippines. Malaysia covers an area of about 330,803 square kilometres, consisting of thirteen states and three territories in Peninsular Malaysia (also known as West Malaysia) and East Malaysia (Tourism Malaysia, 2014). Kuala Lumpur is the capital city, while Putrajaya is the centre of administration for the Malaysian Federal Government (Tourism Malaysia, 2014).

As a multi-ethnic country, the principal ethnic groups in Malaysia are Malay, Chinese and Indian. Other significant groups are the indigenous people of Sabah and Sarawak, including Kadazan Dusun, Bajau, Murut, Iban, Bidayuh and Melanau. Total population of Malaysia has increase consistently from 10.90 million in 1970 to 30. 99 million in 2015 (Department of Statistics Malaysia, 2016).

Despites geo-political uncertainty, financial market volatility continues to be a major challenge for Malaysia. In order to stay resilient in these challenging times, the government of Malaysia is struggling to find balance between national economic growth and social needs. Despites having a distinctive culture, Malaysia is surrounded by endless corporate governance issues, especially corruption and fraud. A survey conducted by KPMG (2014) among the Chief Executives of Malaysian PLCs between January 2010 and December 2012 found that 90% respodents agreed that corruption is one of the major concerns for Malaysian business. However, 71% of them believed that corruption is an inevitable cost of doing business.

These results were supported by various cases involving corruption in the country. One of the cases concern the involvement of the former Managing Director and former Operations Officer of Silver Bird Group Berhad (SBGB) in the application of the Bankers Acceptance (BA) that featured elements of corruption and fraud. They were accused of deceiving Maybank officials by submitting false documents for the application of the BA facility of more than RM 67 million (≈USD 16.8 million). The amount was said to have been channelled to three food processing companies namely, Asia Food Link Sdn. Bhd., Violet Bonanza Sdn. Bhd.and Stanson Marketing Sdn. Bhd. (MACC, 2013).

Another case involved the Senior Vice President (SVP) of Iskandar Investment Berhad (IIB), one of the companies owned by Khazanah National Berhad. The company specifically entrusted with the catalyst development project at Iskandar Malaysia Region worth billions of ringgit. IIB works closely with Iskandar Development Authority Board in major developments covering the area of infrastructure, education facility, housing and road works. The Iskandar Malaysia project spans up to 2025 and is envisioned to be the largest development growth centre in the region encompassing an area three times the size of Singapore (MACC, 2013).

The information received detailed that the SVP, through a businessman, solicited and received bribes in cash from Kimlun Sdn. Bhd. amounting to RM 3 million (≈USD 0.75 million). The bribe was a favour for the reward of Project 3: Package 3B − Construction and Completion of the Jalan Abu Bakar Interchange in Johor Bahru worth RM 124 million (≈USD 31.09 million). The SVP faced three charges at the Johor Bahru Sessions Court for receiving gratifications in cash amounting to RM500,000 (≈USD 125,380) from a Chief Executive of Kimlun Sdn. Bhd. The transaction has occurred at Johor Bahru City Square Complex in November 2008 (MACC, 2013).

Among these cases, there was one 'big' case that has attracted Malaysian's attention in 2011 and 2012, prior to the 2010 Auditor-General's Report. The case involved the misused of Federal Government Soft Loan for the National Feedlot Centre Project (NFC), which brought the National Feedlot Corporation (NFCorp) Executive Chairman into criminal breach charged of trust and violating the Companies Act in relation to RM 49 million (≈USD 12.29 million) in federal funds given to the NFCorp (MACC, 2013). The Federal Government through the Ministry of Agriculture and Agro-Based Industry Malaysia (MOA) outlined a National Beef Production Policy with the main objective to further increase the local cattle raring population and beef production.

4

The NFC was mandated by the government to manage the project through a closed tender process. NFC was granted with a funding in the form of a soft loan of RM 250 million (≈USD 62.69 million) with a repayment rate of 2% on profits gained and a grant of RM 13 million (≈USD 3.26 million). As a result, fighting corruption is regarded as one of the key measurements of National Key Results Areas (NKRA).

However, the focus of this research is centralised on FFR, since the concern of manipulating financial reports is much assicoated to the accounting field. As Malaysia is not shielded from the impact of external headwinds in financial market, this developing country must also overcome internal problems involving FFR among Malaysian PLCs. KPMG (2014) has reported that 89% of Chief Executives of Malaysian PLCs felt that the quantum of fraud (including FFR) had increased over the past three years (Mohamed Yusof et al., 2015). The increasing trend suggests that there is a strong connection between fraud and Malaysian PLCs. Meanwhile, 83% of respondents felt that fraud is a major problem for Malaysian businesses in general and 94% believed that fraud has become more sophisticated (KPMG, 2014). 26% of respondents who experienced fraud agreed that the total loss caused by fraud amounted to RM 2.407 million (≈ USD 0.72 million) on average (KPMG, 2014). 68% of respondents felt that poor internal controls and lack of skills among internal auditors to detect fraud are the major factors that triggered fraudulent acts, including FFR in their companies (KPMG, 2014).

However, FFR is not new in Malaysia. Several FFR cases involving Malaysian PLCs have been reported for more than a decade, such as Megan Media and Transmile Bhd (Ali, 1994; Dalnial et al., 2014). Transmile Bhd was reported to have accounting irregularities, overstating revenues in 2004, 2005 and 2006 by a total value of RM 622 million (≈ USD 185.67 million) (Dalnial et al., 2014).

This case led to several other Malaysian PLCs being investigated, such as Megan Media Holdings Bhd and Welli Multi Corp Bhd (Dalnial *et al.*, 2014). During the 1997-1998 financial crises, the Malaysian financial landscape was blemished by a few accounting scandals related to FFR, such as Renong Berhad, Perwaja Holdings Berhad and Malaysia Airlines Berhad (see Hasnan *et al.*, 2008; Ahmad Khair, 2012; Ahmad Khair & Hudaib, 2012; Ahmad Khair *et al.*, 2015).

Between 2006 and 2007, the Securities Commission of Malaysia (SC) initiated several criminal prosecutions against a number of people in connection with Transmile, Megan Media, Nasioncom, Wimems, Welli Multi and MEMs Technology (Hasnan *et al.*, 2008). Therefore, managing fraud-risk factors has become one of the central focuses in combating FFR among Malaysian PLCs (Dalnial *et al.*, 2014). Certain measures have been enhanced by the government and accounting regulatory bodies to mitigate the occurrence of fraud and FFR (Zawawi, 2010). For instance, the Integrity Institute of Malaysia was established by the government in 2004 to promote and enhance ethics and integrity among citizens of Malaysia (Zawawi 2010).

In order to increase investors' confidence, Bursa Malaysia has revisited its Listing Requirements, pursuant to Section 9 of the Capital Market and Services Act 2007 to improve the corporate governance standards amongst Malaysian PLCs (Bursa Malaysia, 2015a). The Companies Act 1965 was also been amended by the Companies Commission of Malaysia (SSM) in 2007 to reformulate some requirements, such as (1) directors' roles and duties, (2) auditors' roles and responsibilities, and (3) ensuring accountability in corporate management and decision-making (SSM, 2014). Similar improvement measures have also been taken by other Malaysian government and accounting regulatory bodies (i.e. Malaysian Institute of Accountants, Malaysian Institute of Corporate Governance and SC).

Despite these considerable programmes, most of the foundational problems bedevilling FFR remained largely unresolved. As such, effective anti-fraud programmes remain a prudent course of action to reduce the risks of FFR (Ramazani & Atani, 2010).

One of the factors that may have contributed towards these increasing trends is that Malaysia has been recognised as one of the strong political-driven developing countries in Asia (Credit Suisse, 2012). Malaysia has been practising a centralised-administration system that adopts clear separation in control and power (the Hofstede Centre, 2015). According to the Hofstede Centre (2015), Malaysia has a high score on the Power Distance Index (PDI)[2], which is 100 as compared to other ASEAN countries, such as Thailand (64), Vietnam (70), Singapore (74), Indonesia (78) and the Philippines (94). The index shows that the majority of Malaysians accept a hierarchical order in which everybody has a place and which needs no further justification (the Hofstede Centre, 2015). From the perspective of an organisation, the score reflects inherent inequalities and centralised administration; subordinates expect to be told what to do and the ideal boss is a benevolent autocrat (the Hofstede Centre, 2015).

A glance through recent reports reveals that there have been numerous noteworthy FFR scandals and financial problems involving several Government-Linked Companies (GLCs) in Malaysia. One of these GLCs is Malaysian Airline System Berhad (MAS), which was reported to record a net loss of RM 443.4 million (≈USD138 million) in the three months ended 31st March 2014 compared to RM 278.8 million loss in 2013 (Bloomberg, 2014).

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[2] PDI is used as a measurement index for social science researches to make empirical comparisons on the power distance (PD) across different countries or cultures. PDI is derived from country mean scores, ranged between 1 (lowest score) and 120 (highest score). Additional explanation of PDI is contained in **Appendix 1**.

Recently, a corporate scandal surrounding 1Malaysia Development Berhad (1MDB) has grabbed headlines in major news reports around the globe when it missed payments of RM 48.5 billion (≈USD11 billion) it owes to banks and bondholders (BBC, 2015). Then the Wall Street Journal (WSJ) reported a paper trail that allegedly traces close to RM 3.1 billion (≈USD 700 million) from the troubled fund to the Malaysian Prime Minister's (PM) personal bank account (BBC, 2015).

Following this, a special task force headed by the Malaysian Attorney General (AG) was set up to look into the 1MDB fund (BBC, 2015). On 26th January 2016, the newly appointed AG had closed the investigation based on his opinion that there was no evidence to show that the donation[3] was a form of gratification (BBC, 2016). Even after this decision, there are still unanswered questions, particularly on the reasons for the PM to accept a personal donation and how the money was spent (BBC, 2016). Meanwhile, according to Transparency International, Malaysia's ranking dropped four places in 2015 Corruption Perceptions Index (CPI)[4] (Transparency International, 2016). Malaysia is ranked 54 out of 168 countries and territories for its CPI for the year 2015 compared to 50th in 2014 and 53rd in 2013.

The PDI and CPI statistics show that there is a tendency of FFR to occur repeatedly in the country, including among Malaysian PLCs. Although massive transformation programmes have been undertaken by the government, the country is still suffering from the 'political-driven' perception. This perception is an evidence of conrcerned crisis by various stakeholders in Malaysia. From the corporate governance's perspective, the incidents of FFR among Malaysian PLCs are surrounded by the crisis of 'independence' among the Executive and Non-Executive Directors, which are 'independence in fact' and 'independence in appearance'.

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[3] The AG referred the donation as 'a personal donation' from the royal family in Saudi Arabia.
[4] Additional explanation on CPI is contained in **Appendix 2**.

According to Olazabal and Almer (2001), the American Institute of Certified Public Accountants (AICPA) and Securities and Exchange Commission (SEC) associate independence in fact with the genuine principle of being unbiased, but it is not readily seen. In contrast, independence in appearance is based on unbiased perceptions, although the actual facts suggest the opposite. This crisis could occur among the Executive and Non-Executive Directors (also known as the 'outside directors') in Malaysian PLCs. For example, although the appointment of GLCs' outside directors is in accord with the Bursa Malaysia's standards, the issues of outside director's independence are still questionable. There is no concrete evidence showing that the appointment of the outside directors is made without the interference of politicians. It is believed that top-down administrative systems of autocratic management styles and political-driven practices in corporate governance cultures are the main contributors for the involvement of politicians in Malaysian PLCs. Figure 1.1 illustrates the structure of corporate governance with regard to the Board of Directors (BODs) in Malaysian PLCs.
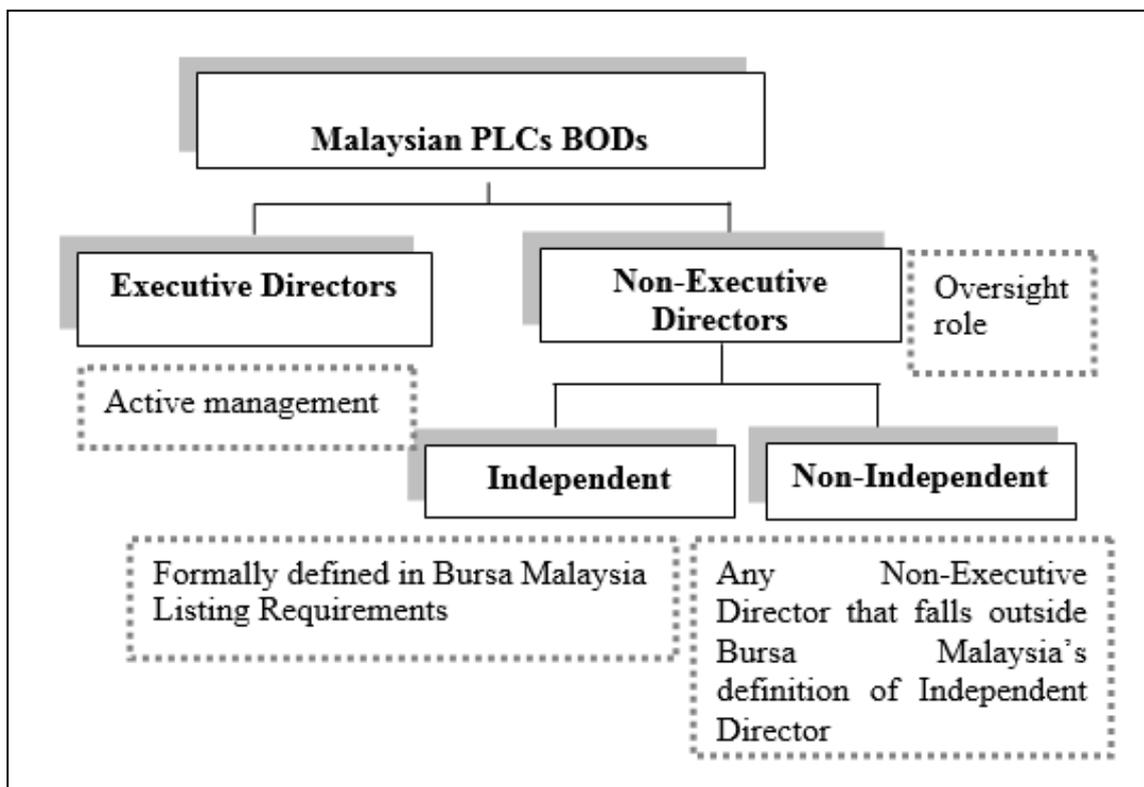
Figure 1.1: The Structure of Corporate Governance in Malaysian PLCs.
Source: KPMG Malaysia, 2013.

Thus, such FFR cases involving Malaysian PLCs are viewed collectively with this crisis. Having highlighted the above, there is no doubt that preventing FFR is one of the effective ways to improve the country's image. As one of the efficient prevention mechanisms, the ability to predict the likelihood of FFR is extremely important as it can save huge amounts of money from being embezzled (Ravisankar *et al*., 2011).

1.2   Problem Statement

In predicting the likelihood of FFR, sufficient evidence on doubtful accounts or misleading financial information may be detected by using appropriate fraud-detection mechanisms. Some of these mechanisms are derived from empirical research results. Moreover, principal philosophies of fraud-detection mechanisms are born from academic literature and scholars' contributions. One of the common sources of reference for fraud-detection mechanisms is the Fraud Triangle Model, proposed by D. R. Cressey in 1953. Based on an article entitled 'Other People's Money: A Study in the Social Psychology of Embezzlement', Cressey (1953) suggested several fraud-risk factors that form the Fraud Triangle Model. These factors are (1) incentive/pressure; (2) opportunity; and (3) attitude/rationalisation. Eventually, the fraud-risk factors from the Fraud Triangle Model (Cressey, 1953) were recognised in the Statement of Auditing Standards (SAS) 99 and International Standards on Auditing (ISA) 240. SAS 99 was issued by the Auditing Standards Board of the American Institute of Certified Public Accountants (AICPA), while ISA 240 was issued by the International Auditing and Assurance Standards Board (IAASB) of the International Federation of Accountants (IFAC).

Following ISA 240, the application of the standard has been approved by the Malaysian Institute of Accountants (MIA) in July 2005. Since then, the fraud-risk factors (i.e. incentive/pressure, opportunity and attitude/rationalisation) from the Fraud Triangle Model have been widely used by auditors and fraud researchers in Malaysia.

From an academic perspective, a great number of research studies on the Fraud Triangle Model have been conducted internationally (see Heiman-Hoffman *et al*., 1996; Wilks & Zimbelman, 2004; Skousen & Wright, 2006) and in Malaysia (see Moyes *et al*., 2009; Omar & Din, 2010; Aghghaleh *et al*., 2014). However, these research have suggested that the fraud-risk factors from the Fraud Triangle Model are inadequate to predict the likelihood of FFR, including for Malaysian PLCs. In the meantime, the increasing number of research studies on the Fraud Triangle Model has resulted in the introduction of other fraud models, such as the Fraud Diamond Model (Wolfe & Hermanson, 2004) and Crowe's Fraud Pentagon Model (Crowe, 2011). Both of these models introduce additional fraud-risk factors, which are capability/competence (from the Fraud Diamond Model) and arrogance (from Crowe's Fraud Pentagon Model). The introduction of these new models has sparked a debate as to whether they can suitably be applied in the Malaysian context.

Identifying the suitable fraud-risk factors from these models is imperative based on the fact that: (1) the Fraud Triangle Model is more than a half-century years old (the model was firstly introduced in 1953); (2) the fraud-risk factors from the Fraud Triangle Model are inadequate to predict the likelihood of FFR among Malaysian PLCs; and (3) these Fraud Models (i.e. the Fraud Triangle, Fraud Diamond and Crowe's Fraud Pentagon Model) were developed in western countries, which practise different corporate governance cultures.

As one of the Asian countries that practises a different corporate governance culture and business ethics from the western countries, research on suitable fraud-risk factors in the Malaysian context is required. Previous research indicates significant differences between East Asian nationals' perceptions of business ethics and western perceptions (see Armstrong & Sweeney, 1994; Nyaw & Ng, 1994; Ralston, *et. al*, 1994; Baker & Veit, 1998; Simon, J, 2001). The appropriate fraud-risk factors could have emerged (independently or collectively) from (1) the Fraud Models; or (2) other fraud-risk factors that have not been covered in any of the Fraud Models. Hence, this research will explore the impact of each of the fraud-risk factors from the Fraud Models and additional factors that are not mentioned in the Fraud Models. Research results will suggest suitable fraud-risk factors that can be used to predict the likelihood of FFR among Malaysian PLCs.

1.3   Research Objectives and Research Questions

Based on the problem statement, three research objectives (ROs) are drawn in the research. Five research questions (RQs) are structured following these ROs. Seven sub-research questions (SRQs) representing the fraud-risk factors are specifically developed to support RQ1 and RQ2. RQ5 is the main question of this research and the other RQs (RQ1 to RQ4) are the secondary questions. RQ5 brings the focus of this research, which is to identify the fraud-risk factors that best fit the Malaysian context. Each question from these RQs is answered based on quantitative results of binomial logistic regression analysis. However, before conducting binomial logistic regression analysis, suitable fraud-risk factors in the Malaysian context were explored from the interviews.

Despite numerous research studies on the Fraud Triangle Model, there is no evidence showing any empirical research studies on the fraud-risk factors using the three Fraud Models concurrently (i.e. the Fraud Triangle, Fraud Diamond and Crowe's Fraud Pentagon Model), particularly in Malaysia. This imbalance indicates the need for a close examination of the fraud-risk factors from the Fraud Models, especially the newer Fraud Diamond Model and Crowe's Fraud Pentagon Model. Given that the Fraud Models originated in western countries, it is imperative to determine whether the fraud-risk factors can suitably be used to predict the likelihood of FFR in the Malaysian context. Therefore, examining the suitability of the fraud-risk factors from the Fraud Models has been regarded as the first objective in this research. As such, RO1 is stated as follows:

RO1: To examine the suitability of the fraud-risk factors from the Fraud Models in predicting the likelihood of FFR among Malaysian PLCs.

To achieve RO1, this research has identified three RQs: RQ1, RQ2 and RQ3. These RQs represent the Fraud Triangle Model, the Fraud Diamond Model and Crowe's Fraud Pentagon Model. Each fraud-risk factor from the Fraud Models is specifically addressed in SRQ1, SRQ2, SRQ3, SRQ4 and SRQ5 as stated below:

RQ1: To what extend do the fraud-risk factors from the Fraud Triangle Model (Cressey, 1953) adequate to predict the likelihood of FFR among Malaysian PLCs?

SRQ1: To what extend does incentive/pressure adequate to predict the likelihood of FFR among Malaysian PLCs?

SRQ2: To what extend does opportunity adequate to predict the likelihood of FFR among Malaysian PLCs?

SRQ3: To what extend does attitude/rationalisation adequate to predict the likelihood of FFR among Malaysian PLCs?

RQ2: To what extend do the fraud-risk factors from the Fraud Diamond Model (Wolfe & Hermanson, 2004) adequate to predict the likelihood of FFR among Malaysian PLCs?

SRQ4: To what extend does capability/competence adequate to predict the likelihood of FFR among Malaysian PLCs?

RQ3: To what extend do the fraud-risk factors from Crowe's Fraud Pentagon Model (Crowe, 2011) adequate to predict the likelihood of FFR among Malaysian PLCs?

SRQ5: To what extend does arrogance adequate to predict the likelihood of FFR among Malaysian PLCs?

The differences in corporate governance culture between Malaysia and the western countries could result in discovering other fraud-risk factors, which are not covered in the Fraud Models. The additional fraud-risk factors could possibly be suitable in predicting the likelihood of FFR in the Malaysian context. Hence, RO2 is stated as follow:

RO2: To examine the suitability of additional fraud-risk factors in predicting the likelihood of FFR among Malaysian PLCs.

To achieve RO2, this research has formulated RQ4 to represent the additional fraud-risk factors, which were discovered during the interviews. Each of the additional fraud-risk factors are then being specifically addressed in SRQ6 and SRQ7 as follows:

RQ4: To what extend do the additional fraud-risk factors adequate to predict the likelihood of FFR among Malaysian PLCs?

SRQ6: To what extend does ignorance adequate to predict the likelihood of FFR among Malaysian PLCs?

SRQ7: To what extend does greed adequate to predict the likelihood of FFR among Malaysian PLCs?

The final objective is to identify the suitable fraud-risk factors that best fit the Malaysian context. As such, RO3 and RQ5 are regarded as the main research objective and research question for the research. The suitable fraud-risk factors could be derived solely from the Fraud Models or additional factors. Likewise, a combination of the Fraud Models and additional fraud-risk factors could produce a new Fraud Model that best describes the actual context of Malaysian PLCs. Thus, RO3 is stated as follows:

RO3: To identify the suitable fraud-risk factors that best fit the Malaysian context in predicting the likelihood of FFR among Malaysian PLCs.

To achieve RO3, this research has formulated RQ5 as stated below:

RQ5: Which of these fraud-risk factors are best fit the Malaysian context in predicting the likelihood of FFR among Malaysian PLCs?

Following this, seven hypotheses and fourteen sub-hypotheses are developed to find the answers for all RQs. These hypotheses and sub-hypotheses are statistically tested using sixteen proxy variables to determine causal-effect relationships between the dependent variable (DV) and explanatory variables. DV represents the likelihood of FFR among Malaysian PLCs and explanatory variables represent the fraud-risk factors.

1.4   Outline of the Thesis

This thesis begins with an overview of FFR and the need to conduct a specific research in Malaysia based on identified ROs and RQs. FFR is addressed within the Malaysian context with relevant evidence of corcerned crisis by various stakeholders. Following the introductory part of this chapter, the remainder of this thesis is divided into seven chapters devoted to answering five RQs and seven SRQs.

Chapter 2 discusses relevant theoretical and empirical research studies, particularly on FFR and the Fraud Models - the Fraud Triangle Model (Cressey, 1953), the Fraud Diamond Model (Wolfe & Hermanson, 2004) and Crowe's Fraud Pentagon Model (Crowe, 2011). The chapter begins with a review of FFR from a global perspective, which is eventually narrowed down to the context of this research. The evolution of the Fraud Models continues the flow of the chapter in addressing research gaps. Chapter 2 also describes the Malaysian capital market, especially Bursa Malaysia that provides sample selection for the research. The chapter is concluded with a discussion on several literature that make this research different from previous research studies.

Chapter 3 explains research philosophy and paradigms and methodological choices for this research. Discussions in Chapter 3 begin with three main paradigms (i.e. interpretivism, critical and positivism). The discussions continue with the appropriate philosophical paradigm (i.e. positivism) and methodological choices of the research. The remaining processes of research methodology are explained based on 'the research process onion' suggested by Saunders *at al*. (2009). The methodological framework is based on the fraud-risk factors from the Fraud Models, which were discussed in Section 2.1.5 of Chapter 2. Ethical considerations are also discussed towards the end of this chapter.

Chapter 4 discusses interview findings as supplementary evidences in developing hypotheses and sub-hypotheses for binomial logistic regression analysis. Hence, this chapter explores relevant fraud-risk factors that are believed to be suitable in the Malaysian context from the perspective of interviewees. These interviewees have their own expertise and experience in performing their duties with regard to Malaysian PLCs. The chapter begins with the background of the interviewees, before critically analysing each fraud-risk factor according to the Fraud Models, as the guiding theories. This chapter also suggests additional fraud-risk factors as 'Malaysian specific findings' based on interviewees' perspectives.

Chapter 5 discusses the development of hypotheses and conceptual models based on relevant literature reviews and findings from the interviews in Malaysia. This chapter begins with a summary of pre-developed hypotheses and sub-hypotheses. Following this, each proxy variable is critically explained and linked to a specific hypothesis and sub-hypothesis. The chapter is concluded with the development of four conceptual models (CMs), representing the three Fraud Models and additional fraud-risk factors.

Chapter 6 provides descriptive statistics for the explanatory variables, which is divided into ratio variables and categorical variables. This chapter also provides additional tests for both ratio and categorical variables, including the Wilcoxon sign rank test, the median nonparametric test, the Chi-square test and the test of normality. This chapter is concluded by an analysis on model specification to determine an appropriate regression analysis that suits the data characteristics in this research.

Chapter 7 tests seven hypotheses and fourteen sub-hypotheses to identify suitable determinants of FFR among Malaysian PLCs. The ultimate results of this chapter are derived from binomial logistic regression analysis.

Based on a panel data model, the quantitative analysis measures causal-effect relationships between the dependent variable (FFR) and explanatory variables (the fraud-risk factors). Utilising cross-section and time series panel data, this chapter demonstrates a systematic process in identifying significant explanatory variables for the research. This chapter is concluded with the discovery of a new fraud model that contains suitable fraud-risk factors for predicting the likelihood of FFR among Malaysian PLCs.

Chapter 8 discusses contributions and implications of the research based on empirical findings, particularly binomial logistic regression analysis of panel data models. The discussions are tailored with theoretical and practical perspectives in the Malaysian context. This chapter is concluded with several limitations and recommendations for future research. Figure 1.2 illustrates the outline of the thesis.

In short, **Chapter 4**, **6** and **7** demonstrate research methods used to find the answers for RO1, RO2 and RO3. Therefore, these chapters reflect RQ1, RQ2, RQ3, RQ4 and RQ5 that were initially discussed in Section 1.3 of Chapter 1. Figure 1.2 illustrates outline of the thesis.

Chapter 1: Introduction

Motivation, Problem Statement, Research Objectives & Research Questions

Chapter 2: Literature Review

Dimensions of FFR, evolutions of the Fraud Models (i.e. the Fraud Triangle Model, the Fraud Diamond Model & Crowe's Fraud Pentagon Model), Empirical Literature, Sample Selection & Research Gaps

Chapter 3: Research Methodology

Research philosophy and paradigm, research strategy & methodology

Chapter 4: Interview Findings - Exploration of Relevant Fraud-Risk Factors in the Malaysian Context (Qualitative Method)

Exploration of the fraud-risk factors & proxy variables, additional fraud risk-factors from the interviews & finalisation of hypotheses & sub-hypotheses

Chapter 5: Hypotheses & Conceptual Models Development

Development of 7 hypotheses, 14 sub-hypotheses & 4 conceptual models for the research

Chapter 6: Statistical Characteristics of Explanatory Variables (Quantitative Method)

Discussions on the results of descriptive statistics on ratio variables & categorical variables with relevant additional tests

Chapter 7: Determinants of Fraudulent Financial Reporting among Malaysian PLCs (Quantitative Method)

Discussions on the results of hypotheses testing using panel data models to identify suitable determinants of FFR in the Malaysian context

Chapter 8: Conclusions

Discussions on contributions, implications, limitations & recommendations for future research studies

Figure 1.2: Outline of the Thesis.

CHAPTER 2: LITERATURE REVIEW

Chapter 1 has introduced three research objectives (ROs), five research questions (RQs) and seven sub-research questions (SRQs) based on the problem statement for this research. This chapter reviews relevant literature to support the development of these ROs, RQs and SRQs. Despite various definitions of literature review (see Boote & Beile, 2005; Fraenkel & Wallen, 2006; Machi & McEvoy, 2009; Onwuegbuzie *et al*., 2010), this research agrees with Onwuegbuzie *et al*. (2010: 173) in defining literature review as "an interpretation of a selection of published and/or unpublished documents available from various sources on a specific topic that optimally involves summarisation, analysis, evaluation, and synthesis of the documents". Based on the above definition, this chapter not only reviews relevant literature, but also synthesises the content of this literature, particularly with regard to fraudulent financial reporting (FFR) and the fraud-risk factors from the Fraud Models [i.e. Fraud Triangle (Cressey 1953), Fraud Diamond (Wolfe & Hermanson, 2004) and Crowe's Fraud Pentagon Model (Crowe, 2011)].

Since literature on these topics is extensive, the identification of relevant literature for this chapter is based on those deemed relevant to three primary objectives, which are to: (1) understand fundamental concepts and components of FFR within the context of this research; (2) critically explore the evolutions of the fraud-risk factors from the Fraud Models; (3) and identify specific literature gaps. Generally, this chapter is divided into two main sections, which are theoretical literature review (Section 2.1) and empirical literature review (Section 2.2). The theoretical literature review discusses theoretical and conceptual aspects of FFR regarding the Fraud Models based on previous research.

This section aims to build a clear understanding of the concept of FFR and the fraud-risk factors from the Fraud Models. In addition, the empirical literature review explains the applications of the fraud-risk factors as determinants of FFR based on real world results. In order to provide general ideas on the research setting, this section also explains the Malaysian capital market and related regulatory bodies with regards to Malaysian PLCs. Section 2.3 discusses the roles of Bursa Malaysia pertaining to the major concerns of this research. Section 2.4 concludes the chapter. Figure 2.1 illustrates the structure of this chapter.
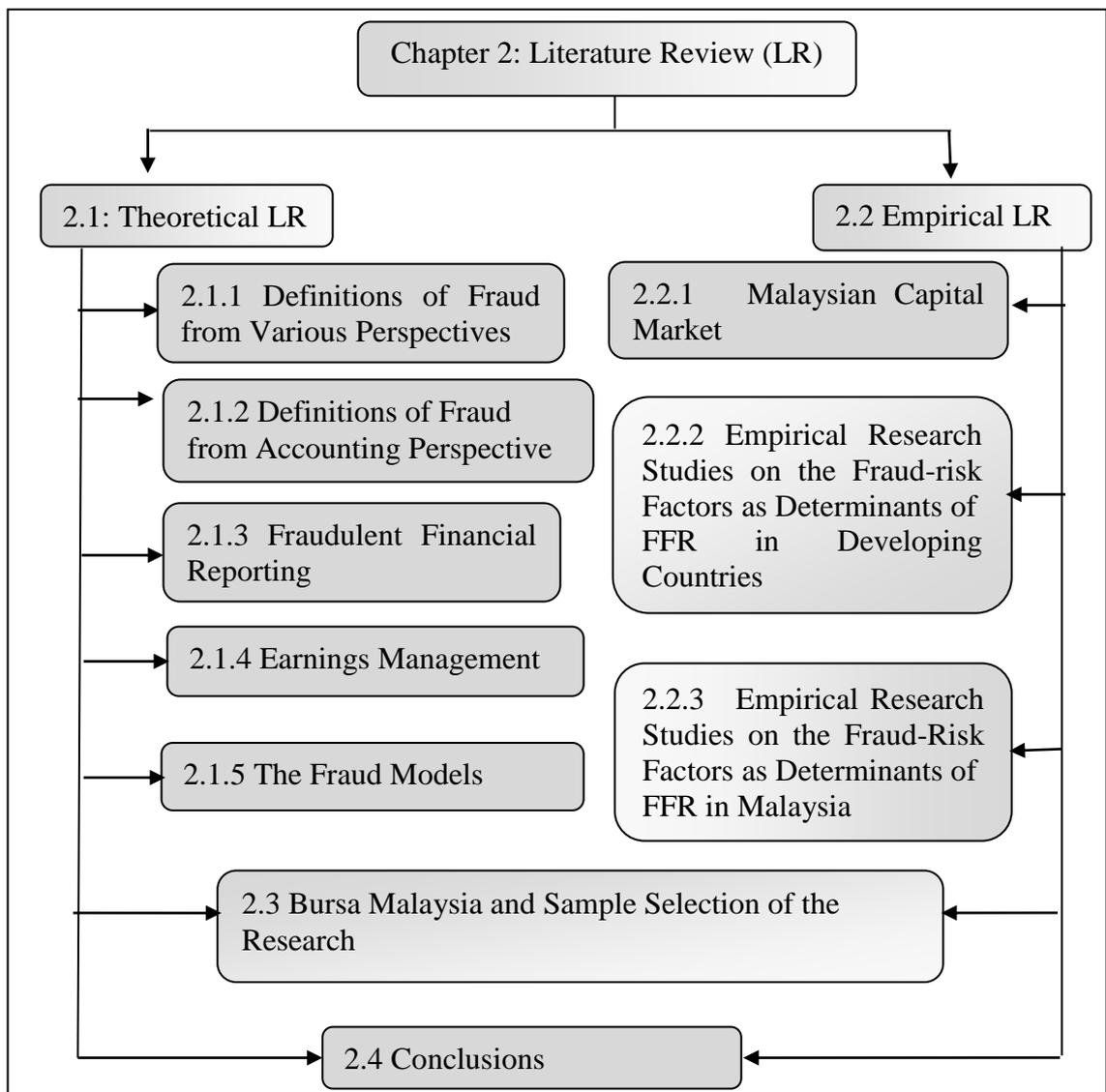
Figure 2.1: Structure of Chapter 2.

21

2.1 Theoretical Literature Review

This section begins with numerous definitions of fraud from different perspectives, before subsequently defining FFR within the context of this research. Besides FFR, fundamental concepts of earnings management are also explained to address the significance of 'likelihood', which relates to the possibility or tendency of the occurrence of FFR. This section is concluded with the evolution of Fraud Models that propose fraud-risk factors.

2.1.1 Definitions of Fraud from Various Perspectives

In general terms, fraud is defined as "the crime of deceiving someone to gain money or personal advantage" by the Compact Oxford English Dictionary, third edition (2008: 399). Duffield and Grabosky (2001: 1) defined fraud as "obtaining something of value or avoiding an obligation by means of deception". Some literature suggests that fraud could be defined differently, based on the different forms in which it is committed (see Sutherland & Crime, 1949; Prosser, 1971; Clinard & Quinney, 1973, 1994; Elliot & Wellinghan, 1980; Braithwaite, 1985; Weirich & Reinstein, 1988;1999; Blocher, 1992; Calavita *et al*., 1997; Moberg, 1997; Apostolou *et al*., 2000; Palshikar, 2002; Black, 2005; Zahra *et al*., 2005; Clinard *et al*., 2010). For example, Moberg (1997) defined fraud based on violation of trust in an organisation, while Palshikar (2002) defined fraud based on the critical application of business intelligence. In other words, the definition of fraud is strongly influenced by the environment in which fraud has occurred and also by whom it is being committed. Moreover, according to the District Judges Association of the US, the definition may change depending on the statute in which the words appear (Henkel, 1991).

The definition can also be reflective of particular precedent in a jurisdiction. In some cases, definition of fraud may not be limited to fraud method, but may also include the harm or consequences of the fraudulent conduct (Henkel, 1991). From a criminology perspective, fraud is usually associated with white collar crime. White collar crime is usually performed by managers and executives (Sutherland & Crime, 1949). Thus, it is defined as "a crime committed by a person of respectability and high social status in a course of his or her occupation" (Sutherland & Crime, 1949: 9). Edelhertz (1970: 3) defined white collar crime as "an illegal act or series of illegal acts committed by non-physical means and by concealment or guile, to obtain money or property, to avoid payment or loss of money or property, or to obtain business or personal advantage".

However, this definition is restricted to the occupational setting, without referring to any social status. Based on numerous definitions of fraud, this research agrees with Wells (1997), who suggested that four elements must be presented for a fraud to exist under the common law. These elements are (1) a material false statement; (2) knowledge that the statement was false when it was uttered; (3) reliance on the false statement by the victim; and (4) damages as a result. Table 2.1 summarises some other definitions of fraud from different perspectives, which have not been covered in the above discussion.

Table 2.1: Definitions of Fraud Based on Previous Literature from Different Perspectives

Perspective	Author/s (Year)	Definition
Political & Psychology	Cohen & Felson (1979)	Personal and Organisational levels: Fraud consists of three-linked factors; i.e. (1) the supply of motivated offenders; (2) the availability of suitable targets; and (3) the absence of capable guardians, i.e. control systems or someone.

Perspective	Author/s (Year)	Definition
Political & Psychology	Kelman & Hamilton (1989)	Personal level: Fraud is seen as a 'crime of obedience' where an individual is forced to follow a vicious order or else face the consequences of disobeying the directive.
	Daboub *et al.* (1995)	Personal level: Fraud as in 'white-collar crime' could be classified according to the extent of individual involvement in that fraud; either 'active participation' or 'passive acquiescence'. The former is when individuals are actively involved in an illegal activity, while the latter is when the managers are aware of the fraud within the company but no corrective action is taken.
	Hamilton & Sanders (1999)	Personal and Organisational levels: Fraud is termed as 'second face evil' when a top manager's action is considered as following the established organisational routines but turns out to be either a massive cover-up or disaster (embedded in the banality of the organisational life.
	Everett *et al.* (2007)	Fraud is associated with 'greed' and 'dishonesty'.
Sociology	Rock (1986)	Cultural level: Fraud or crime is a social problem.
Law	Braithwaite (1985)	Personal and Organisational levels: Fraud as a corporate crime is where actions of a corporation or an employee acting on behalf of a company, such as bribery or pollution control violations, are proscribed and punishable by law.

2.1.2   Definitions of Fraud from an Accounting Perspective

According to the UK Fraud Act (2006), fraud generally occurs when a person commits false representation, fails to disclose information or abuses position, which provides for different ways of committing the offence. The concept has a similar fundamental definition of fraud when it involves an intentional misrepresentation of material for the purpose of inducing another person to act, on which the person relies, with resulting injury or damage (ICAEW, 2001).

Statement on Internal Auditing Standard (SIAS, 1985) No 3: 'Deterrence, Detection, Investigation, and Reporting of Fraud', clearly indicates that deterrence of fraud is the responsibility of management, but it is also stated that internal auditors are responsible for determining the adequacy and effectiveness of management's actions. In addition, SIAS (1985) also highlights that business insolvency could be predicted from the firm's audited financial statements (in this research referred to as 'financial reports') in the years prior to the company's collapse. Similar to the general definitions of fraud as explained above, the Malaysian Approved Standards on Auditing (MASA) defines fraud as "an intentional act by one or more individuals among management, those charged with governance, employees, or third parties, involving the use of deception to obtain an unjust or illegal advantage" (MASA, 2001: 6).

Apart from accounting and auditing standards, definitions of fraud vary in the accounting literature, depending on different levels or perspectives. Generally, most accounting literature defines fraud from personal and organisational perspectives (see Clinard & Quinney, 1973; Beasley, 1996; Apostolou *et al.*, 2000; Rezaee, 2005; Zahra *et al.*, 2005). Beasley (1996) defined fraud from a personal perspective when he mentioned that senior level managers wilfully undertake actions that materially mislead others about the actual value of the company's assets, transactions, or financial positions. Apostolou *et al.* (2000) also defined fraud from a personal perspective when they relate fraud with intentional misrepresentation of amounts or disclosures in the financial statements. Meanwhile, Zahra *et al.* (2005) defined fraud from an organisational perspective when they referred to fraud as deliberate actions taken by top management to deceive, con, swindle, or cheat investors or other key stakeholders and labelled it as a 'white-collar crime'. According to Zahra *et al.* (2005), top management could also be involved in securing a contract, or reducing costs, which indirectly benefit the perpetrators, through resulting in either promotions or salary increases.

In addition, they also suggested that fraud could be categorised in terms of different industries, scopes and durations. They also reviewed the consequences of management fraud on various stakeholder groups such as shareholders, debt-holders, managers, local communities and society. Besides Zahra *et al.* (2005), top management fraud has also been discussed by several researchers such as Hambrick and D'Aveni (1992), Haleblian and Finkelstein (1993) and Daboub *et al.* (1995).

Nevertheless, fraud is also viewed from both personal and organisational perspectives. For example, Clinard and Quinney (1973) differentiated fraud based on personal and organisational perspectives. They believed that former is committed for the benefit of individual perpetrator (i.e. embezzlement or padding expense reports) whereas the latter is committed by the individual for the benefits of the company. Likewise, Rezaee (2005) also viewed fraud from both perspectives, which involves intent and deception by a clever team of knowledgeable perpetrators (such as Executive Directors and auditors) with a set of well-planned schemes and considerable gamesmanship.

Additionally, definitions of fraud could also incorporate other parties. For instance, the occurrence of fraud may include the involvement of investors and creditors in intentional deception and misleading financial reports (Elliot & Willingham, 1980; Weirich & Reintein, 1999). The involvement of investors in fraud also exists in the forms of insider trading, self-dealing, failure to disclose facts, corruption and covers-ups (Moberg, 1997). Based on the above definitions, this research concludes that the definition of fraud consists of: (1) false representation of a material fact; (2) representation made with knowledge of its falsity; (3) a person acts on the representation; and (4) the person acting is damaged by his/her reliance. These elements are in accordance with Prosser (1971) who also suggested that fraud could also be derived by an omission or purposeful failure to state material facts.

2.1.3 Fraudulent Financial Reporting

Fraudulent financial reporting (also referred to as 'FFR') typically takes the form of material misstatement intentionally made in the financial reports (Dooley, 2002). FFR normally involves complex methods for misusing allocation, overstating income and the assets value, understating expenses or underreporting the existence of liabilities (Dooley, 2002). Misstatements could also be connected to intentional mischaracterisation of, or failure to disclose transactions, accounting events, or other information material to a fair presentation of the reported results of operation (Dooley, 2002). Sometimes, misstatement can be referred to as 'misrepresentation'. For example, the Institute of Internal Auditors (IIA) addresses FFR as misrepresentation of financial data or intentional concealment in categorising FFR (besides asset misappropriation and illegal acts) as one of the components of fraud.

Similarly, FFR is considered as one of the components of fraud when Statement on Auditing Standards (SAS) No. 82 defines fraud to include misstatements arising from FFR and misstatements arising from misappropriation of assets; sometimes referred to as defalcation to deceive users (AICPA, 1997). Later, SAS No. 99 and SAS No. 113 through 'AU Section 316: Consideration of Fraud in a Financial Statement Audit' abrogated SAS No.82 with detailed explanation of those types of misstatements that are relevant to the auditor's consideration of fraud. Table 2.2 summarises definitions of FFR as one of the components of fraud according to relevant accounting and auditing standards.

Table 2.2: Definitions of Fraud and FFR from Relevant Accounting and Auditing Standards.

Accounting & Auditing Standard Bodies	Definition of FFR (as a Component of Fraud)
The National Commission on FFR 1987 (commonly known as 'Treadway Commission')	Intentional or reckless conduct, whether (by) act or omission, that results in materially misleading financial statements.
International Standard on Auditing (ISA) 240: The Auditor's Responsibilities Relating to Fraud in an Audit of Financial Statements [International Auditing and Assurance Standards Board (IAASB), 2009]	An intentional act by one or more individuals among management, those charged with governance [i.e. the directors], employees, or third parties, involving the use of deception to obtain an unjust or illegal advantage. (para 11) …the auditor is concerned with fraud that causes a material misstatement in the financial statements. Two types of intentional misstatements are relevant to the auditors – misstatements resulting from fraudulent financial reporting and misstatements resulting from misappropriation of assets (para 3).
AU Section 316: Consideration of Fraud in a Financial Statement Audit (SAS No.99 ; SAS No.113)	"Two types of misstatements are relevant to the auditor's consideration of fraud—misstatements arising from fraudulent financial reporting and misstatements arising from misappropriation of assets. Misstatements arising from fraudulent financial reporting are intentional misstatements or omissions of amounts or disclosures in financial statements designed to deceive financial statement users where the effect causes the financial statements not to be presented, in all material respects, in conformity with generally accepted accounting principles (GAAP). Fraudulent financial reporting may be accomplished by the following: - Manipulation, falsification, or alteration of accounting records or supporting documents from which financial statements are prepared - Misrepresentation in or intentional omission from the financial statements of events, transactions, or other significant information - Intentional misapplication of accounting principles relating to amounts, classification, manner of presentation, or disclosure FFR need not be the result of a grand plan or conspiracy. It may be that management representatives rationalize the appropriateness of a material misstatement, for example, as an aggressive rather than indefensible interpretation of complex accounting rules, or as a temporary misstatement of financial statements, including interim statements, expected to be corrected later when operational results improve…" (AICPA 2013, AU S316.05 and AU S316.06)

Accounting & Auditing Standard Bodies	Definition of FFR (as a Component of Fraud)
AU Section 316: Consideration of Fraud in a Financial Statement Audit (SAS No.99 ; SAS No.113)	- Manipulation, falsification, or alteration of accounting records or supporting documents from which financial statements are prepared - Misrepresentation in or intentional omission from the financial statements of events, transactions, or other significant information - Intentional misapplication of accounting principles relating to amounts, classification, manner of presentation, or disclosure FFR need not be the result of a grand plan or conspiracy. It may be that management representatives rationalize the appropriateness of a material misstatement, for example, as an aggressive rather than indefensible interpretation of complex accounting rules, or as a temporary misstatement of financial statements, including interim statements, expected to be corrected later when operational results improve…" (AICPA 2013, AU S316.05 and AU S316.06)
Chartered Institute of Management Accountant (CIMA), United Kingdom (2009) : Corporate Fraud – Topic Gateway Series No.57	Fraud essentially involves using deception to make a personal gain for oneself dishonesty and/or create a loss for another. Although definitions vary, most are based around these general themes. The term 'fraud' commonly includes activities such as theft, corruption, conspiracy, embezzlement, money laundering, bribery and extortion.

Source: International Auditing and Assurance Standards Board & CIMA, UK.

A research conducted by Beasley (1996) to examine the relationship between Board of Directors (BODs) composition and the occurrence of fraud also categorised FFR as one of the components of fraud. The first component includes occurrences where management intentionally issues materially misleading financial statement information to outside users. The second component includes occurrences of misappropriation of assets by top management, which includes the chairperson, vice chairperson, chief executive officer, president, chief financial officer and treasurer.

Based on the above discussions, this research infers that the terminology of fraud is generally associated with three perspectives: (1) management perspective (i.e. white collar crime, corporate fraud, organisational crime and top management fraud[5]); (2) accounting perspective (i.e. FFR and embezzlement of assets[6]); and (3) political perspective (i.e. bureaucratic fraud, bribery or corruption). These terminologies are summarised in Figure 2.2. However, the terminologies are not mutually exclusive, but rather serve as a stimulus for explanations.
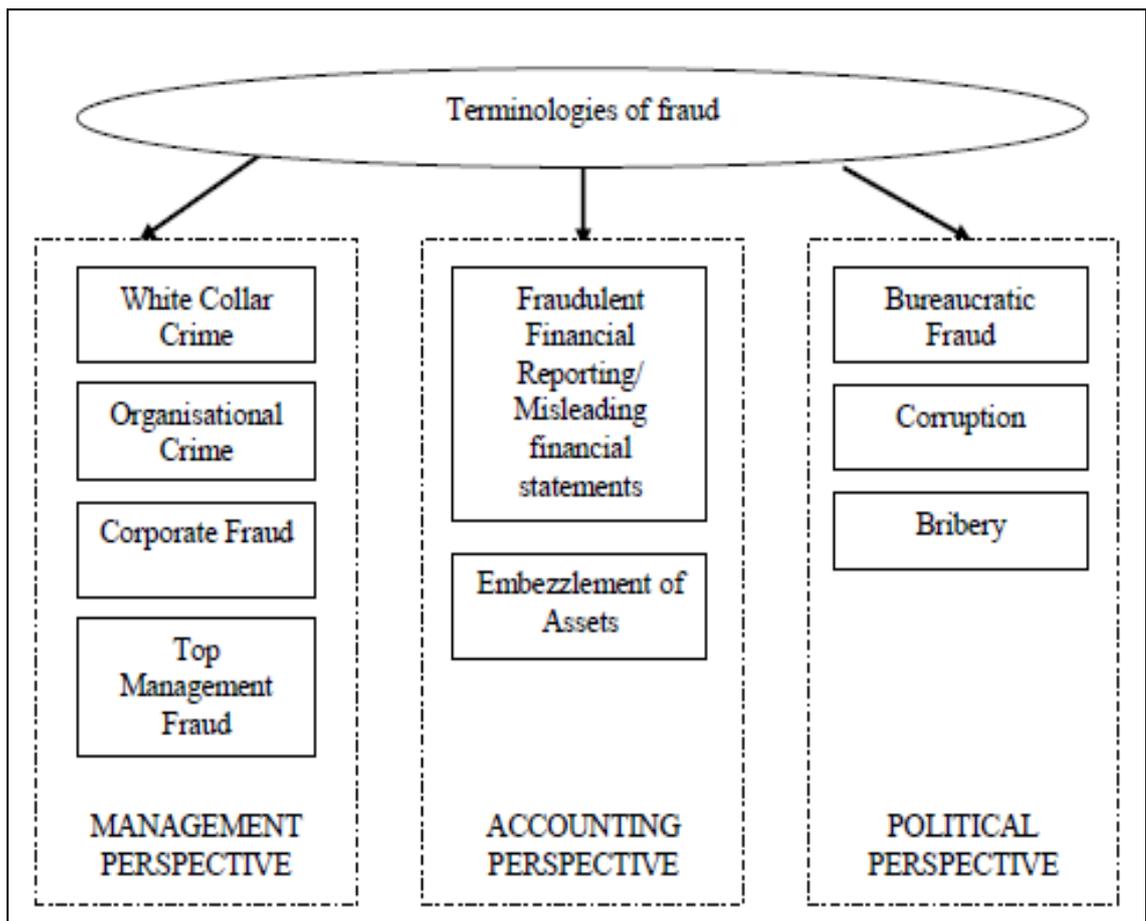
Figure 2.2: Terminologies of Fraud.
Source: Ahmad Khair, 2012.

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[5] FFR is also known as 'management fraud' since it involves senior or top management's fraudulent acts, such as misrepresentation of financial statements (Silverstone & Sheetz, 2004).
[6] This research does not focus on embezzlement (misappropriation) of assets as another component of fraud.

Having connected various definitions of FFR, this research defines FFR as intentional misstatements or disclosures in financial reports that are deliberately done to deceive financial reports users. FFR causes the financial reports not to be presented, in all material respects, in conformity with generally accepted accounting principles (GAAP). The GAAP is a group of accounting standards that are widely accepted as appropriate to the field of accounting (Wilson *et al.*, 2001). Accounting standards are necessary so that financial statements are meaningful across a wide variety of businesses; otherwise, the accounting rules of different companies would make comparative analysis almost impossible. Specifically, 'intentional misstatement' or 'disclosures' mainly involve the alteration of financial reports data.

This statement is supported by Lundelius (2011) when he claims financial reporting fraud (in this research referred to as 'FFR') involves the alteration of financial statement data, usually by a company's management to achieve a fraudulent result. Based on this definition, 45 fraudulent Malaysian PLCs have been identified according to relevant FFR offences, categorised by Bursa Malaysia and Securities Commission Malaysia (SC) as follows:

(1) False statements or information; and/or

(2) Misleading statements; and/or

(3) Combination of false statements/information and misleading statements.

Further information on these categories is provided in Chapter 3 (Section 3.2.6.1). These categories are in accordance with AU Section 316 of AICPA, which includes SAS 99 (that adopts fraud-risk factors from the Fraud Triangle Model). According to AU Section 316, FFR can be accomplished from the following acts:

(1) Manipulation, falsification, or alteration of accounting records or supporting documents from which financial reports are prepared; and/or

(2) Misrepresentation in or intentional omission from the financial reports of events, transactions, or other significant information; and/or

(3) Intentional misapplication of accounting principles relating to amounts, classification, manner of presentation, or disclosure.

In developing hypotheses and sub-hypotheses, this research predicts the likelihood of FFR from two perspectives: (1) individual perspective; and (2) organisational perspective. The individual perspective is represented by Executive and Non-Executive Directors in Malaysian PLCs, while the organisational perspective refers to top management (as a team) in Malaysian PLCs. Wells (1997) referred to Executive and Non-Executive Directors as 'Executives', 'managers' and 'principals of organisations' in defining fraud. Above all, Wells (1997: 4) acknowledged Executives as employees, as long as they "receive regular and periodic compensation from an organisation for their labour". As a result, five sub-hypotheses are formulated from an individual perspective and nine sub-hypotheses from an organisational perspective. Details of each sub-hypothesis are discussed in Chapter 4 (Hypotheses and Conceptual Models Development). Figure 2.3 illustrates this definition and category within the context of the research.
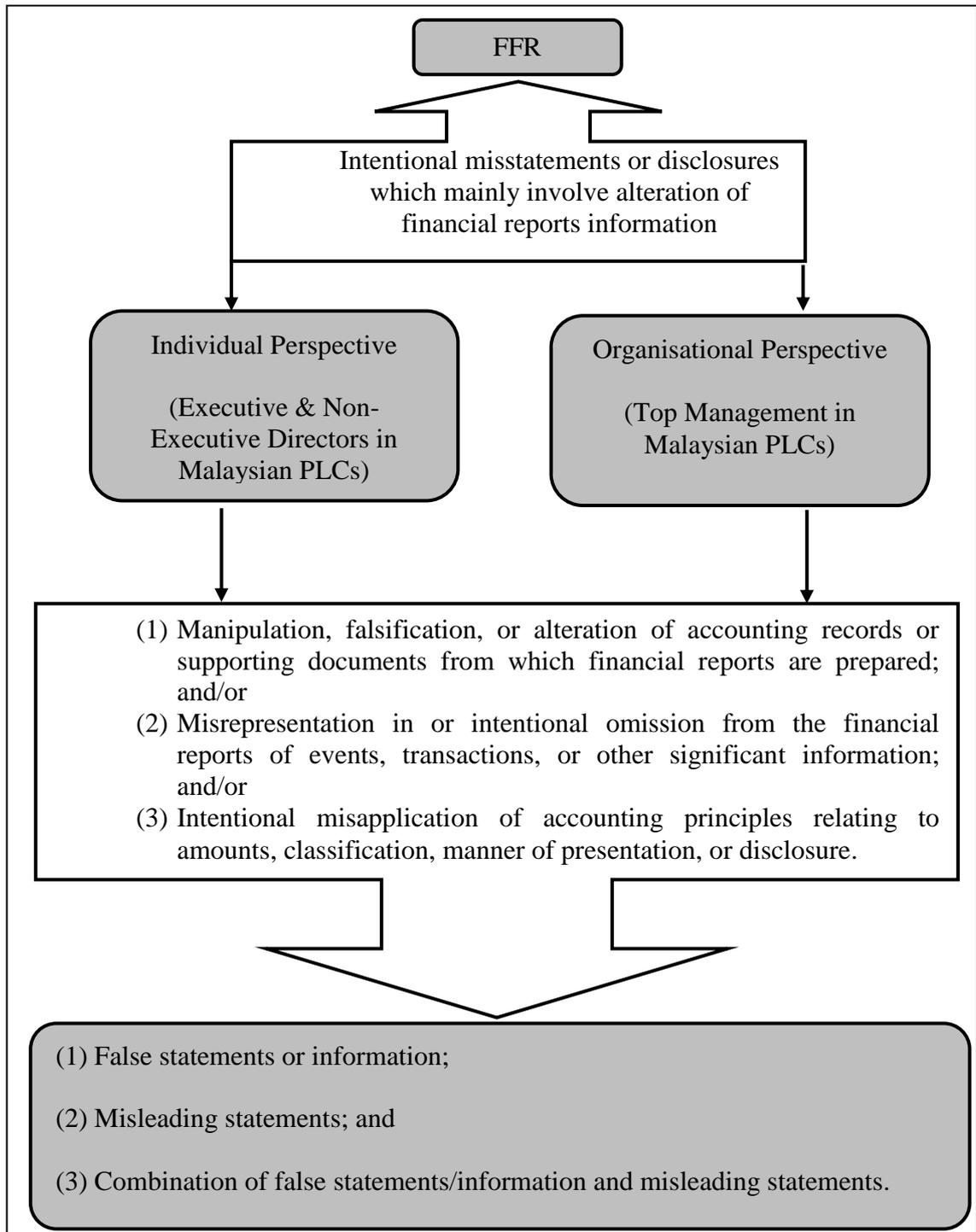
**Figure 2.3: Definition and Categories of FFR within the Context of this Research.
Source: Adapted from AU S316 (AICPA, 2002), Bursa Malaysia (2014a) and SC
(2013a).**

2.1.4 Earnings Management

The concept of earnings management (EM) is significantly important because this research predicts the likelihood of FFR, which involves manipulation of financial reports. According to Healy and Wahlen (1999: 368) EM occurs "when managers use judgement in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers". This situation has led EM to be referred to as 'income smoothing', 'earnings manipulation', 'window dressing', and 'creative accounting' under a series of different headings (Simon, 2001).

An empirical research conducted by Healy (1985) revealed that managers, as internal officials, have inside information on companies' net income before practising EM. In some circumstances, the inside information is prohibitively costly for others to find out (Schipper, 1989). Therefore, these managers would opportunistically manage net income to maximise their bonuses. Likewise, according to Khalil and Simon (2014), managers tend to reduce the fluctuations in reported earnings by increasing (decreasing) earnings when earnings are low (high) in an attempt to retain their position, decrease the probability of political and governmental intervention, and increase their compensation.

Specifically, Healy (1985) mentioned that there are two approaches to control net income. The first approach is controlling various accruals, such as amortisation expense and increase in net accounts receivable. The second approach is changing accounting policies. The first approach involves legitimate discretionary choices at an appropriate time to require accounting recognition.

For example, marketing expenditures, which usually should be expensed when incurred, may be accelerated in the fourth quarter if the entity is exceeding its earnings target or deferred if it is failing to meet that target (Healy, 1985). However, EM, unlike fraud, involves the selection of accounting procedures and estimates that conform to GAAP. As a result, the second approach of changing the accounting policy is allowable (Healy, 1985). Another example is a switch of policy from accelerated to straight-line depreciation of assets. These are legitimate management decisions that affect reported earnings whose consequences are accounted for in conformity with GAAP. A recent research conducted by Khalil and Ozkan (2016) has indicated that increasing the ratio of Non-Executive Directors on the BODs or Audit Committee may not be enough to adequately constrain opportunistic EM. This finding suggests another example of EM that confirm to GAAP.

The act of manipulating reported earnings is motivated by numerous reasons, including (1) influencing the capital market (see Healy & Wahlen, 1999; Cormier & Magnan, 1999); (2) contracts written in terms of accounting number "lending contracts" (see Healy & Wahlen, 1999; Bagnoli & Watts, 2001; Othman & Zeghal, 2006); (3) management compensation contracts (Holthausen *et al*., 1995); (4) anti-trust or other government regulation and political costs (see Watts & Zimmerman, 1986; Jones, 1991; Cahan, 1992; Key, 1997; Wilson & Shailer, 2007); (5) effective tax rate and issuing equity (see Sunder, 1973; Hunt, 1985; Dopuch & Pincus, 1988; Lindahl, 1989); (6) the existence of relative performance evaluation specifically when firms expect their competitor firms to manage earnings (Burgstahler & Dichev, 1997); (7) avoidance of earnings decreases and losses (Daniel *et al*., 2008); and (8) meeting dividend thresholds (Goncharoy & Zimmermann, 2006).

Occasionally, EM could also lead to aggressive EM. The Auditing Practices Board (APB, 2001) defines aggressive EM as "accounting practices including the selection of inappropriate accounting policies and/or unduly stretching judgments as to what is acceptable when forming accounting estimates.

These practices, while presenting the financial performance of the companies in a favourable light, do not necessarily reflect the underlying reality" (APB, 2001: 3). Aggressive EM is usually derived from corporate pressure, especially when a company is expected to achieve outstanding performance. As an example, aggressive EM can exist when shareholders expect a higher dividend on their shares from their capital investment in a PLC. In order to outperform dividend thresholds, the management team would have to execute aggressive EM to produce a handsome profit. As a result, some expenditures such as marketing costs, utilities and administrative expenses would be reduced or transferred to other accounts in order to reduce the corporate tax.

At the same time, the PLC's future earnings are recognised in the current year. The act of manipulating PLC's future earnings is described as 'the Bonus Plan Hypothesis' of Positive Accounting Theory (Watts & Zimmerman, 1990). The hypothesis suggests that managers or companies with a bonus plan (or dividend plan in this example) are more likely to choose accounting procedures that shift reported earnings from future period to current period, all other things being equal. Besides, the management team can manipulate a PLC's credit and debts performance to be adjusted into different quarters of payment to rebalance the total expenditures at the particular year-end. This example shows that aggressive EM can stimulate individuals or management teams to manipulate any accounts and accounting procedures to achieve certain expectations.

Based on previous research on EM (see Healy, 1985; Cormier & Magnan, 1999; Healy & Wahlen, 1999; Bagnoli & Watts, 2001; Simon, 2001; Othman & Zeghal, 2006; Khalil & Simon, 2014; Khalil & Ozkan, 2016), this research concludes that as far as PLCs are concerned, there are similarities in the ways that several accounting transactions and accounts can be manipulated.

They are (1) accounting policies; (2) net or operating profits; (3) accounts payable, debts and liabilities; (4) assets, accounts receivables and inventories; and (5) PLCs' financial performance, such as share prices, bonuses and dividends. As a result, several proxy variables[7] used in this research (i.e. growth, leverage, changes of the accounting policies, undeclared policies on doubtful debts and account receivable and Executive Directors' remunerations) are relatively connected to EM.

According to APB, the manipulation of financial reports may increase over time until it "crosses the border of acceptability" (APB, 2001: 7), which is defined as 'FFR' in the context of this research. Furthermore, the concept of EM is also relevant to promote the idea of financial reports' manipulation to mislead stakeholders (Healy & Wahlen, 1999). According to Rezaee (2005), EM is the most common method of engaging in financial statement fraud (in this research referred to as 'FFR') by distorting earnings to achieve earnings targets, analyst forecasts, and/or an earnings trend. As a result, several proxy variables in this research are suggested based on previous research studies on EM. This research predicts that some indications of fraud-risk factors can be detected through EM, which is potentially becoming one of the favourable ways to manipulate financial reports within the GAAP across different cultural practices (Doupnik & Tsakumis, 2004; Doupnik, 2008).

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[7] Growth and leverage are used to test incentive and pressure factor respectively. Changes of the accounting policies are used to test rationalisation. Undeclared policies on doubtful debts and account receivable are used to test capability/competence; and Executive Directors' remunerations are used to test greed.

Thus, this research views EM as a gateway to FFR because the manipulation of financial reports can possibly happen beyond the GAAP.

2.1.5 Fraud Models

This section discusses the evolution of fraud-risk factors from the Fraud Models, particularly the Fraud Triangle Model (Cressey, 1953), the Fraud Diamond Model (Wolfe & Hermanson, 2004) and Crowe's Fraud Pentagon Model (Crowe, 2011).

2.1.5.1 The Fraud Triangle Model

The Fraud Triangle Model was developed by Cressey (1953), an American sociologist and criminologist. He focused his research on the circumstances that lead individuals to engage in fraudulent and unethical activity. Later, his research became known as the Fraud Triangle Model (see Dorminey *et al*, 2010; 2012; Ruankaew, 2013). The Fraud Triangle Model (Cressey, 1953) provides a model to identify factors (hereafter referred to as 'fraud-risk factors') that cause fraudsters to commit fraud. These fraud-risk factors are: (1) incentive/pressure; (2) opportunity; and (3) attitude/rationalisation (Cressey, 1953).

Albrecht *et al*. (2004) have compared these fraud-risk factors to a fire, using the simple explanation of three elements that are necessary to cause a fire, which are (1) oxygen; (2) fuel; and (3) heat. Applying the analogy to a fire, fraud is unlikely to occur in the absence of the three fraud-risk factors mentioned in the Fraud Triangle Model (Cressey, 1953), and the severity of fraud depends on the strength of each fraud-risk factor (Albrecht *et al*., 2004). In other words, for an individual to commit fraud, perceived pressure, an opportunity, and a way to rationalise the attitudes must exist (see Albrecht *et al*., 2004; Lou & Wang, 2009; Ruankaew, 2013). Figure 2.4 illustrates the factors of the Fraud Triangle Model. The next section explains each of these factors respectively.
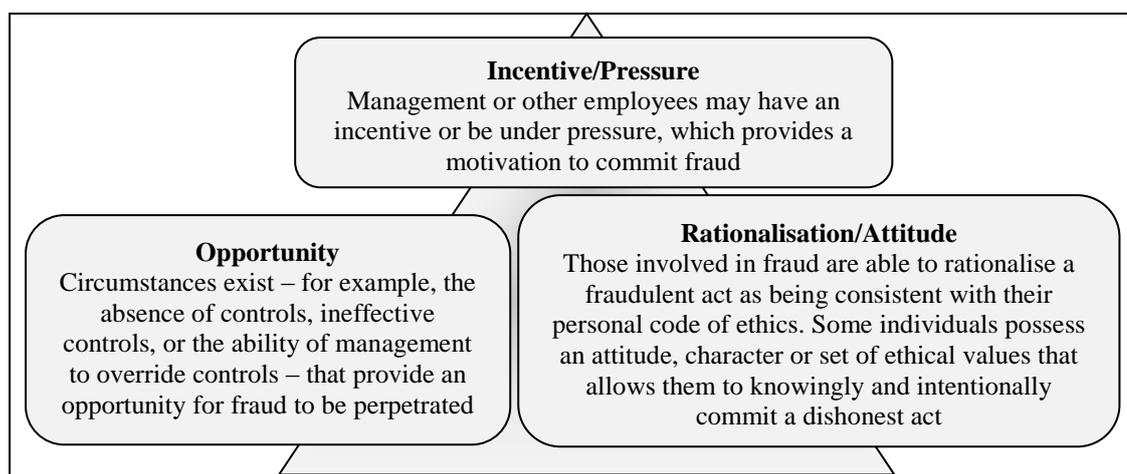
Figure 2.4: Three Factors of the Fraud Triangle Model.
Source: Ramos, 2003.

2.1.5.1.1   Incentive/ Pressure

According to Cressey (1953), management or other employees may have an incentive or be under pressure that provides a motivation to commit fraud. Most companies (in this research referred to as 'PLCs') offer company shares to their executives and even practise salary schemes based on the company's performance (Albrecht *et al*., 2004). Applying similar terms used by Cressey (1953), this research refers to management as 'Malaysian PLCs' (at organisational level) and employees as 'Executive and Non-Executive Directors in Malaysian PLCs' (at individual level). In the view of Agency Theory (Fama, 1980), both management and employees perspectives are related to an agent perspective since they are answerable to shareholders who acted as the principals of Malaysian PLCs.

There are numerous causes of that pressure. Some of these are non-sharable financial pressures, management or shareholders' pressures, and pressure to meet society's expectation (Albrecht *et al*., 2008; 2010). It is claimed that about 95% of all cases of fraud are influenced by financial pressures (Albrecht & Albrecht, 2002). Cressey (1953) used 'non-sharable' to distinguish the dissimilarity of people's thought in handling financial pressure. Non-shareable financial pressures suggest that everybody has financial pressures, but not everybody commits fraud (Cressey, 1953).

What constitutes a non-shareable need is completely in the eye and mind of the beholder (Cressey, 1953). Thus, non-shareable explains a "problem as one which must be kept secret and private" (Cressey, 1973: 34). According to Cressey (1953), non-sharable financial pressures are divided into six categories; (1) difficulty in paying back debts; (2) problems resulting from personal failure; (3) business reversals (uncontrollable business failures such as inflation or recession); (4) physical isolation (the trust violator is isolated from people who can help him); (5) status gaining (living beyond one's means; and (6) employer-employee relations (employer's unfair treatment).

Definitions of pressure vary in different literature. For instance, Lister (2007: 63) defined pressure as "the source of heat for the fire". He categorised pressure into three categories; (1) personal pressure to pay for lifestyle; (2) employment pressure from continuous compensation structures, or management's financial interest; and (3) external pressure such as threats to the business financial stability, financier covenants, and market expectations. Lister (2007) agreed with the non-sharable principle of Cressey (1953) that the presence of these pressures in someone's life does not mean he or she will commit fraud.

Meanwhile, Vona (2008) defined pressure as the consequence that occurs from personal and corporate factors on the individual. The motive to commit fraud may be driven by the pressures influencing the individual, by rationalisation, or by sheer opportunity. Albrecht *et al*. (2008; 2010), however, mentioned that pressure can be financial or non-financial. Examples of perceived financial pressures that can motivate fraud are personal financial losses, falling sales, inability to compete with other companies, greed, living beyond one's means, personal debt, poor credit, the need to meet short-term credit crises, inability to meet financial forecasts, and unexpected financial needs (see Kassem & Higson, 2012; Albrecht *et al*., 2008, 2010).

They also provide examples of the need to report better results than actual performance, frustration with work, or even a challenge to beat the system (see Albrecht *et al*., 2004, 2008; Kassem & Higson, 2012). However, they believed that even with very strong perceived pressures, Executives who believe they will be caught and punished rarely commit fraud (see Albrecht *et al*., 2008, 2010; Kassem & Higson, 2012). According to Murdock (2008), pressure can be financial or non-financial. Murdock (2008) also suggested political and social factors as additional sources of pressure. Non-financial pressure can be derived from a lack of personal discipline or other weaknesses such as a gambling habit or drug addiction, while political and social pressure occurs when people feel they cannot appear to fail due to their status or reputation (see Murdock, 2008; Kassem & Higson, 2012).

However, Rae & Subramaniam (2008) associated pressure with employees' motivation to commit fraud as a result of greed or personal financial pressure. In summary, previous literature suggests different classifications of pressure from different perspectives. Therefore, definitions of pressure can be generally classified into personal, corporate and external pressure as proposed by Kassem & Higson (2012) and summarised in Figure 2.5.

Figure 2.5: Classifications of Pressure.
Source: Kassem & Higson, 2012.

2.1.5.1.2   Opportunity

Cressey (1953) mentioned circumstances can exist to provide opportunity for fraud to be perpetrated. Rae and Subramaniam (2008) referred to opportunity as a weakness in the system which the employee has the power or ability to exploit, making fraud possible (Rae & Subramaniam, 2008). It has been argued that some occupational and organisational contexts provide greater possibility and opportunity for fraudulent behaviour to occur (see Lister, 2007; Drew & Drew, 2010). Some examples are high turnover of management in key roles, lack of segregation of duties, and complex transactions or organisational structures (Lister, 2007).

Cressey (1953) stressed management control as examples of opportunity such as (1) the absence of controls; (2) ineffective controls; or (3) the ability of management to override controls. These factors are also proposed by Albrecht *et al.* (2004, 2008, 2010) when they mention the absence or ineffectiveness of controls (internally or externally), ability to override management's controls and weak governance as examples of opportunity. Additionally, Albrecht *et al.* (2004, 2008, 2010) also suggested other factors for opportunity such as a weak BODs, a lack of or circumvention of controls that prevent/detect fraudulent behaviour, failure to discipline fraud perpetrators, lack of access to information, and the lack of an audit trail. Not surprisingly, those contexts which legitimately involve financial dealings are particularly amenable to fraudulent activity (Smith, 1999; Drew & Drew, 2010).

Meanwhile, Vona (2008), as cited in Kassem and Higson (2012), believed a person's position in the organisation contribute to the opportunity to commit fraud. This is because there is a positive correlation between opportunity to commit fraud and the ability to conceal the fraud (see Vona, 2008; Kassem & Higson, 2012).

Thus, understanding the opportunity for fraud to occur provides some ideas on which fraud schemes an individual can commit, and how fraud risks occur when the controls do not operate as intended by management (see Vona, 2008; Kassem & Higson, 2012).

2.1.5.1.3   Attitude/Rationalisation

Cressey (1953, 1973) suggested that fraudsters are able to rationalise a fraudulent act as being consistent with their personal code of ethics. Cressey (1953, 1973) also added that some individuals possess an attitude, character or set of ethical values that allows them to knowingly and intentionally commit a fraud. Rationalisation provides a justification of fraudulent behaviour as a result of an employee's lack of personal integrity, or other moral reasoning (Rae & Subramaniam, 2008).

Some rationalisations are derived from fraudsters' belief that they deserve to earn some rewards, such as money or asset for working hard (see Albrect & Albrect, 2002; Beasley *et al*., 2000). This phenomenon explains that rationalisation is a frame of mind or ethical character that allows employees to intentionally misappropriate cash or other organisational assets and justify their dishonest actions (see Albrect & Albrect, 2002; Beasley *et a*l., 2000).

Rationalisations also imply providing 'good reasons' when fraudsters commit fraud. Among the reasons are to keep the stock price high, adopting similar aggressive accounting practices to other companies, or for the company's benefit (Albrect *et al*., 2004, 2008). In order to trace rationalisation's risk factors, Lister (2007) suggested corporate culture as one of the indications, even though corporate culture does not necessarily imply the personal value systems of each individual in the organisation.

2.1.5.1.4 Applications of the Fraud Triangle Model in Accounting and Auditing

The Fraud Triangle Model is widely used by audit professionals and standards-setters as a tool for detecting fraud. For instance, the Treadway Commission (1987) concludes FFR is caused by a combination of situational pressures and opportunity. The Treadway Commission defines pressures as 'red flags', which are associated with the risk of FFR increases. Meanwhile, AICPA (2002) through '*AU Section 316: Consideration of Fraud in a Financial Statement Audit'* has specifically mentioned the three factors of the Fraud Triangle Model (Cressey, 1953) in the Standards:

"Three conditions generally are present when fraud occurs. First, management or other employees have an incentive or are under pressure, which provides a reason to commit fraud. Second, circumstances exist - for example, the absence of controls, ineffective controls, or the ability of management to override controls - that provide an opportunity for a fraud to be perpetrated. Third, those involved are able to rationalise committing a fraudulent act. Some individuals possess an attitude, character, or set of ethical values that allow them to knowingly and intentionally commit a dishonest act. However, even otherwise honest individuals can commit fraud in an environment that imposes sufficient pressure on them. The greater the incentive or pressure, the more likely an individual will be able to rationalise the acceptability of committing fraud" (AU316.06, para .07: 1722).

Meanwhile, the Financial Reporting Council (FRS, 2014) reported that the International Auditing Standards Board has issued a revised version of International Standard on Auditing 240 (ISA 240, para 3): '*The Auditor's Responsibilities Relating to Fraud in an Audit of Financial Statements'* which states that "Fraud, whether FFR or misappropriation of assets, involves incentive or pressure to commit fraud, a perceived opportunity to do so and some rationalisation of the act".

Based on the standard example, incentive or pressure to commit FFR may exist when management is under pressure, from sources outside or inside the entity, to achieve an expected (and perhaps unrealistic) earnings target or financial outcome. A perceived opportunity to commit fraud may exist when the trust violator is in a position of trust or has knowledge of specific deficiencies in internal control (Kassem & Higson, 2012).

2.1.5.1.5 Critique of the Fraud Triangle Model

Despites being supported by audit regulators, the Fraud Triangle Model (1953) also suffers from critics (see Albrecht *et al*., 1984; Wells, 1997; Wolfe & Hermanson, 2004; Dorminey *et al*., 2010; Kranacher *et al*., 2010; Crowe, 2011; Kassem & Higson, 2012). According to Wells (1997), the Fraud Triangle Model will not fit all situations, particularly current social changes, as the model is nearly half a century old. As such, the model alone is an inadequate tool for deterring, preventing and detecting fraud (Wells, 1997; Kassem & Higson, 2012). This is because two sides of the Fraud Triangle Model (pressure and rationalisation) cannot be observed, and some important factors, like fraudsters' capabilities are ignored (Kassem & Higson, 2012).

Alternatively, rationalisation is suggested to be replaced with personal integrity, which is more observable (Dorminey *et al*., 2012). In addition, non-financial factors such as ego and coercion are suggested as an expanded version for motive factors of the Fraud Triangle Model, while fraudster's personal capabilities are suitable to be added as a fourth factor (Kassem & Higson, 2012). Dorminey *et al*. (2010) summarised a few shortcomings of the Fraud Triangle Model (Cressey, 1953) as shown in Table 2.3. As a result, a few fraud-risk assessment models have been developed.

Table 2.3: Summary of the Fraud Triangle Model and Model Extensions

	Definition	Shortcomings	Extension	Benefit of Extension
The Fraud Triangle Model (Cressey, 1953)				
	Convergence of perceived pressure, perceived opportunity and rationalisation to facilitate fraud.	Fraud Triangle is from the fraudster's perspective, so two attributes (pressure and rationalisation) are generally non-observable.	Fraud Diamond: Add an assessment of capability (see the discussion of pressure and rationalisation in the text)	Capability is generally a more observable attribute than pressure or rationalisation.
		Does not adequately explain the actions of pathological fraudsters: predators that are better organised, have better concealment schemes and are better at interacting with auditors.	Recognise that predators seek only opportunity and enhance a commitment to professional scepticism, brainstorming and critical thinking.	Understanding predators better prepares anti-fraud professionals for dealing with more deliberate and nefarious fraudsters.
Attributes				
Perceived Pressure	Non-shareable financial need	Perceived pressure is an incomplete descriptor of a fraudster's motivations	Expand the set of fraudsters' motivations using MICE. [Money, Ideology, Coercion and Ego (entitlement)]	MICE provides a broader set of fraud motivations beyond non-shareable financial need.
Perceived Opportunity	Opportunity to commit and conceal the fraud act	Does not address collusive behaviour or management override	Focus on an anti-fraud environment, such as culture, tone at the top and engaged corporate governance, in addition to traditional internal controls.	Understanding collusive behaviours better prepares anti-fraud professionals for the challenges of management override, corruption and abuse.

	Definition	Shortcomings	Extension	Benefit of Extension
Rationalisation	Morally defensible justification for actions seemingly out of character for the fraud perpetrator.	Non-observable	Fraud Scale: Substituting integrity for rationalisation	More visible that rationalisation by observing decisions and decision-making processes to assess a person's integrity.

Source: Dorminey *et al*., 2010.

2.1.5.2 The Fraud Diamond Model

The Fraud Diamond Model (Figure 2.6) was proposed by Wolfe and Hermanson (2004) as an extension of the Fraud Triangle Model (Cressey, 1953). The model adds 'capability' as the fourth fraud-risk factor. Wolfe and Hermanson (2004) believed most frauds would not occur without the right person with the right capabilities implementing the details of the fraud (Wolfe & Hermanson, 2004). They agreed with Cressey (1953) that opportunity opens the doorway to fraud, while incentive and rationalisation can draw fraudsters to commit fraud. However, fraudsters must have capability to recognise the open doorway as an opportunity (Wolfe & Hermanson, 2004).

They further suggested six essential traits for capability which are; (1) authoritative position (power) or function within the organisation; (2) capacity to understand and exploit internal control weaknesses to the greatest advantage; (3) strong ego and great confidence that he/she will not be detected or if caught he/she will get out of it easily; (4) capability to coerce others to commit fraud; (5) lies effectively and consistently; and (6) capability to deal very well with the stress (Wolfe & Hermanson, 2004).
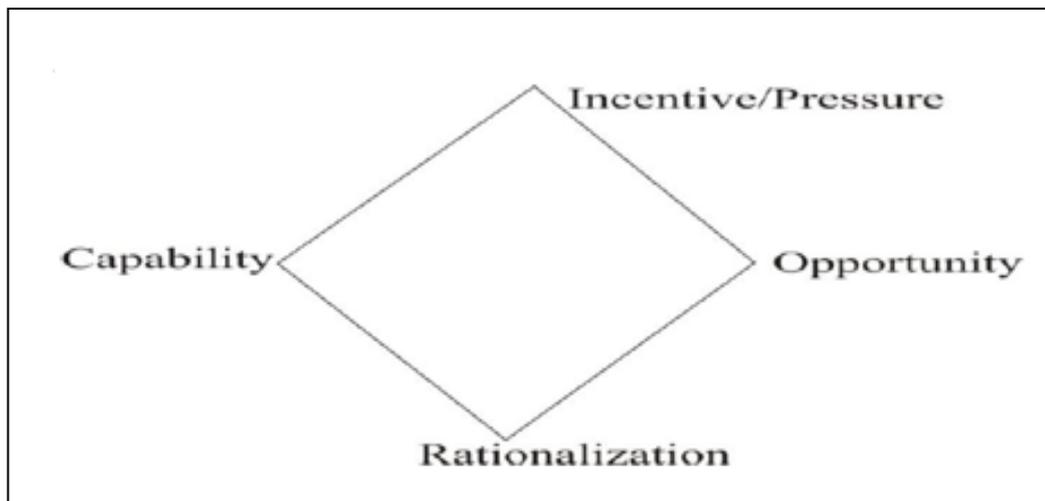
Figure 2.6: The Fraud Diamond Model.
Source: Wolfe & Hermanson, 2004: 38.

2.1.5.3 Crowe's Fraud Pentagon Model

Crowe's Fraud Pentagon Model (Crowe, 2011) is also an expansion of the Fraud Triangle Model (Cressey, 1953). The Model was introduced by Crowe Horwath LLP, one of the largest public accounting, consulting and technology firms in the United States (US). Tailoring with today's environment, the Crowe's Fraud Pentagon Model (Figure 2.7) factors two additional elements of the Fraud Triangle Model (Cressey, 1953), which are (1) arrogance; and (2) competence. Crowe (2011) defined arrogance or lack of conscience as an attitude of superiority and entitlement or greed on the part of a person who believes that internal controls simply do not personally apply.

Figure 2.7: Crowe's Fraud Pentagon Model.
Source: Crowe, 2011 : 29.

According to Crowe (2011), a study by the Committee of Sponsoring Organisations of the Treadway Commission (COSO) has found that 70% of fraudsters have a profile that combines pressure with arrogance or greed and 89% of fraud cases involved CEO. Crowe (2011, 2012a, 2012b) suggests that there are five elements of arrogance from the perspective of CEO. These elements are: (1) big egos – CEOs are seen as 'celebrities' rather than businessmen; (2) they can circumvent internal controls and not get caught; (3) they have bully-attitude; (4) they practise autocratic management style; and (5) fear they will lose their position or status. The elements of arrogance can evolve into extreme arrogance of Hubris factor[8], which conceal negative impact underneath that can destroy a career or company (Crowe, 2011, 2012a, 2012b).

Aside from Crowe's Fraud Pentagon (Crowe, 2011), arrogance is also be included in the 'MICE' model under acronym 'E' for 'ego' (Kranacher *et al.*, 2010) and the 'New' Fraud Diamond Model by Dorminey *et al.* (2012). Retrospectively, Rezaee (2005) referred arrogance as 'egocentric motivations' that cause pressures to fraudulently enhance personal prestige. According to Rezaee (2005), egocentric motivations can be seen in those people with very aggressive behaviour and desire to achieve higher functional authority in the corporation. Likewise, as illustrated in Figure 2.5, Kassem & Higson (2012) also categorised ego, image or reputation as social pressure.

The second additional fraud-risk factors, which is competence refers to feeling effective in one's ongoing interactions with the social environment and experiencing opportunities to exercise and express one's capacities (see White, 1959; Deci, 1975; Harter, 1983). The need for competence can lead fraudsters to seek challenges that are optimal for their capacities and to persistently attempt to maintain and enhance those skills and capacities through activities (Deci & Ryan, 2002).

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[8] Hubris factor phenomenon is illustrated as an ice-berg, which looks small and not intimidating from afar, but can cause massive destruction when collides.

Thus, competence is an extension on the element of opportunity, which includes the ability to override internal controls, develop a sophisticated concealment strategy and socially control the situation to his or her advantage. Competence gives the perpetrator the opportunity to turn desire into reality (Crowe, 2011). There are six common traits of personal competence, which are (1) functional authority within the organisation; (2) sufficient intelligence to understand and exploit a situation; (3) confidence; (4) strong coercive skills; (5) effective deceptiveness; and (6) high tolerance for stress. These traits are also being described as 'capability' in the Fraud Diamond model (Wolfe & Hermanson, 2004).

Therefore, it is reasonable for this research to view 'capability' and 'competence' in a similar concept and perspective. Additionally, Crowe's Fraud Pentagon Model (Crowe, 2011, 2012a, 2012b) considers current changes in businesses environment, as compared to the Fraud Triangle which was established in the 1950's.

2.1.5.4 Other Fraud Models

Besides the Fraud Triangle Model, the Fraud Diamond Model and Crowe's Fraud Pentagon Model, this sub-section also discusses other fraud models. However, some of the fraud-risk factors from these models are already being discussed in the Fraud Diamond Model and Crowe's Fraud Pentagon Model. As a result, this research embraces the fraud-risk factors from the Fraud Triangle Model (Cressey, 1953), the Fraud Diamond Model (Wolfe & Hermanson, 2004) and Crowe's Fraud Pentagon Model (Crowe, 2011) as the main references for constructing pre-developed hypotheses and sub-hypotheses.

2.1.5.4.1   The Fraud Scale Model

The Fraud Scale Model (Figure 2.8) was introduced by Albrecht *et al*. (1984) as an alternative to the Fraud Triangle Model (Cressey, 1953). The Model includes personal integrity to replace rationalisation. Personal integrity is defined as "the personal code of ethical behaviour each person adopts" (Albrecht *et al*., 1984: 18). Personal integrity can be an observable through observing both a person's decisions as well as the decision making process (Kassem & Higson, 2012).
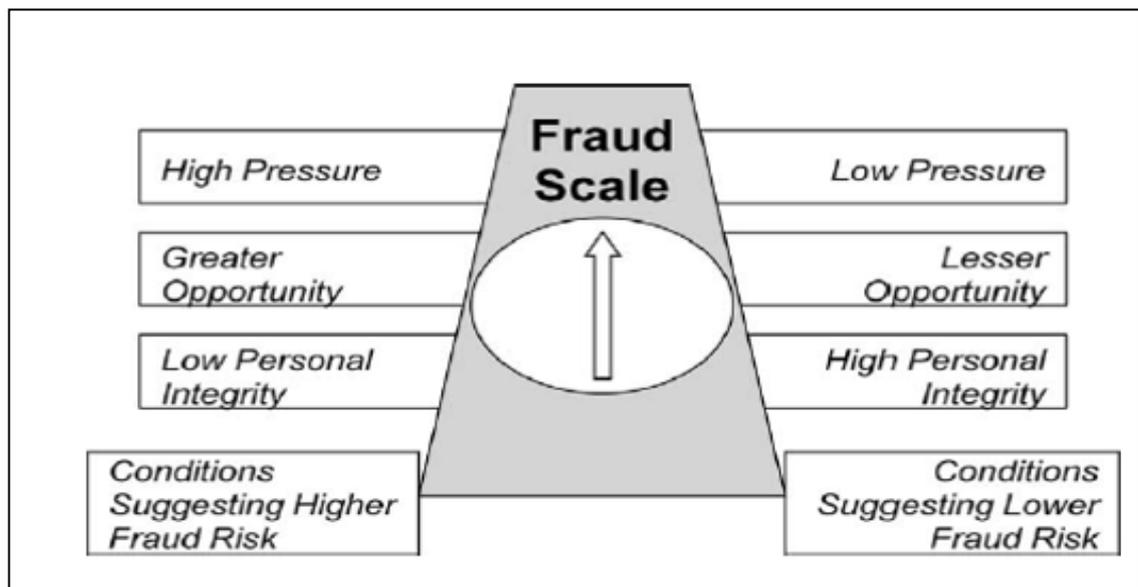
Figure 2.8: Fraud Scale Model
Source: Dorminey *et al*., 2012.

Albrecht *et al*. (1984) classified motivations to commit FFR into nine different types which are similar to Cressey's non-sharable financial problems. These motivations are (1) living beyond their means; (2) an overwhelming desire for personal gain; (3) high personal debt; (4) a close association with customers; (5) feeling pay was not commensurate with responsibility; (6) a wheeler-dealer attitude; (7) strong challenge to beat the system; (8) excessive gambling habits; and (9) undue family or peer's pressure. In addition, they also examined comprehensive data sources to assemble a complete list of pressure, opportunity, and integrity variables, resulting in a collection of 82 possible red flags of occupational fraud and abuse (Kassem & Higson, 2012).

2.1.5.4.2   The CRIME Model

The idea of the CRIME model was discussed by Rezaee (2005). The model demonstrated that financial statement fraud can be equated to the acronym of CRIME. Specifically, 'C' represents 'cooks', which refer to CEO and CFO as the most influential personnel in the top management team. 'R' or 'recipes' of financial statement fraud can typically begin with misstatement of interim financial statements and continue into annual financial statements. 'I' or 'incentive' is regarded as the most common motivations for companies and their 'cooks' to perpetrate financial statement fraud.[9] Meanwhile, 'M' represents 'monitoring', which consists of (1) a direct oversight function of the BODs, the audit committee, external auditors, and regulatory agencies and (2) an indirect overseeing function by those who follow the company in the role of owner/investor as an intermediary.[10] The last letter, 'E' represents 'end results', which indicate that the consequences associated with financial statement fraud can be very severe, from filing for bankruptcy to changing owners, delisting by the national stock exchange to substantial decline in stock value.[11]

2.1.5.4.3 The MICE Model

Another model that utilises an acronym is "MICE", which was suggested by Kranacher *et al.* (2010). This model suggests that motivation of the fraudster, which is one of the sides in the Fraud Triangle Model (i.e. incentive), may be more appropriately expanded and identified with the acronym: M.I.C.E, which stands for: (1) Money; (2) Ideology; (3) Coercion; and (4) Ego.

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[9] Rezaee (2005) suggested that economic incentives are common in financial statement fraud cases, although other types of motives such as psychotic, egocentric, or ideological motives can play a role in financial statement fraud.

[10] These include analysts, institutional investors, and investment bankers.

[11] These severe causes were previously mentioned in Chapter 1.

Ideological motivators justify theft of money or participation in a fraud act to achieve some perceived greater good that is consistent with the fraudsters' beliefs or ideology (Kranacher *et al*., 2010). Coercion occurs when individuals may be unwillingly pulled into a fraud scheme, but those individuals can turn into whistle-blowers (Kranacher *et al*., 2010). Ego can also be a motive for fraud, where sometimes people do not like to lose their reputation or position of power in front of their society or families (Kranacher *et al*., 2010). This social pressure can be a motive to commit fraudulent acts just to keep their ego (Dorminey *et al*., 2010; Kranacher *et al*., 2010). However, Dorminey *et al*. (2010) argued that the model cannot solve the fraud problem alone, because two sides of the Fraud Triangle, pressure and rationalisation, cannot be easily observed, but which are addressed by the Fraud Scale.

2.1.5.4.4 The New Fraud Diamond Model

Dorminey *et al*. (2012) believed that the concept of predator (whether as individual or organisation) also applies to FFR. They suggested that financial statement fraud perpetrators who originally started as accidental fraudsters (from the elements of pressure and rationalisation) can become predators when they discover ways to get seriously involved in FFR (i.e. by managing earnings). In these circumstances, the elements of pressure and rationalisation have minimal impacts on these predators because they only need opportunity to commit fraud (Dorminey *et al*., 2012).

Therefore, these two elements (pressure and rationalisation) are modified into 'criminal mindset' and 'arrogance' (Dorminey *et al*., 2012). When the original Fraud Triangle Model (Cressey, 1953) was combined with these new elements of the Fraud Triangle Model (opportunity, criminal mindset and arrogance), Dorminey *et al*. (2012) suggested a new Fraud Diamond as shown in Figure 2.9.
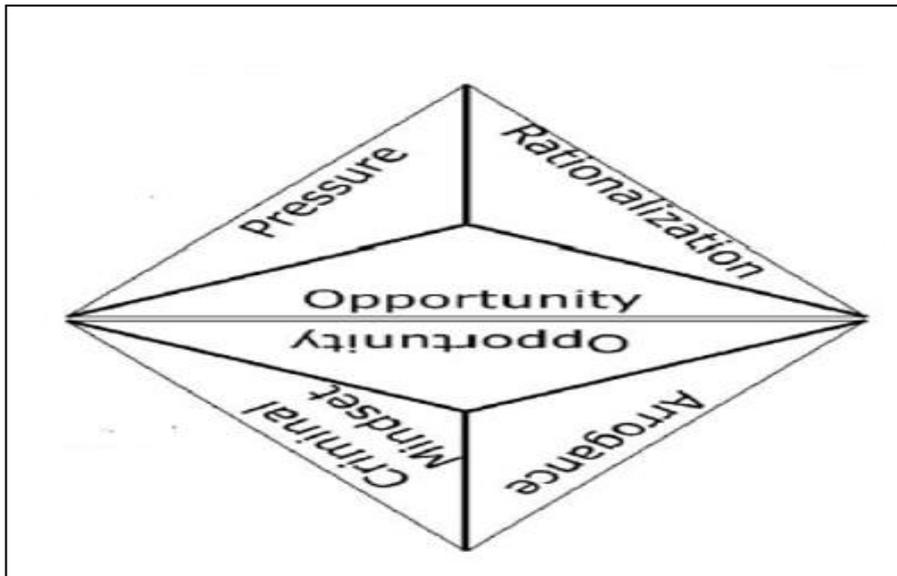
Figure 2.9: The New Fraud Diamond.
Source: Dorminey *et al*., 2012.

The New Fraud Diamond Model merged the 'accidental fraudsters' (elements of pressure and rationalisation) with 'the predators' (elements of criminal mindset and arrogance). Discussions on FFR, EM and the evolutions of the fraud-risk factors from the Fraud Models have completed the theoretical literature review for this chapter.

2.2   Empirical Literature Review

This section begins with an overview of the Malaysian capital market as the background of the research setting. Subsequently, this section discusses relevant empirical research studies that used fraud-risk factors from the Fraud Models as the determinants of FFR in developing countries, including in Malaysia.

2.2.1 Malaysian Capital Market

Despite uncertainty trends in global economic market, the Malaysian capital market is growing consistently and remains resilient. The fact is supported by a press release from the Securities Commission Malaysia (SC) declaring that the Malaysian capital market grew to RM 2.76 trillion (≈ USD 0.75 trillion) in 2014 (SC, 2015). The capital market continued to be an important source of financing for the economy, with RM91.9 billion (≈ USD 24.9 billion) raised through initial public offerings and private debt securities (SC, 2015). This section explains the background of the main regulatory bodies in Malaysian capital market and accounting standards, namely Bursa Malaysia, Securities Commission Malaysia (SC) and Malaysian Accounting Standard Board (MASB). Both Bursa Malaysia and SC are responsible for providing a dynamic platform and cohesive investment environment among Malaysian PLCs, based on related regulations and acts, such as Listing Requirements (Bursa Malaysia, 2014). On the other hand, MASB is responsible to develop and issue accounting and financial reporting standards in Malaysia. Concurrently, Bursa Malaysia and SC provide data and updates on enforcement actions and ongoing cases related to capital and financial offences (including FFR) among Malaysian PLCs.

2.2.1.1 Securities Commission Malaysia

Securities Commission Malaysia (SC) was established on 1 March 1993 under the Securities Commission Act 1993. SC is a self-funding statutory body that has investigative and enforcement powers (SC, 2014). SC reports to Minister of Finance and its accounts are tabled in Parliament annually.

The ultimate responsibility of SC is protecting investors (SC, 2014). Therefore, SC's regulatory functions include: (1) supervising exchanges, clearing houses and central depositories; (2) registering authority for prospectuses of corporations other than unlisted recreational clubs; (3) approving authority for corporate bond issues; (4) regulating all matters relating to securities and derivatives contracts; (5) regulating the take-over and mergers of companies; (6) regulating all matters relating to unit trust schemes; (7) licensing and supervising all licensed persons; (8) encouraging self-regulation; and (9) ensuring proper conduct of market institutions and licensed persons (SC, 2014).

Generally, there are six main acts and regulations that underpin the legislation and capital market requirements, which are (1) Capital Markets and Services Act 2007; (2) Demutualisation (Kuala Lumpur Stock Exchange) Act 2003; (3) Securities Commission Act 1993; (4) Securities Industry (Central Depositories) Act 1991; (5) Securities Industry Act 1983; and (6) Futures Industry Act 1993 (SC, 2014).

2.2.1.2 Malaysian Accounting Standards Board

The Malaysian Accounting Standards Board (MASB) is established under the Financial Reporting Act 1997 as an independent authority to develop and issue accounting and financial reporting standards in Malaysia. The MASB, together with the Financial Reporting Foundation (FRF), make up the frameworks for financial reporting in Malaysia.[12] These frameworks comprise an independent standard-setting structure with representation from all relevant parties in the standard-setting process, including preparers, users, regulators and the accountancy profession.

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[12] In order to enable Malaysian PLCs to be proficient in IFRSs, the FRF and the MASB have entered into an arrangement with the Institute of Chartered Accountants in England and Wales (ICAEW) to provide an online learning and assessment programme to Malaysian registrants through the FRF/MASB website. MASB would issue a Notice of Issuance/Amendments with regards to any changes in Financial Reporting Standards (FRSs) and Malaysian Financial Reporting Standards (MFRSs).

On 1 August 2008, the FRF and MASB announced their plan to bring Malaysia to full convergence with International Financial Reporting Standards (IFRSs) by 1 January 2012 (MASB, 2014). IFRSs are used by more than 100 countries around the world, and other economies such as Korea, India and Canada have also announced IFRSs convergence by 2011 whilst the United States (US) have issued a proposed roadmap for the potential use of IFRS by US issuers. IFRS is issued by the International Accounting Standards Board whose mission is to develop, in the public interest, a single set of high quality, understandable, enforceable and globally accepted financial reporting standards for general purpose financial statements.

2.2.1.3 Financial Reports in Malaysian PLCs' Annual Reports

PLCs are required by specific stock exchange rules and legislation to publish their financial reports publicly through annual reports. Similarly, Malaysian PLCs are also required by Bursa Malaysia to publish their financial reports in annual reports according to financial year end (Bursa Malaysia, 2015f). Similar to requirements by IAS, financial reports in Malaysian PLCs' annual reports include (1) Statement of Financial Position; (2) Statement of Comprehensive Income; (3) Statement of Changes in Equity; (4) Cash Flow Statement; and (5) Accounting Policies and Explanatory Notes. These reports are expected to be free of material errors and misleading information.

In order to provide a fair presentation of financial position, financial reports for Malaysian PLCs should be properly drawn up in accordance with MFRS, IFRS and the Malaysian Companies Act (1965). A declaration for these requirements has to be stated in the 'Directors' Statement' on an early page of financial reports.

2.2.2 Empirical Research Studies on the Fraud-risk Factors as Determinants of FFR in Developing Countries

Most of these empirical research studies concentrated on the fraud-risk factors from the Fraud Triangle Model. One of these studies was conducted by Chen and Elder (2007). They employed seven proxy variables to represent the fraud-risk factors from the Fraud Triangle Model in order to identify the main factors for FFR. The proxy variables are (1) the difference between earnings per share based on analysts' forecast and actual earnings per share, (2) negative operating cash flows, (3) the percentage of directors' and supervisors' shareholdings that was pledged for loans and credits, (4) sales to related party that were scaled by total assets, (5) the same person as the firm's CEO and board chairman, (6) ratio of cash flow rights to control rights, number of quarterly (mandatory and voluntary) earnings restatements, and (7) the number of internal auditor switches.

Using samples from the Taiwan Economic Journal (TEJ) financial restatements database, they restricted the samples that were subjected to financial restatements initiated by the Securities and Future Bureau (SFB) during 1996-2006. Based on the logistic regression model, they had found that proxy variables for pressures, opportunities, and rationalisations were significant.

Another empirical research study was conducted in Taiwan by Lin *et al*. (2011). In order to identify the suitable fraud-risk factors from the Fraud Triangle Model as determinants of financial statement fraud, they selected companies from 2000 to 2009 as the research samples. Using paired t-tests and Wilcoxon matched-pair sign-rank tests, they had found that pressure and opportunity were significantly different between two kinds of companies.

The correlation between the indexes and likelihood of fraud indicates that higher pressure and greater opportunities made the likelihood of fraud greater. They concluded that pressure and opportunity were useful to detect fraud and help the management to find the roots of fraud.

Meanwhile, in assessing the likelihood of FFR based on the fraud-risk factors from the Fraud Triangle Model, Lou and Wang (2009) utilised 123 Taiwanese firms from 1996 to 2006. Empirical results indicated significant proxy variables, which were analysts' forecast error, debt ratio, directors' and supervisors' stock pledged ratio, percentage of sales related party transaction, number of historical restatements, and number of auditor switch. The proxy variables belonged to pressure/incentive, opportunity and attitude/rationalisation. They concluded that the logistic regression model could gauge the likelihood of FFR and benefit practitioners.

Other researchers that used the fraud-risk factors from the Fraud Triangle Model were Ravisankar *et al*. (2011). They used these factors to test the suitability of data mining technique in assessing financial statements to provide better prediction of financial statement fraud. Based on 202 companies that were listed in various Chinese stock exchanges, they analysed the dataset using six data mining techniques. These techniques include Multilayer Feed Forward Neural Network (MLFF), Support Vector Machines (SVM), Genetic Programming (GP), Group Method of Data Handling (GMDH), Logistic Regression (LR) and Probabilistic Neural Network (PNN). They found that data mining techniques were useful tools in predicting financial statement fraud.

In Indonesia, Manurung and Hadian (2013) conducted an empirical research study on the fraud-risk factors from the Fraud Triangle Model. Utilising 35 PLCs in LQ45 Jakarta Stock Exchange from 2012 to 2013, they analysed annual financial statements to test financial ratios that concentrated on growth (asset growth), pressure (financial stability, leverage ratio and return on assets - ROA) and opportunity (the ineffectiveness monitoring through ratio of the commissioners as independent board). The results indicated that asset growth rate, ROA and ratio of the commissioners had positive relationships with fraudulent financial statements. On the other hand, leverage had a negative relationship with financial statement fraud.

Another empirical research study was conducted by Terdpaopong and Trimektakes (2015). They focused on one of the components of FFR, which is the embezzlement case, involving 1.58 billion Baht (USD 52 million) at King Mongkut's Institute of Technology Ladkrabang (KMITL), Thailand. Based on the questions guided by the Fraud Triangle Model, they interviewed the key commanders of Division 1, Crime Suppression Division (CSD), Central Investigation Bureau of the Royal Thai Police. They also interviewed five internal auditors to review the internal controls and auditing system. They furthered their research study by interviewing top-ranked executive management from a private educational institution to compare internal control systems in public institutions. They concluded that there was a need to examine the adequacy of current standards of internal controls, auditing systems and governance. They also urged the establishment of a financial fraud policy to prevent and detect embezzlement and financial fraud.

Based on the above discussions, this research concludes that most empirical research studies in developing countries employed the fraud-risk factors from the Fraud Triangle Model (Cressey, 1953) as the determinants of FFR.

2.2.3 Empirical Research Studies on the Fraud-Risk Factors as Determinants of FFR in Malaysia

In general, most of these research studies relate the fraud-risk factors with auditors' roles. In some research studies, the fraud-risk factors were referred to as 'red flags'. One of the empirical research studies was conducted by Jayalakshmy *et al.* (2005). They discussed the changing role of the Malaysian auditors as a result of increasing corporate and financial fraud globally. They concluded that more stringent conditions on fraud detection should be imposed on auditors (Jayalakshmy *et al.*, 2005). Similarly, Smith *et al.* (2005) conducted research on a selected sample of Malaysian external auditors, which basically explored the perception of auditors on the existence and usage of fraud risk-factors when they audited the financial statements of their clients.

Meanwhile, Omar *et al.* (2005) conducted research to identify the most important red flags as individually perceived by auditors. The research viewed auditors' demographic factors as having impact on perceptions of the relative importance of red flags in Malaysia. The research concluded that "management failure to display appropriate attitude towards internal control is consistently ranked the most important individual red flag" (Omar *et al.*, 2005: 83). Another research study conducted on auditors was undertaken by Jaafar *et al.* (2007). The research developed a conceptual framework linking the external auditors' personality with their ability to detect fraud (Jaafar *et al.*, 2007).

Other research studies used various theories in examining FFR. One of them was conducted by Abdul-Rahman and Mohamed-Ali (2006). Using Agency Theory, the research investigated the effectiveness of monitoring functions of BODs, audit committee and concentrated ownership in reducing EM among 97 Malaysian PLCs. The research revealed that EM was positively related to the size of the BODs.

Additionally, there were some other research studies on EM and the BODs (see Abdullah, 2004; Mohd-Saleh *et al*., 2005, 2007; Hasnan *et al*., 2008; 2012; Mohd-Ali *et al*., 2010).

Another empirical research study used Cognitive Theory and the Theory of Reasoned Action to find explanation for FFR behaviour (Mohd-Zawawi *et al*., 2008). The research study urged for more attention to be given to the individual's belief, as it influences the greatest determination of a person. There have been a limited number of research studies utilising the fraud-risk factors from the Fraud Model in examining or predicting FFR in Malaysia. One of the research studies was conducted by Moyes *et al*. (2009) who examined the effectiveness of red flags in detecting financial statement fraud. The research study adopted the International Auditing Standard (AI240) and SAS 99 which are basically based on the Fraud Triangle Model (Cressey, 1953).

In the following year, Omar and Din (2010) utilised the fraud-risk factors from the Fraud Diamond Model (Wolfe & Hermanson, 2004) to identify the importance and effectiveness of fraud-risk indicators among accounting professionals in various companies. They concluded that the effectiveness of fraud-risk indicators in the detection and investigation of financial fraud was still questionable.

Recently, Aghghaleh *et al*. (2014) examined two fraud-risk factors from the Fraud Triangle Model (i.e. pressure and opportunity) among 40 fraudulent and 100 non-fraudulent PLCs in Malaysia. The research concluded that the likelihood of fraud occurrence was positively related to more sales to account receivable percentage and more leverage (Aghghaleh *et al*., 2014).

2.3 Bursa Malaysia and Sample Selection of the Research

This section intends to accommodate how Bursa Malaysia is related to the main concern of this thesis by providing the sample selection of Malaysian PLCs that were charged for FFR offences within the defined categories of this research. Established in 1973, Bursa Malaysia is one of the largest bourses in Asia, and hosting almost 1,000 diversified companies (Bursa Malaysia, 2014). Bursa Malaysia provides viable services and infrastructures in creating a globally vibrant market place. It operates and regulates a fully integrated exchange offering a comprehensive range of exchange-related facilities including listing, trading, clearing, settlement and depository services (Bursa Malaysia, 2014).

Bursa Malaysia offers a choice of two dynamic markets to companies seeking listing in Malaysia, which are the Main Market and the ACE Market. The Main Market provides an ideal platform for established companies to raise funds, while the ACE Market is an alternative sponsor-driven market designed for companies with growth potential from all business sectors (Bursa Malaysia, 2014).

Prior to mid-2009, the Main Market was known as the Main Board and Second Board, which listed large and medium cap companies (SC, 2009). Consequently, the ACE Market replaces the Malaysian Exchange of Securities Dealing and Automated Quotation (MESDAQ) which is used to list high-tech and growth sector-focus companies (SC, 2009). As at 31 December 2014, on average, there are 855 Malaysian PLCs listed in the Main Market from 2004 to 2013, comprising 799 PLCs listed on the Main Market and 107 PLCs on the ACE market (Bursa Malaysia, 2015f). Table 2.4 shows the listing statistics.

Table 2.4: PLCs' Listing Statistics on Bursa Malaysia's Main Market from 2004 to 2013

Year	Main Market	Total	
2013	802	802	
2012	809	809	
2011	822	822	
2010	844	844	
2009	844	844	
Year	**Main Board**	**Second Board**	**Total**
2008	634	221	855
2007	636	227	863
2006	649	250	899
2005	646	268	914
2004	622	278	900
		Average	**855**

Source: Bursa Malaysia, 2015f.

The average total population of 855 excludes 52 PLCs that relate to finance and Real Estate Investment Trusts (REITs), which adopt different accounting policies and financial reporting requirements. PLCs' shares are listed based on several categories: (1) Construction; (2) Consumer Products; (3) Finance; (4) Hotels; (5) Industrial Products; (6) Infrastructure Project Company (IPC); (7) Mining; (8) Plantations; (9) Properties; (10) Real Estate Investment Trusts (REITs); (11) Technology; and (12) Trading/Services (Bursa Malaysia, 2015f).

The benchmark index for Bursa Malaysia is FTSE Bursa Malaysia Kuala Lumpur Composite Index (KLCI) or commonly known as FBM KLCI. The index comprises of the largest 30 PLCs by full market capitalisation on Bursa Malaysia's Main Board (Bursa Malaysia, 2015f). Observations for this research were extracted from PLCs in the Main Market. Table 2.5 displays statistics of fraudulent Malaysian PLCs related to FFR offences from 2004 to 2013.

Table 2.5: Statistics of Fraudulent Malaysian PLCs that were Charged Based on Three Categories of FFR Offences from 2004 to 2013

Categories and Number of Cases for FFR Offences	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
False statements or information (26 cases)	2	3	4	4	5	3	3	1	1	0
Misleading statements (17 cases)	2	1	4	2	1	2	2	0	2	1
Combination of false statements /information and misleading statements (5 cases)	1	0	1	2	0	0	0	0	0	1
Other categories (2 cases)	0	0	0	0	0	0	0	1	0	1
Total	**5**	**4**	**9**	**8**	**6**	**5**	**5**	**2**	**3**	**3**
Grand Total	**50**									

Source: Bursa Malaysia, 2015e and SC, 2013a, 2013b.

Basically, both Bursa Malaysia and SC did not specify systematically the categories of FFR. The cases of FFR offences were reported based on chronological event (i.e. by year) in a form of 'media release' and 'enforcement actions'. Therefore, this research has made cross-references between these two regulators (i.e. Bursa Malaysia and SC) in order to obtain a reliable data set. For the purpose of explaining the actual nature of statistics distribution, Table 2.5 also displays 'other categories' of FFR offences (i.e. 'short selling' and 'insider trading'). According to Table 2.5, false statements or information was the highest cases recorded for FFR offences (26 cases), followed by misleading statements (17 cases), combination of false statements/information and misleading statements (5 cases), and other categories of FFR (2 cases).

Originally, 50 Malaysian PLCs were identified as reported cases of FFR offences. However, three fraudulent PLCs were belong to finance-based category,[13] which adopt different accounting policies and financial reporting requirements. Two other fraudulent PLCs were charged with different categories of FFR offences,[14] hence they were excluded. Therefore, a total sample of 45 fraudulent PLCs was finalised according to three categories of FFR within the context of this research.

In total, this research examines 1,600 observations (160 PLCs x 10 years), which consist of 45 fraudulent observations (from the fraud years) and 1,555 non-fraudulent observations (from preceding years). This research defines 'fraud years' as the years in which Malaysian PLCs were charged with FFR offences by Bursa Malaysia and SC based on the three categories explained in Section 2.1.3. 'Preceding years' are defined as the years before Malaysian PLCs were charged for FFR offences by Bursa Malaysia and SC.

According to Hsieh (1989), although the sample sizes can be inaccurate for double exponential distributions, they are reasonably adequate for normal distributions and exponential distributions. Additionally, this research also uses a matched-pairs design based on similar stock exchange, industry, PLCs' sizes and time period (Beasley, 1996; Fanning & Cogger, 1998). As a result, fraudulent and non-fraudulent PLCs are matched based on the following requirements:

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[13] Two PLCs in 2012 and one PLC in 2013 were belong to finance-based category.
[14] One PLC in 2011 and 2013 respectively was charged with different categories of FFR offences.

1. Stock Exchange – Both fraudulent and non-fraudulent PLCs are listed in the Main Market of Bursa Malaysia.

2. Industry – Non-fraudulent PLCs are matched with the same industry of fraudulent PLCs. In addition, Malaysian PLCs in the same industry are also subject to a similar business environment, as well as accounting and reporting requirements (see St. Pierre & Anderson, 1984; Dopuch *et al.* 1987; Stice 1991; Beasley, 1996; Fanning & Cogger, 1998).

3. PLCs' Sizes - Non-fraudulent PLCs are selected according to similar size of fraudulent PLCs. Malaysian PLCs size are considered similar if total assets are approximately within 30% of the total assets for the fraudulent PLCs (Guan *et al*., 2001).

4. Time period - Non-fraudulent PLCs are identified based on the same time period used to observe fraudulent PLCs, which is from 2004 to 2013.

A matched-pairs design can reduce the risk of choice-based sample biases from oversampling (Zmijewski, 1984). Based on this sample size, the research results can be reasonably generalised. The main reason is to get a larger, but measurable sample size of the total population of Malaysian PLCs.

2.4   Conclusions

This research is motivated by a drawback in accounting research, which involves the imbalance of research studies concerning the Fraud Models (i.e. the Fraud Triangle Model, the Fraud Diamond Model and Crowe's Fraud Pentagon Model) to determine suitable fraud-risk factors in predicting the likelihood of FFR among Malaysian PLCs.

Despite numerous research studies on the Fraud Triangle Model, there is no evidence (until this present time) showing any empirical research study using this model with the other two Fraud Models (i.e. the Fraud Diamond Model and Crowe's Fraud Pentagon Model) concurrently. Therefore, the main premise of this chapter is to review and synthesise relevant literature pertaining to FFR and the fraud-risk factors from the Fraud Models theoretically and practically.

Generally, this chapter has provided relevant literature reviews pertaining to FFR and the Fraud Models (i.e. the Fraud Triangle Model, Fraud Diamond Model and Crowe's Fraud Pentagon Model) to support three RQs and five SRQs as discussed in Section 1.3 of Chapter 1. The theoretical literature review has suggested that the numbers of the fraud-risk factors were eventually increased from three in the Fraud Triangle Model (i.e. incentive/pressure, opportunity, attitude/rationalisation) to four in the Fraud Diamond Model (addition of 'capability/competence'), before being expanded to five in Crowe's Fraud Pentagon Model (addition of 'arrogance'). However, in order to accurately determine individual effects on each fraud-risk factor in the Malaysian context, this research addresses incentive, pressure, attitude and rationalisation separately. As a result, this research utilises seven fraud-risk factors (i.e. incentive, pressure, opportunity, attitude, rationalisation, capability/competence and arrogance) for hypotheses testing. Additionally, this research also aims at exploring factors such as financial and corporate governance characteristics of those PLCs charged with FFR.

In specific, this research differs from several research studies conducted in Malaysia, especially Omar *et al*. (2005), Jaafar *et al*. (2007), Omar and Din (2010), KPMG (2014). For instance, Omar *et al*. (2010) used Beneish Model and ratio analysis as the fraud detection techniques. They conducted a case study on Megan Media Holdings Berhad (MMHB).

The former financial controller of the company, has abetted MMHB with intent to deceive furnished false statements to Bursa Malaysia. Based on the formula from the Beneish Model, they managed to clarify that MMHB had manipulated its earnings. Meanwhile, the ratio analysis was used to observe four main areas of the financial indicators, namely profitability, operating efficiency, liquidity and coverage and funding structure for three consecutive years (for the year-end 2005, 2006 and 2007). The operating efficiency ratio analysis show that the company recorded fictitious revenue. The analysis also suggested that a tight cash flow and the currand the current asset might not be insufficient to cover the company's obligation or debt. In contrast to Omar *et al*. (2005), this research does not conduct a case study on a specific PLC. As explained in the earlier paragraphs of this section, this research observes 45 fraudulent PLCs based on the three categories of FFR. Additionally, the time horizon of this research is 10 years (from 2004 to 2013) as compared to three years used by Omar *et al*. (2005).

Likewise, this research differs from Jaafar *et al*. (2007) in term of the research perspective. Jaafar *et al*. (2007) conducted an empirical research from the perspective of external auditors. They studied external auditors' personality and ability in assessing the risk of fraud and error during the audit of financial statements. In other words, they wanted to observe whether the ability of the external auditor is influenced by his/her fraud risk assessment. However, this research views the likelihood of FFR from internal perspectives, which involve Executive and Non-Executive Directors among Malaysian PLCs. As such, the outcome of this research would differ from Jaafar *et al*. (2007).

Meanwhile, although Omar and Din (2010) employed the fraud-risk factors from the Fraud Diamond (Wolfe & Hermanson, 2004), their research was also concentrated on auditors (i.e. external auditors, internal auditors and government auditors). They used questionnaire surveys for data collection. Specifically, the 'red flag' questionnaires with a five-point Likert scale were used to indicate auditors' perceptions. In contrast, this research obtains financial and non-financial data from Malaysian PLCs' annual reports. Nontheless, this research also interviews internal and external auditors to gain their in-depth perspective on the suitable fraud-risk factors in the Malaysian context.

Similar to Omar and Din (2010), KPMG (2014) also employed a questionnaire method in conducting a survey among the Chief Executives of Malaysian PLCs. The questionnaire is descriptive in nature, since the report was based on the frequency of respondents (in percentage). In this research, descriptive statistics are used to explain statistical characterictics of each explanatory variables (Chapter 6). However, descriptive statistics do not imply the ultimate results of this research as the statistics do not indicate a causal-effect relationship. As a result, this research utilises binomial logistic regression analysis of panel data models.

Having discussed literature gaps related to the fraud-risk factors and the Fraud Models, there is no doubt that this research differs from previous research studies conducted in Malaysia. Additionally, this research also refers to other theories in addressing specific proxy variables of the fraud-risk factors. For example, the implication of Power Distance Index (PDI) derived from Hofstede Cultural Dimension Theory (Hofstede, 1980) was used in Chapter 1 (Section 1.1) to address a clear separation control and power in Malaysia This theory has been readdressed in Chapter 5 (Section 5.3.1) for the discussion of Sub-Hypothesis 5a (Chief Executive Officers' Duality).

Likewise, the Agency Theory (Fama & Jensen, 1983) is used in the discussion of Sub-Hypothesis 2a (Composition of Board of Directors) in Section 5.1.2.1 and Sub-Hypothesis 2b (Turnover of Head of Internal Auditor) in Section 5.1.2.2. Similarly, the Stakeholder Theory (Freeman, 1984) is discussed in Sub-Hypothesis 5a (Chief Executive Officers' Duality) of Section 5.3.1. These theories were linked to FFR practices in Malaysia. In short, these theories were addressed in appropriate sections and chapters, in which relevant fraud-risk factors and proxy variables were discussed.

CHAPTER 3: RESEARCH METHODOLOGY

Chapter 2 has discussed relevant literature pertaining to FFR and the evolution of the fraud-risk factors from the Fraud Models (i.e. the Fraud Triangle Model, Fraud Diamond Model and Crowe's Fraud Pentagon Model). Based on identified literature gaps from empirical research studies, five pre-developed hypotheses and ten pre-developed sub-hypotheses were initially proposed. However, all proxy variables from these pre-developed hypotheses and sub-hypotheses were explored in interview results to confirm their suitability in the Malaysian context. Conducting interviews is part of the research methods employed for this research. According to Howell (2013), methodology explains the research strategy by which a research is to be undertaken and identifies the methods to be used in collecting data for analysis. Hence, this chapter provides an explanation of how data was collected and analysed in order to derive results and conclusions based on the research questions (RQs) and sub-research questions (SRQs) introduced in Chapter 1.

However, before discussing data collection methods, this chapter begins with a discussion on philosophical paradigms (Section 3.1). Section 3.2 concentrates on the relevant philosophical paradigm and methodological choices for this research. In this section, relevant research methods, strategies and approaches are discussed extensively. Section 3.2 also explains the process of identifying 160 Malaysian PLCs as the research samples. This section entails qualitative and quantitative data with regards to data collections. Section 3.3 explains ethical considerations in the data collection process, particularly during the interviews. Section 3.4 concludes the chapter. Figure 3.1 illustrates the structure of this chapter.

The next section discusses philosophical paradigms and methodological choices in research. Since research disciplines in social sciences are extensive, the discussion on philosophical paradigms and methodological choices is within the context of accounting research.

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│              │  Chapter 3: Research Methodology │             │
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│              ┌──────────────────────────────┐                │
│              │  3.1  Philosophical Paradigms and │           │
│              │  Methodological Choices in Accounting │       │
│              └──────────────────────────────┘                │
│                                                               │
│              ┌──────────────────────────────┐                │
│              │  3.2    Philosophical Paradigms  and │        │
│              │  Methodological  Choices  for  the │         │
│              │  Research │                                    │
│              └──────────────────────────────┘                │
│                                                               │
│              ┌──────────────────────────────┐                │
│              │  3.3  Ethical Considerations │                 │
│              └──────────────────────────────┘                │
│                                                               │
│              ┌──────────────────────────────┐                │
│              │  3.4  Conclusions │                            │
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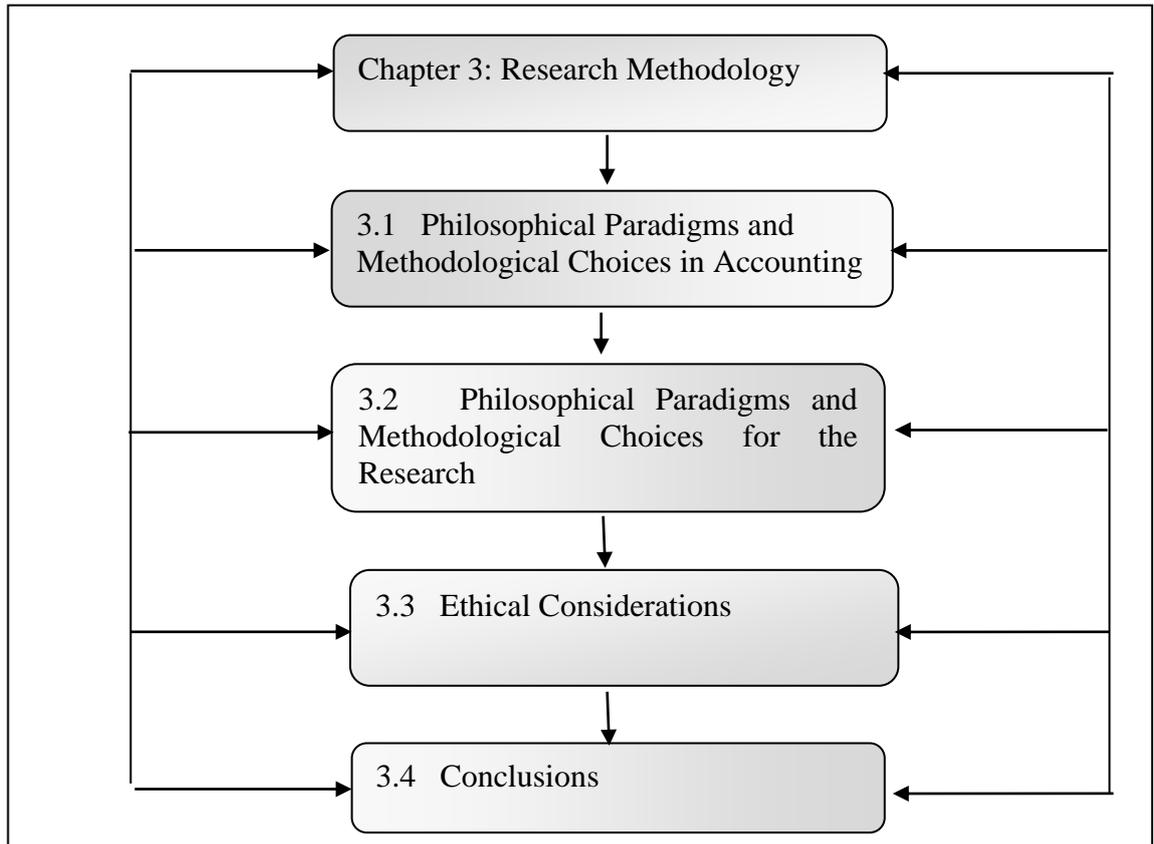
Figure 3.1: Structure of Chapter 3.

3.1   Philosophical Paradigms and Methodological Choices in Accounting Research

There is an underlying principle that each research should have its own paradigm. Paradigm, which is originated from Greek's word '*paradeigma*', is defined as "a typical example, pattern, or model of something" (Compact Oxford English Dictionary, 2008: 736). From a philosophical perspective, paradigm describes the theoretical or philosophical stance of a particular research.

Teddlie and Tashakkori (2009: 84) define a paradigm as "a worldview, together with the various philosophical assumptions associated with that point of view." Likewise, Creswell (2007: 21) refers to a paradigm as a worldview. In the last two decades, the perennial discussion on the adequacy of particular research approaches in accounting and management has been growing consistently.

There are different assumptions in alternative research approaches, which can be exposed from the work of Burrell and Morgan (1979), Chua (1986) and Laughlin (1995). The most common arguments are on the appropriateness of choosing research methods, which depends on methodological and other epistemological assumptions. According to Burrell and Morgan (1979), there are two assumptions that characterise different approaches to social theory, which are assumptions about the nature of (1) social sciences and (2) society. Social sciences refer to the four sets of assumptions (objective-subjective dimension), which are (1) ontology (the nature of being or reality), (2) epistemology (theory of knowledge), (3) human nature (effect of the environment on human beings), and (4) methodology (the role of researcher and the discovery process). The assumptions about society range from regulation to radical change. However, these four sets of assumptions were combined by Hopper and Powell (1985) with a single subjective-objective continuum, which they used to characterise the range of approaches to the social sciences (Ryan *et al*., 2003).

Following the earlier work of Burrell and Morgan (1979), Hopper and Powell (1985), explicitly recognised that the four dimensions are analytically distinct, but argued that combining them into a single dimension simplifies the discussion. By combining the two continua; 'regulation' and 'radical change', Hopper and Powell (1985) have suggested the taxonomy of accounting research as described in Figure 3.2.
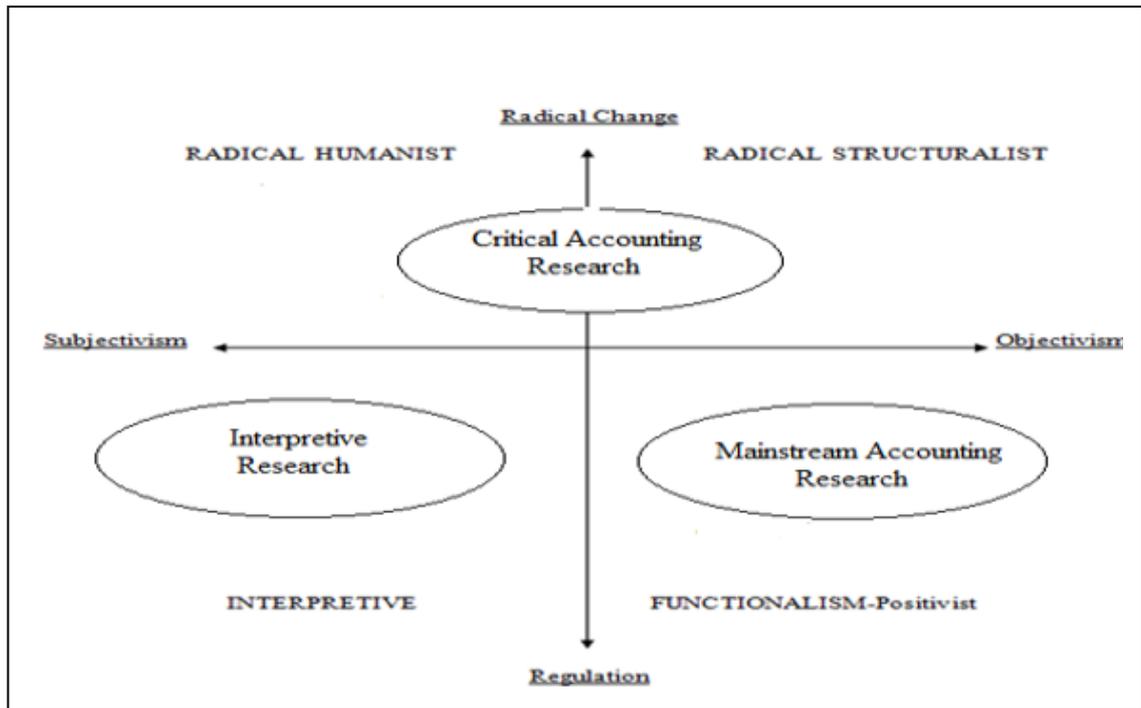
Figure 3.2: Hopper and Powell's Taxonomy of Accounting Research
Source: Adapted from Hopper & Powell, 1985.

The four sections of the taxonomy – functionalism, interpretivism, radical humanism and radical structuralism – are used by Burrell and Morgan (1979) to categorise organisational research. Functionalism has been the primary paradigm for organisational study. It assumes that people act rationally and that one can understand organisational behaviour through hypothesis testing (Burrell & Morgan, 1979). This assumption is well-defined in the positivism paradigm, which is explained in Section 3.1.1 of this chapter. Interpretivists seek to explain the stability of behaviour from the individual's viewpoint (Burrell & Morgan, 1979).

Details on interpretivism are explained in Section 3.1.2. Radical humanists are concerned with realising social constraints that limit people's potential, whereby current dominant ideologies separate people from their 'true selves' (Burrell & Morgan, 1979). Thus, the radical humanist paradigm is used to justify desire for revolutionary change, which is largely anti-organisation in scope (Burrell & Morgan, 1979).

Similar to the fundamental paradigm of Karl Marx, Friedrich Engles and Vladimir Lenin, radical structuralists see inherent structural conflicts within society that generate constant change through political and economic crises (Burrell & Morgan, 1979). Based on the framework of Burrell and Morgan (1979), Chua (1986) identified three assumptions of accounting research: (1) the belief that knowledge is divided into epistemological and methodological assumptions; (2) the object of study which includes ontology, human purpose and societal relations; and (3) the relationship between theory and practice.

However, most criticisms are on the nature of the objective-subjective dimension, which led to another accounting research framework by Laughlin (1995). The framework suggests that the assumptions made by Burrell and Morgan (1979) could be expressed in terms of choices. Therefore, the accounting research framework of Laughlin (1995) comprises three dimensions, namely, theory, methodology and change.

3.1.1 Interpretivism Paradigm

There are arguments that the use of scientific method alone will limit knowledge about accounting in real practice and how it interacts with other organisational effectiveness and adaptability (see Tomkins & Grove, 1983; Hopper & Powell, 1985). Tomkins & Grove (1983) suggested that the use of scientific methodology is appropriate only where the meanings of variables are found and well-defined. Thus, researchers need to interpret elements of the research based on a philosophical position of idealism that uses diverse approaches, including social constructionism, phenomenology and hermeneutics, which reject the objectivist view (Collins, 2010).

Interpretivism is associated with the belief that social practices are socially constructed and not natural phenomena (Ryan *et al*., 2003). Therefore, "interpretive researchers assume that access to reality (given or socially constructed) is only through social constructions such as language, consciousness, shared meanings, and instruments" (Myers, 2008: 38).

The interpretivism paradigm has not only emphasised the subjective nature of the social world, but also attempted to understand it from the frame of reference of those being studied (Hopper & Powell, 1985). The process of understanding subjective nature is called 'Verstehen', a German word which literally means 'to understand' (Waber, 1949). Hopper and Powell (1985) further claimed that the focus of understanding is also given to the perception of individuals and people rather than any independent reality that might exist external to them. Thus, it is argued that understanding of other people's conduct is obtained through an interpretation process or 'typification', rather than by direct observation (Schutz, 1967). Such 'typification' is continuously learnt, modified or reaffirmed throughout people's lives, because the everyday life actions do not take place in a vacuum, but in a web of private subjective meanings (Schutz, 1967).

The idea of adopting interpretive methods in accounting research was eventually sparked by a report entitled '*Empirical Research in Accounting: A Methodological Viewpoint*' written by Abdel-khalik and Ajinkya (1979). This report explored alternative methodological approaches, including interpretivism, but concluded that the scientific method should be the ideal method for accounting research (Ryan *et al*., 2003).

Since then, a growing appreciation of interpretivism, which adopts qualitative research method in accounting was reflected in many research studies (see Tomkins & Grove, 1983; Kaplan 1983, 1984, 1986; Chua, 1986, 1988; Dirsmith *et al.*, 1985; Covaleski & Dirsmith, 1990; Arrignton & Francis, 1989; Macintosh & Scapens, 1990; Boland, 1993).

Despite a consistent growth in interpretivist approaches, accounting research has been continuously dominated by positivist-based research (Bisman, 2010). Surveys of leading accounting journals have revealed that the majority of journals have a foundation derived from economic and positive accounting theory (see Bonner *et al.* 2006; Gaffikin 2007; Parker 2007). Such positivist research assumes that the scientific approach is appropriate to the discovery, explanation and prediction of accounting phenomena (Bisman, 2010). According to Bisman (2010: 6), "it is founded upon the ontological view that the 'reality' of accounting can be discovered by the use of the senses or through sensory experience (empiricism), that accounting is objective, and that accounting hypotheses can be statistically tested to produce generalisable results".

In contrast, interpretivism is much associated with subjective nature, which poses a great risk of bias on the part of the researcher. Therefore, the reliability and representativeness of data based on interpretivist approach are undermined to a certain extent as well. This research does not adopt interpretivism paradigm because the main finding is based on quantitative analysis, which is more suitable to positivism paradigm.

3.1.2   Critical Paradigm

Critical paradigm is originated from the Frankfurt scholars as a neo-Marxist approach in overcoming the limitations of positivism and interpretivism. According to Burrell & Morgan (1979), epistemology of critical paradigm rejects the self-evident nature of reality and acknowledges the various ways in which reality are distorted. Thus, critical paradigm is different from the functionalist/objective and interpretive/practical sciences (Ahmad Khair, 2012).

According to Laughlin (1987: 483-484), critical perspective is relevant for accounting research because it (1) "proposes dynamically linking theory to practice"; (2) "see critique, change and development as vitally necessary components of the practically based research endeavour"; and (3) "views social organisations in an historical and societal context". Similarly, Fossey *et al*. (2002) claim that critical paradigm emphasises the social, historical, political, cultural and context of meaning, whether they are in the form of individual or collective embodiment and expression. Therefore, this paradigm assumes that every state of existence possesses historically constituted potentialities that are unfulfilled (Ahmad Khair, 2012). In this manner, the assumption of critical researchers about individuals is that they are acting within a matrix of inter-subjective meanings (Chua, 1986). As such, critical paradigm is against the principles of 'status quo' and transformation of the current structures, relationships and conditions that either shape or constrain the development of social practices in society (Ahmad Khair, 2012).

The notions of critical perspective has offered considerable varieties in the new approaches in accounting research (see Hopwood, 1978; Burchell *et al*., 1980, 1985; Tinker, 1980; Tinker *et al*., 1982; Cooper & Sherer, 1984; Neimark & Tinker, 1986).

According to Laughlin (1987: 480), several approaches of critical paradigm have emerged "as possible analytical tools in the endeavour to expose the social roots behind accounting systems design." These approaches are (1) symbolic interactionism (see Colville, 1981, 1982; Tomkins, 1982; Tomkins & Colville, 1984); (2) Gidden's structuration theory (Roberts & Scapens, 1985) (3) traditional Marxian analysis (see Tinker, 1980; Tinker *et al*., 1982); and (4) the thinking of Foucault (see Burchell, *et al*., 1985; Miller & O'Leary, 1987).

According to Bohman (2015), a closer examination of paradigmatic works of critical paradigm reveals neither some distinctive form of explanation nor a special methodology that provides the necessary and sufficient conditions for such inquiry. Rather, the best such works employ a variety of methods of explanation and are often interdisciplinary in their mode of research. Similar with interpritivism, this research does not adopt critical paradigm because the main finding is based on quantitative analysis, which is more suitable to positivism paradigm.

3.1.3   Positivism Paradigm

Positivists view reality as a concrete structure and people as responders, adapters and information processors to achieve efficiency and the objective of an organisation (Morgan & Smircich, 1980). They believe that reality exists independently, while people or human beings act as passive objects, who are not perceived as makers of social reality (Chua, 1986). Thus, positivism describes the social world and its structure as having empirical, concrete existence external to, independent of, and prior to the cognition of any individual (Hopper & Powell, 1985).

This approach has been clearly accepted as the 'natural science model' of social-science research and has been established to be applied extensively, commonly in social science research and particularly in organisational research (Schutz, 1973; Burrell & Morgan, 1979; Lee, 1989, 1991). Positivists stress that reliability, validity and generalisability form the cornerstone for judging the adequacy and quality of research (Sarantakos, 1993; Abernethy *et al*., 1999; Bordens & Abbott, 1999). Research results from a reasonable sample size of a particular research are generalised to the whole population of the same subject. Generalisation concept is based on the assumption of objective reality or truth, which is viewed to exist independently of those undertaking inquiry contexts.

Most research studies in business and accounting related to fraud (including FFR) were based on a positivist approach (see Elliot & Wellingham, 1980; Romney *et al*., 1980; Pincus, 1989; Finkelstein, 1992; Hambrick & D'Aveni, 1992; Collier, 1993; Haleblian & Finkelstein, 1993; Albrecht *et al*., 1995; Daboub *et al*., 1995; Beasley, 1996; Dechow *et al*., 1996; Flesher, 1996; Summers & Sweeney, 1998; Hillison *et al*., 1999; Beasley *et al*., 2000; Ansah *et al*., 2002; Rezaee, 2002). This literature and research suggest that conventional accounting is located in the most objective and regulatory region of the positivism paradigm (Hopper & Powell, 1985). Mostly, the positivist approach deals with mathematical and statistical tools that synthesise empirical data into numerical results that would further lead to conclusions. That is the main reason why the positivist approach is often associated with quantitative methods. Definite results are based on empirical data and being supported by strong theory and literature reviews.

Typically, research methods in the positivist approach are based on hypothetico-deductivism and technical control (see Chua, 1986; Baker & Bettner, 1997). In addition, Baker and Bettner (1997) claimed that a research paper reflects a 'mainstream or empirical perspective' if the level of theory in its choice of methods is high (i.e. the research paper uses an established statistical method to test and hypothesised relationship between variables measured in quantitative terms). The positivist approach is well-known as 'the mainstream research' among accounting researchers. Slife and William (1995) characterise positivist researchers based on four main features which are: (1) determination or cause and effect thinking; (2) reductionism (or deductive approach) by narrowing and focusing on selected variables to interrelate; (3) detailed observations and measures of variables; and (4) the testing of theories that are continually refined.

Nevertheless, there are numerous critics of this approach (see Bunge, 1996; Bayou & Reinstein, 2001). Both of these researchers argue that positivist approach should adopt a more pragmatic alternative framework that considers the individual's integration in the society. In addition, Habermas (1978) and Chua (1986) argued that social artefacts cannot be treated as natural scientific objects because humans are self-interpretive beings who create the structure around them. Human beings and society are unique and cannot be measured scientifically and empirically. Therefore, "by changing this set of assumptions, fundamentally different and potentially rich research insights are obtained. Two alternative worldviews and their underlying assumptions may be elucidated - the interpretive and the critical" (Chua, 1986: 601), which were discussed in Section 3.1.1 and 3.1.2 of this chapter.

3.2   Philosophical Paradigms and Methodological Choices for the Research

Explanation in this section is based on 'the research process onion' suggested by Saunders *et al*. (2009) as shown in Figure 3.3.[15]
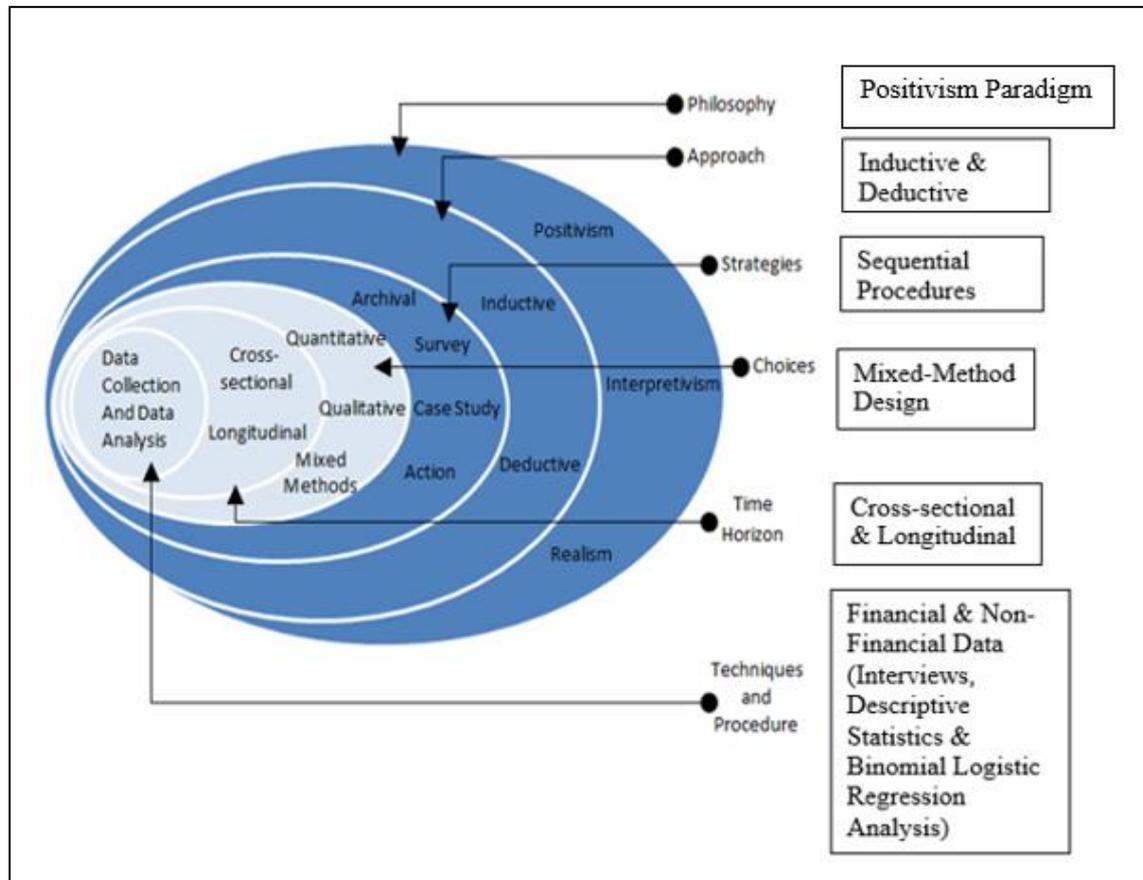
Figure 3.3: The Research Process 'Onion'
Source: Adapted from Saunders *et al*.,2009.

Saunders *et al*. (2009) describe research methodology in the form of an onion. Solutions for research problems are located in the onion's core; and thus several layers have to be 'peeled away' before coming to this central position. These layers represent important aspects in determining an appropriate research methodology for a particular research study. These layers contain six aspects, which are (1) research philosophy; (2) approaches; (3) strategies; (4) choices; (5) time horizon; and (6) techniques and procedures.

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[15] Relevant philosophical paradigm and methodological choices for this research are stated in the boxes on the right side.

3.2.1 Research Philosophy

First and foremost, it is important to define the correct philosophy that fits methodological choices for this research. According to Hopper *et al*. (1995), researchers must make choices about what to be researched, what data are to be collected and how they are to be analysed. Based on previous discussions in Section 3.1, it can be inferred that positivism is the appropriate philosophical paradigm for this research. This is because the ultimate results of this research are derived from quantitative methods (i.e. descriptive statistics and binomial logistic regression analysis). Specifically, binomial logistic regression analysis suggests empirical based on causal-effect relationships between the fraud-risk factors[16] and the likelihood of FFR. These results will be generalised in the Malaysian context. In other words, this research is relying on deductive approach of scientific explanation and believes in generalisation principle. These criteria seems to fit dominant assumptions of mainstream accounting (also known as positivism paradigm) mentioned by Chua (1986) as shown in Figure 3.4.

A. Beliefs About Knowledge

Theory is separate from observations that may be used to verify or falsify a theory. Hypothetico-deductive account of scientific explanation accepted.

Quantitative methods of data analysis and collection which allow generalization favored.

B. Beliefs About Physical and Social Reality

Empirical reality is objective and external to the subject. Human beings are also characterized as passive objects; not seen as makers of social reality.

Single goal of utility-maximization assumed for individuals and firms. Means-end rationality assumed.

Societies and organizations are essentially stable; "dysfunctional" conflict may be managed through the design of appropriate accounting control.

C. Relationship Between Theory and Practice

Accounting specifies means, not ends. Acceptance of extant institutional structures.

Figure 3.4: Dominant Assumptions of Mainstream Accounting.
Source: Chua, 1986.

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[16] Suitable fraud-risk factors were explored using the interviews as the supplementary method for the research.

3.2.2 Research Approaches

As illustrated in Figure 3.5, this research adopts both deductive and inductive approaches.
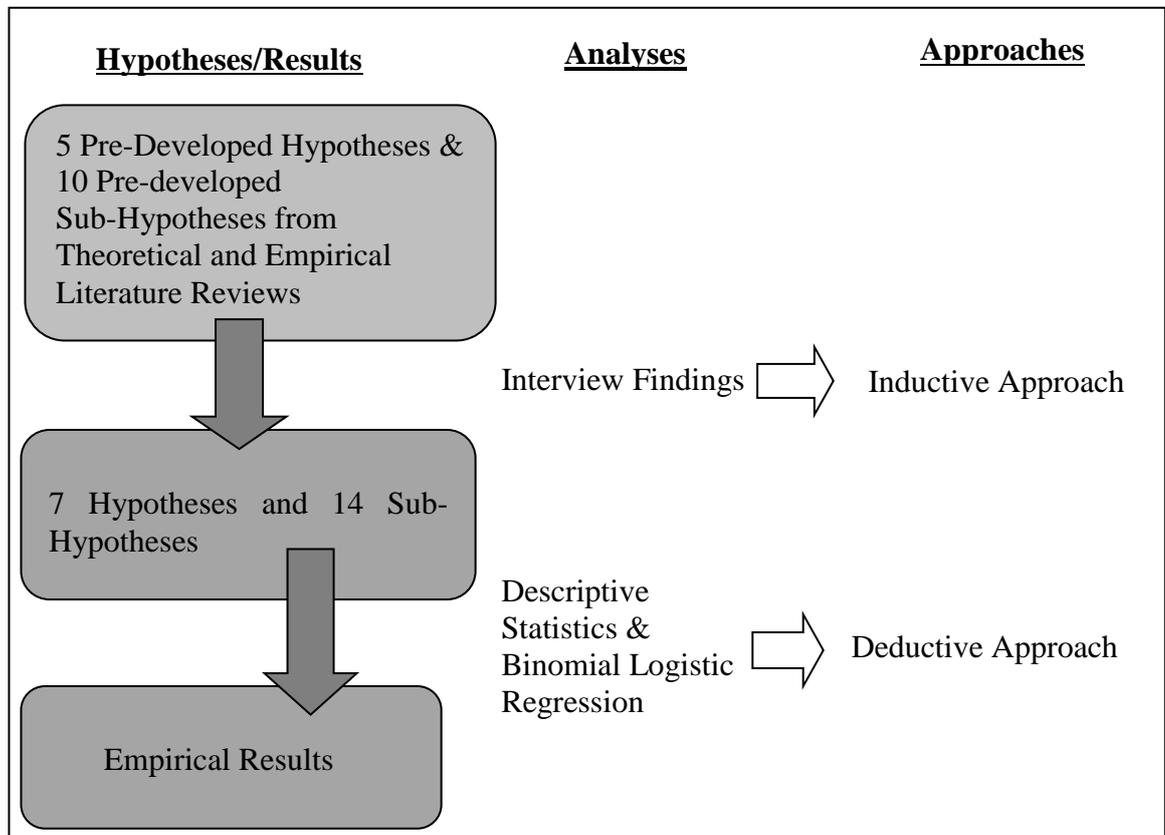
Figure 3.5: Deductive and Inductive Approaches for this Research.

Based on theoretical and empirical literature reviews, this research has initially suggested five pre-developed hypotheses and ten pre-developed sub-hypotheses. Proxy variables from the pre-developed hypotheses and sub-hypotheses were explored in interview results based on an inductive approach. The inductive approach allows this research to explore the suitability of these proxy variables in the Malaysian context. Based on ontological perceptions of social reality, interview results have not only explored these proxy variables, but also suggested additional proxy variables from interviewees' perspectives. As a result, seven hypotheses and fourteen sub-hypotheses were finally developed, with sixteen measurable proxy variables for descriptive statistics and binomial logistic regression analysis based on a deductive approach.

All proxy variables were statistically analysed to generate empirical results on causal-effect relationships between FFR (as the dependent variable) and the fraud-risk factors (as explanatory variables). In short, this research utilises a triangulation method to bridge the gap in accounting research paradigms as discussed by Merchant (2010), Modell (2010) and Vaivio and Sirén (2010).

3.2.3   Research Strategies

The previous section has explained the application of both deductive and inductive approaches in collecting and analysing data for this research. In relation to mixed-method strategies, these approaches involve a strategy called 'sequential procedures'. Sequential procedures apply multiple methods, which allow the researcher to elaborate or expand the results of one method with another method (Creswell, 2003; Creswell & Plano-Clark, 2011). Sequential procedures may begin with a qualitative method for exploratory purposes, followed by a quantitative method with a large and measurable sample size, so that the results can be generalised to a population (Creswell, 2003; Creswell & Plano-Clark, 2011). Alternatively, sequential procedures may involve beginning with a quantitative method in which theories or concepts are tested, to be followed by a qualitative method involving detailed exploration with a few cases or individuals (Creswell, 2003; Creswell & Plano-Clark, 2011).

Based on these suggestions, this research has identified two strategies that could be undertaken for data collection and analysis. The first strategy (Strategy 1) is to test five hypotheses and ten sub-hypotheses in descriptive statistics and binomial logistic regression analysis (quantitative method). The results from binomial logistic regression analysis would then be explored from the interviews (qualitative method) in order to support and justify the empirical results.

On the other hand, this research could adopt the second strategy (Strategy 2), which begins with five pre-developed hypotheses and ten pre-developed sub-hypotheses. Instead of treating these hypotheses and sub-hypotheses as definite hypotheses, this research addresses them as 'pre-developed' hypotheses and sub-hypotheses. By doing so, this research is not totally relying on theoretical and empirical literature reviews in defining hypotheses and sub-hypotheses. This is because most of the theoretical and empirical literature pertaining to FFR and the Fraud Models is derived from the western countries. Since this research has chosen Malaysia as the research setting, exploratory work is required before a quantitative study can be carried out as recommended by King (1998). Likewise, Gill *et al*. (2008) believed that interviews would provide a 'deeper' understanding of social phenomena than would be obtained from purely quantitative methods. In this relation, a 'deeper' understanding of the suitable fraud-risk factors in the Malaysian context is required before conducting the quantitative analysis.

Based on these options, this research chooses Strategy 2, since the strategy allows this research to demonstrate a systematic procedure in collecting and analysing data. Conducting interviews before implementing quantitative analysis will result in resourceful developments of appropriate hypotheses and sub-hypotheses with suitable proxy variables in the Malaysian context. These hypotheses and sub-hypotheses can be quantitatively analysed using binomial logistic regression analysis in order to produce reliable empirical results, which represent actual reality in Malaysia.

According to Yin (2003) and Saunders *et al*. (2009), since there are large overlaps among various research strategies, it is very important to select the most advantageous strategy for a particular research study. Thus, this research believes that Strategy 2 will provide better direction in determining suitable fraud-risk factors that can predict the likelihood of FFR in the Malaysian context. Figure 3.6 illustrates these options.
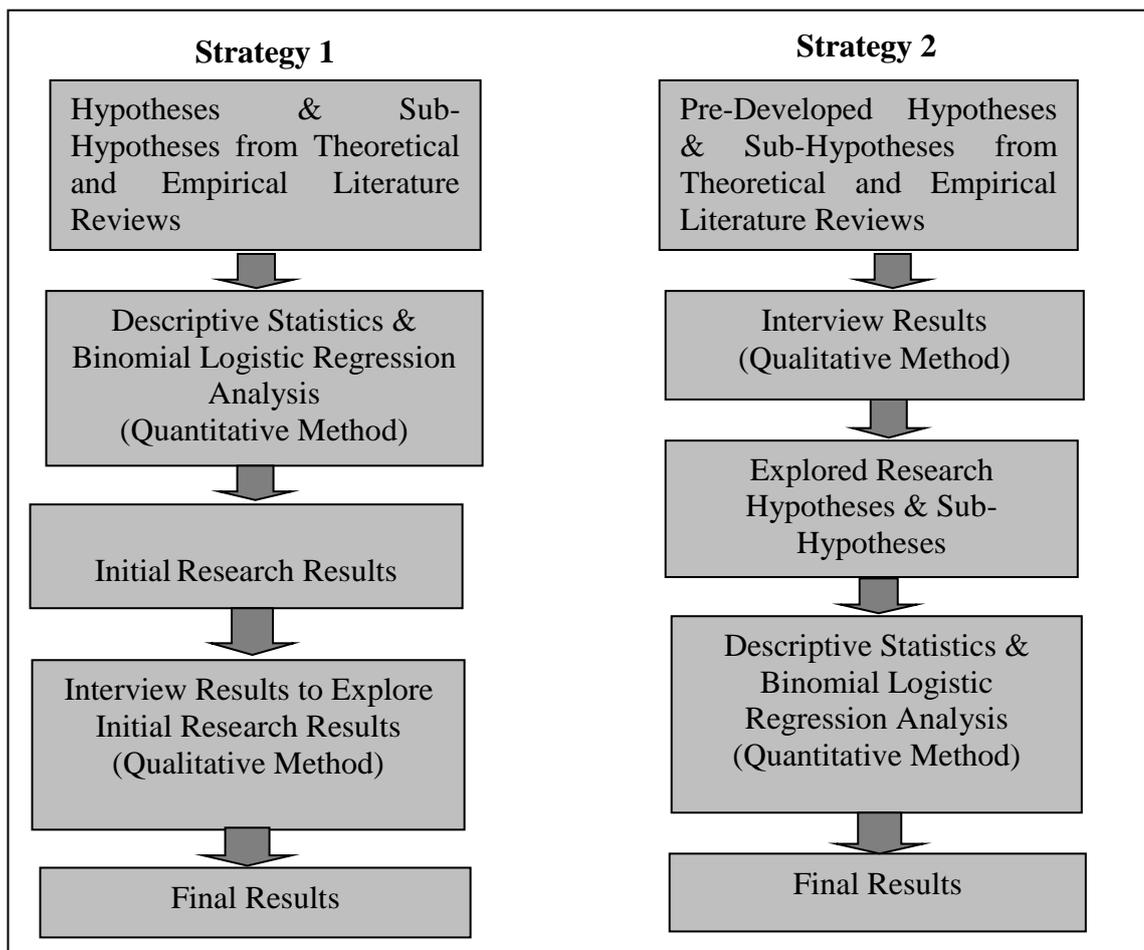
Figure 3.6: Options of Two Strategies for the Research.

3.2.4   Research Choices

Based on the explanation in Section 3.2.2 and 3.2.3, it can be seen that this research employs a mixed-method design by employing both qualitative and quantitative methods. The qualitative method consists of interviews (Chapter 4), while the quantitative method consists of descriptive statistics (Chapter 6) and binomial logistic regression analysis based on a panel data model (Chapter 7). Generally, descriptive statistics examine statistical characteristics for each explanatory variable, while binomial regression analysis decides suitable determinants of FFR in the Malaysian context.

Mixed-methods research has been established as a third methodological movement over the past 20 years, complementing the existing traditions of quantitative and qualitative movements (see Tashakkori & Teddlie, 1998, Teddlie & Tashakkori, 2009). The term 'mixed-methods' has come to be used to refer to the use of two or more methods in a research project yielding both qualitative and quantitative data (see Greene, 2007; Teddlie & Tashakkori, 2009; Cresswell & Plano-Clark, 2011). The use of mixed-methods designs in accounting and business research is certainly not a new idea (see Birnberg *et al*., 1990; Easterby-Smith *et al*., 1991). In the context of this research, the combination of qualitative and quantitative methods has given several advantages. The next paragraphs emphasise these advantages.

Basically, qualitative data provide a detailed understanding of a problem, while quantitative data provide more general understanding of a problem (Creswell & Plano-Clark, 2011). Thus, the combination of qualitative and quantitative data provides a more complete understanding of the research problem than either approach by itself (Creswell & Plano-Clark, 2011).

In this research, qualitative data (interview results) provide a comprehensive understanding of how individuals perceive FFR, before suggesting suitable fraud-risk factors in the Malaysian context. The interviewees are the people who are directly involved in decision-making process, operational roles, performance monitoring, internal and external auditing, as well as law enforcement pertaining to Malaysian PLCs. Thus, their perspectives are valuable in providing in-depth understanding of the research problem.

Meanwhile, quantitative data helps this research to examine empirically statistical characteristics for each proxy variable (i.e. descriptive statistics on explanatory variables) and determine causal-effect relationships between the likelihood of FFR and the fraud-risk factors (i.e. binomial logistic regression analysis). Therefore, the combination of qualitative and quantitative data would result in significant results and plausible conclusions for this research.

According to Creswell and Plano-Clark (2011), one type of evidence may be unable to provide a comprehensive explanation for the research. In this research, quantitative data is obtained from financial and non-financial information in Malaysian PLCs' annual reports, may not provide an adequate explanation of the fraud-risk factors. Similarly, interviews may provide biased results if only depending on interviewees' perspectives without being supported by statistical evidence. Thus, the combination of interview results and quantitative analysis will provide complementary perspectives, in enabling a more comprehensive explanation for this research.

Sometimes initial results may provide an incomplete understanding of a research problem and there is a need for further explanation (Creswell & Plano-Clark, 2011). This research has initially constructed five pre-developed hypotheses and ten pre-developed sub-hypotheses based on previous research studies.

However, this research has found that these pre-developed hypotheses and sub-hypotheses are unable to provide a complete explanation regarding the suitability of the proxy variables in the Malaysian context. Hence, interviews were conducted to explore these proxy variables and to find a reasonable explanation of the initial results.

Exploratory results from the interviews would provide an in-depth perspective on each fraud-risk factor in the context of Malaysian PLCs. Moreover, interview results could discover 'new specific results' pertaining to the fraud-risk factors in the Malaysian context. These results would suggest a systematic development of hypotheses and sub-hypotheses for quantitative analysis. Finally, quantitative analysis provides empirical results on what was learned from the exploration, which can be generalised (Creswell & Plano-Clark, 2011).

In some situations, a second research method may be added to the research to provide an enhanced understanding of some phases of the research (Creswell & Plano-Clark, 2011). In this research, qualitative data (interview results) is embedded within quantitative data (i.e. descriptive statistics and binomial logistic regression analysis). The integration between qualitative and quantitative data has enhanced the level of understanding for this research (Creswell & Plano-Clark, 2011).

According to Creswell and Plano-Clark (2011), a situation may exist in which a theoretical perspective provides a framework for the need to gather both qualitative and quantitative data in a mixed-method research. The theoretical perspective could provide a lens through which the entire research might be viewed (Creswell & Plano-Clark, 2011). In this research, all fraud-risk factors (i.e. incentive, pressure, opportunity, attitude, rationalisation, capability/competence, arrogance, ignorance and greed) are related to people's behaviour.

However, the majority of empirical results on these fraud-risk factors are derived from quantitative method (see Albrecht *et al*., 2004; Lou & Wang, 2009; Skousen *et al*., 2009; Omar & Din, 2010; Manurung & Hadian, 2013; Aghghaleh *et al*., 2014). Therefore, it is believed that there is a need to explore the complexity of social reality pertaining to these fraud-risk factors by conducting the interviews.

Interview results are crucial in providing a fundamental understanding of each fraud-risk factor and relevant proxy variable for this research. Thus, theoretical perspectives from the Fraud Models have provided a framework for the need to gather both qualitative and quantitative data in this research.

There are research studies that may gather both quantitative and qualitative data simultaneously or gather the data sequentially (Creswell and Plano-Clark, 2011). The process of gathering these data is called multiple research phases, which involve three phases of data collection. These phases are (1) synthesis of literature reviews to construct pre-developed hypotheses and sub-hypotheses; (2) interviews to explore pre-developed hypotheses and sub-hypotheses; and (3) descriptive statistics and binomial logistic regression analysis to determine causal-effect relationships. These phases are illustrated under 'Strategy 2' from Figure 3.6 of this chapter. Multiple research phases from a mixed-method design have provided significant information to enable the research objectives to be completely comprehended.

3.2.5 Time Horizon

Saunders *et al*. (2009) suggest two options of time horizon, which are cross-sectional and longitudinal studies. Both horizons are observational studies, which require researchers to record information about their subjects without manipulating the study environment. In cross-sectional study, observations can be compared with different population groups at a single point in time. This research examines 160 Malaysian Public-Listed Companies (PLCs), which consist of 45 fraudulent PLCs and 115 non-fraudulent PLCs. Financial and non-financial information for sixteen proxy variables are obtained from annual reports for each PLC. Cross-sectional time horizons allow these PLCs to be compared with two population groups, which are fraudulent PLCs and non-fraudulent PLCs.

However, utilising cross-sectional data alone is not sufficient because information on causal-effect relationships is not provided. For this reason, several observations on similar PLCs over a period of time should be conducted. As a result, this research also utilises longitudinal time horizons by collecting data from 2004 to 2013. Since this research begins in the first quarter of 2014, it is essential to obtain recent data at that particular time. Thus, data in 2013 would provide recent updates at that time. In order to obtain a sufficient number of fraudulent PLCs related to FFR offences within the context of this research, a 10-year period seems to be appropriate.

Given the complexity of obtaining sixteen proxy variables from 1,600 Malaysian PLCs' annual reports (160 Malaysian PLCs x 10 years), a 10-year period is reasonable. Besides, a few researchers have used 10 years data set in conducting empirical research studies related to the fraud-risk factors from the Fraud Triangle Model (see Lou & Wang, 2009; Skousen *et al*., 2009). Therefore, by utilising longitudinal-cross sectional time horizons, this research is able to observe the changes in each proxy variable from an individual perspective (fraudulent and non-fraudulent Malaysian PLCs) and time perspective (from 2004 to 2013).

3.2.6 Techniques and Procedures

According to Saunders *et al*. (2009), techniques and procedures involve explanation of how data is collected and analysed in the research. However, it is essential to explain the process of identifying 160 Malaysian PLCs as the research samples before discussing data collection and analyses.

3.2.6.1 Categories of FFR Offences within the Research Context

Following 'Listing Requirements - General Contents of Statement, Information or Document' by Bursa Malaysia, a Malaysian PLC "must ensure that any application, proposal, statement, information or document presented, submitted or disclosed pursuant to these Requirements - (a) is clear, unambiguous and accurate; (b) does not contain any material omission; and (c) is not false or misleading" (Bursa Malaysia, 2015b: 205). Based on these requirements, it can be concluded that information contained in non-fraudulent Malaysian PLCs' annual reports has satisfied these criteria. On the other hand, companies that are categorised as fraudulent Malaysian PLCs must have committed at least one or more offences pertaining to the above requirements.

As explained in Chapter 2 (Section 2.1.3), this research has specified categorisation of FFR offences based on (1) false statements or information; (2) misleading statements; and (3) combination of false statements/information and misleading statements. This categorisation is in line with the Committee of Sponsoring Organisations of the Treadway Commission (COSO) Report (as cited in Beasley *et al.*, 1999) that shows 90% of financial statement fraud (including FFR) involves the manipulation, alteration, and falsification of reported financial information. Similarly, these categories are addressed in Bursa Malaysia's website as follows:

(1) 'Enforcement' under 'regulations' section (http://www.bursamalaysia.com/market/regulation/enforcement/enforcement-statistics/); and

(2) 'Media Releases' section based on six specific subjects, which are (a) 'Enforcement actions on participants; (b) Public enforcement on company; (c) Public enforcement on delisting; (d) Public enforcement on directors or individual; (e) Revamped listing requirements and practice notes; and (f) Unusual market activity.

Details can be accessed via http://www.bursamalaysia.com/corporate/media-centre/media-releases/. Meanwhile, the SC has addressed these categories in the 'enforcement' section of SC's websites. Details on enforcement actions that were taken on PLCs for FFR offences can be accessed via http://www.sc.com.my/enforcement/actions/.

3.2.6.1.1.1 False Statements or Information

This research associates false statements or information with the acts of altering, destroying or defacing any statement/information; or presenting statement/information that does not reflect 'true value' or financial activities of particular PLCs. According to SC Act (2015), false statements or information normally take forms in three conditions. Firstly, disclosing or causing to be disclosed any information that is false or misleading. Secondly, disclosing or causing to be disclosed any information from which there is a material omission. Thirdly, engaging in, or aiding, or abetting, conduct that is misleading or deceptive or is likely to mislead or deceive the SC. False statements or information were the highest number of cases recorded between 2004 and 2013 as compared to the other two categories, which will be discussed in the next sections.

3.2.6.1.1.2 Misleading Statements

Misleading statements cause inaccurate financial reports, which involve material deviation between the announced unaudited financial figures and audited financial figures for similar financial period by Malaysian PLCs (Bursa Malaysia, 2014b). Bursa Malaysia (2014b) has listed six common areas of breaches involving misleading statements.

These areas are: (1) unavailability of accounting records (i.e. deviation from an unaudited profit after tax); (2) accounting errors (i.e. deviation from an unaudited loss after tax); (3) non-provision of doubtful debts (i.e. deviation from an unaudited loss after tax and minority interest); (4) non-provision of certain items (i.e. various adjustments in annual audited accounts arising from under provisioning of tax penalties and doubtful debts, non-provision for loss on disposal of land and impairment loss in the quarterly results); (5) reversal of revenue (i.e. restated audited financial reports from profit after tax to an audited loss after tax); and (6) financial irregularities (i.e. major adjustments of balance sheet which includes the shareholders' fund). In short, misleading statements take advantages from subjective interpretation pertaining to certain accounts, such as account receivables and doubtful debts. Hence, some fraudulent PLCs may be charged under this category in communicating deceived information with public and financial reports' users.

3.2.6.1.1.3 Combination of False Statements/Information and Misleading Statements

Typically, according to Bursa Malaysia and SC, combination of false statements/information and misleading statements involves the following breaches: (1) advertisements, circulations or publications of any statement of the amount of PLCs' capital, which is misleading; (2) the amount of nominal or authorised capital is stated without the words "nominal" or "authorised"; and (3) the amount of capital or authorised or subscribed capital is stated, but the amount of paid-up capital or the amount of any charge on uncalled capital is not stated as prominently as the amount of authorised or subscribed capital is stated. In addition, combination of false statements/information and misleading statements is also applicable to Executive and Non-Executive Directors who make a statement in any matter, knowing it to be false; or misleading; or intentionally omit or authorise the omission or accession of any matter.

Furthermore, this category also includes every person at a meeting votes in favour of the making of a false statement.

3.2.6.2 Data Distribution

Based on the three categories, Table 3.1 summarises data distribution for fraudulent and non-fraudulent Malaysian PLCs according to relevant industries.

Table 3.1: Distributions for Fraudulent and Non-Fraudulent Malaysian PLCs under FFR Offences for the Research

Sample Selection of Fraudulent Malaysian PLCs for the Research		Total
Malaysian PLCs that were charged for FFR offences by Bursa Malaysia and SC from 2004 to 2013		50
Less:		
PLCs belong to finance-based category	3	
PLCs that were charged with different categories of FFR offences	2	(5)
Total number of fraudulent Malaysian PLCs for the research		**45**

Category of Industry[17]	Total[18]				Main Total	
	Fraudulent PLCs		Non-Fraudulent PLCs			
	n	%	n	%	N	%
Consumer Products	9	5.6	23	14.4	32	20.0
Industrial Products	11	6.9	28	17.5	39	24.4
Construction	4	2.5	10	6.3	14	8.8
Trading & Services	13	8.1	33	20.6	46	28.7
Technology	2	1.3	5	3.1	7	4.4
Properties	5	3.1	13	8.1	18	11.2
Plantation	1	0.6	3	1.9	4	2.5
Total	**45**	**28.1**	**115**	**71.9**	**160**	**100**

Source: Bursa Malaysia 2015e and SC, 2013a, 2013b.

Most of the fraudulent Malaysian PLCs that were charged for FFR offences within the three categories of this research are from the 'Trading and Services' industry (13 out of 45 fraudulent PLCs). Following this, PLCs from 'Industrial Products (11 out of 45 fraudulent PLCs) and 'Consumer Products' (9 out of 45 fraudulent PLCs) were among the highest contributors to FFR offences' statistics within the context of this research.

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[17] PLCs are listed based on the sequence of standard listings by Bursa Malaysia
[18] n = number of PLCs from each category (fraudulent and non-fraudulent PLCs); % = percentage; and N = total number of PLCs from fraudulent and non-fraudulent categories.

Samples from these three industries associated to a total of approximately 73% (33 out of 45 fraudulent PLCs) of total fraudulent Malaysian PLCs in this research. The statistics support a claim made by KMPG (2014), which mentioned that the inherent nature of the industry in which the PLC operates is the main contributor to fraud (including FFR).[19]

3.2.6.3 Data Collection

This research employs sixteen proxy variables from 1,600 observations for quantitative analysis. Basically, information for these proxy variables is in the form of financial and non-financial data. This research defines financial data as information in the form of quantifiable variables, which mainly provide numerical values. In financial reports, financial data provides indicators of PLCs' financial performance such as growth and leverage. Additionally, all numerical values in most of the accounts in financial reports (i.e. Statement of Financial Position, Income Statement, Statement of Changes in Equity and Cash Flow Statement) are considered as financial data within the context of this research. In contrast, non-financial data provides non-numerical values, which mostly contain explanation in sentence form (i.e. 'Accounting Policies and Explanatory Notes'). Financial and non-financial data are collected from financial reports enclosed in Malaysian PLCs' annual reports. Basically, there are three steps involved in the process of data collection as listed below:

(1) Step 1- Data is obtained from Malaysian PLCs' annual reports;

(2) Step 2 - Data is organised in Microsoft Excel; and

(3) Step 3 - Data is transferred, coded and analysed in IBM SPSS and Stata.

---

[19] KPMG Malaysia (2014) has found that 44% respondents from Malaysian PLCs have reported fraud (including FFR) came from PLCs in Trading & Services (26%) and Consumer Products (18%).

The main process in Step 1 involves obtaining data from various sections in financial reports enclosed in Malaysian PLCs' annual reports. However, before identifying relevant sections in financial reports, a database or folder containing downloaded annual reports of fraudulent and non-fraudulent Malaysian PLCs was created. Two sources were used to download these annual reports; which are (1) Bursa Malaysia's website[20]; and (2) specific PLCs' websites. Most annual reports can be downloaded from Bursa Malaysia's website. However, in circumstances where Bursa Malaysia did not provide complete annual reports for a 10-year period (from 2004 to 2013), the remaining annual reports were downloaded from specific Malaysian PLCs' websites. All downloaded annual reports are categorised into fraudulent and non-fraudulent PLCs according to relevant industries.

Step 2 begins with organisation of the research data in Microsoft Excel. There are two underlying reasons for this step. The first reason is to make sure that all data are well-organised into the appropriate category according to the sixteen proxy variables for both 45 fraudulent and 115 non-fraudulent Malaysian PLCs. As such, the process of organising these data can be systematically conducted in Microsoft Excel.

The second reason is to create a reliable database for quantitative analysis, which provides two advantages. Firstly, data can be securely preserved and backed-up by having two separate files (i.e. Microsoft Excel and IBM SPSS/Stata). Secondly, formula and ratio calculations for several proxy variables can be easily and effectively executed [i.e. growth (ROA and changes in sales), leverage, ratio for insufficient corporate governance courses for Executive Directors, days taken for annual reports submission and ratio for Executive Directors' remunerations].

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[20] Annual reports can be downloaded via this link: http://www.bursamalaysia.com/market/listed-companies/list-of-companies/main-market/.

In order to confirm valid calculated values for these proxy variables, each value is calculated in two stages. The first stage involves formulated calculations in Microsoft Excel, in which specific formula is formulated on spread sheets and would be automatically calculated. The second stage involves manual calculations, where these values are manually calculated to reconfirm the initial values in order to avoid inaccurate values. In general, three main files are created in Microsoft Excel according to the following categories: (1) fraudulent PLCs; (2) non-fraudulent PLCs; and (3) a summary (master file) for both fraudulent and non-fraudulent PLCs.

Step 3 begins with data transferring from Microsoft Excel to IBM SPSS and Stata. Technically, this process is easier, since all data are being systematically calculated and organised in Microsoft Excel. Nevertheless, this process should be cautiously conducted to avoid human error, in which data can be wrongly keyed-in or transferred into IBM SPSS and Stata.

The second process involves data coding. Some proxy variables must be coded with dummy variables to ensure IBM SPSS and Stata are able to analyse all quantitative input. A dummy variable is a variable that is created to represent group memberships on a variable (Jaccard, 2001). The method is also called 'dummy coding' or 'indicator coding', which involves assigning '1' to all members of one group and '0' to everyone else (Jaccard, 2001). In this research, eight proxy variables are coded by dummy variables, which are: (1) composition of BODs; (2) turnover of HIA; (3) historical financial restatement times; (4) changes in accounting policies; (5) undeclared policies on doubtful debts and account receivables; (6) limited access to SPVs' financial reports; (7) CEO duality; and (8) a CEO and/or Chairman of BODs who is also a politician. If these data were not properly coded, both IBM SPSS and Stata would produce inaccurate the results, which might result in inaccurate empirical results.

3.2.6.4 Data Analysis

Data analysis is regarded as the last layer of the research process onion suggested by Saunders *et al*. (2009). This section concentrates on relevant data analyses for the research. Recalling Figure 3.5 and Figure 3.6, this research employs three data analyses: (1) interview findings (qualitative analysis); (2) descriptive analysis (quantitative analysis); and (3) binomial logistic regression analysis (quantitative analysis). However, as explained in Section 3.2.1, interviews are used to supplement the main data analysis, which is binomial logistic regression analysis.

3.2.6.4.1 Interview Findings

This research employs interviews to explore suitable fraud-risk factors from the Fraud Models in the Malaysian context. Semi-structured interviews are used to allow a certain degree of control during the interview process and at the same time allow interviewees to provide additional information as they see fit (Creswell, 2009a, 2009b). Specifically, face-to-face interviews were conducted with six interviewees from different categories of positions with regard to Malaysian PLCs. They are: (1) a member of the BODs who is also the Head of State Government Officials; (2) a CEO from a Malaysian PLC; (3) a member of the BODs who is also a State Executive Committee; (4) an officer from Enforcement Division of Securities Commission (SC) Malaysia; (5) an external auditor involved in auditing Malaysian PLCs' financial reports; and (6) a Chief Audit Executive (CAE) or Head of Internal Auditor (HIA) from a Malaysian PLC. All interviewees gave full commitment and corporation in answering all interview questions. The interview questions were structured and analysed based on the sequence of the fraud-risk factors (i.e. incentive, pressure, opportunity, attitude, rationalisation, capability/competence and arrogance).

Towards the end of the interview sessions, interviewees were asked some questions pertaining to other fraud-risk factors that they believed might be suitable in the Malaysian context. As a result, the interview findings have not only explored suitable fraud-risk factors from the Fraud Models, but also suggested three additional fraud-risk factors (i.e. determination, ignorance and greed) for further consideration. Details of interview findings are discussed in Chapter 4 (Interview Findings – Exploration of Relevant Fraud-Risk Factors in the Malaysian Context).

3.2.6.4.2   Descriptive Statistics

After finalising seven hypotheses and fourteen sub-hypotheses based on the interview results, sixteen proxy variables were tested for hypothesis testing (i.e. binomial logistic regression analysis). However, before hypothesis testing was conducted, each explanatory variable (which is represented by a specific proxy variable) was statistically examined in descriptive statistics. The chapter also provides additional tests for both ratio and categorical variables, including Wilcoxon sign rank test, median nonparametric test, the Chi-square test and the test of normality. Details of relevant tests of descriptive statistics are discussed in Chapter 6 (Statistical Characteristics of Explanatory Variables).

3.2.6.4.3   Binomial Logistic Regression Analysis

Binomial logistic regression analysis is the main quantitative analysis for this research. Utilising 25,600 data (16 proxy variables x 160 Malaysian PLCs x 10 years), this analysis produces empirical results from hypothesis testing. The main objective of this analysis is to determine suitable determinants of FFR among Malaysian PLCs based on causal-effect relationships between the dependent variable (DV), which is the likelihood of FFR; and explanatory variables, which are the fraud-risk factors. The term 'binomial' refers to dichotomous outcomes derived from this analysis (i.e. non-FFR or FFR).

Logistic regression is chosen over multiple regression because DV for this research is a categorical variable, which is coded as '0' for non-FFR and '1' for FFR. Details of relevant tests in binomial logistic regression analysis are discussed in Chapter 7 (Determinants of FFR among Malaysian PLCs).

3.3   Ethical Considerations

Ethical considerations in conducting research are seriously considered by the University. Each research student who intends to collect data, which involves engagement with people must get a formal approval from the Ethic Committee in particular university departments. An official form called "A Proforma for Staff and Students Beginning a Research Project" should be submitted by the research student. This proforma should be read in conjunction with the 'Ethical Principles for Researchers' provided by the respective department (in this case, Hull University Business School – HUBS). The student must confirm whether human participants are involved or not, in the research. In addition, if the research has a research sample involving participants under 18 years of age, it requires specific authorisation, including that from authorities outside the University.

The student must answer all questions in the proforma, which generally focus on the following issues: (1) obtaining written informed consent from the participants, withholding of disclosure of information regarding the research; (2) any aspects of the study that pose a possible risk to participants' psychological and physical well-being (i.e. use of substances such as alcohol or extreme situations such as sleep deprivation participants might find humiliating, embarrassing, ego-threatening, in conflict with their values, or be otherwise emotionally upsetting); (3) any aspects of the research study that might threaten participants' privacy.

Other issues are (4) possibility of conducting a research study that expose the researcher to any risks (i.e. collecting data in potentially dangerous environments); (5) whether the research is conducted on a group culturally different from the researcher/student/supervisors; and (6) conflict with any of the HUBS's research ethics principles. Since this research employs interviews as part of the data collection method, ethical approval was needed. Therefore, a formal approval on ethical consideration for this research is enclosed in **Appendix 3**.

3.4 Conclusions

Based on three main paradigms (i.e. interpretivism, critical and positivism), this chapter has explained the appropriate philosophical paradigm (i.e. positivism) for the research. Following this, relevant methodological choices, which include research methods, approaches and strategies were explicitly elaborated. Relevant qualitative and quantitative analyses were also discussed. This chapter is concluded with ethical considerations in data collection, particularly in conducting interviews. In summary, this chapter has provided an explanation on relevant methodological choices adopted by this research to find the answers to the five RQs and seven SRQs.

CHAPTER 4: INTERVIEW FINDINGS - EXPLORATION OF RELEVANT FRAUD-RISK FACTORS IN THE MALAYSIAN CONTEXT

Chapter 3 has elaborated a mixed-method design as the preferred methodological choice undertaken in this research for collecting and analysing data. This chapter demonstrates the application of the qualitative method, the interview, as part of the mixed-method design for this research. The main objective of conducting interviews was to explore the suitability of the fraud-risk factors in the Malaysian context derived from the Fraud Models (i.e. the Fraud Triangle Model, the Fraud Diamond Model and Crowe's Fraud Pentagon Model). Results from the interviews serve as a complement to the main data results from the quantitative analysis (i.e. binomial logistic regression analysis). The fact that the Fraud Models were developed in western countries has made these interviews important to explore the suitability of these fraud-risk factors (i.e. incentive, pressure, opportunity, attitude, and rationalisation) in predicting the likelihood of fraudulent financial reporting (FFR) among Malaysian PLCs.

In addition, interviews contribute 'real world' and practical perspectives on the application of the fraud-risk factors within the Malaysian context. Based on an inductive approach, interview results provided a fundamental perspective in exploring the fraud-risk factors from the Fraud Models. Additionally, the interview findings also suggested additional fraud-risk factors that might suit the Malaysian context. However, as indicated in footnote number 16 of Chapter 3, interviews are functioned as a supplementary method for the main quantitative analysis. As such, interviewees' perspectives might be different from the quantitative results of binomial logistic regression analysis (Chapter 7).

This chapter begins with Section 4.1 to explain the background to the interviews. The background consists of relevant interview procedures and a summary of the interviewees' profiles. Section 4.2 discusses the interview results based on the fraud-risk factors from the Fraud Triangle Model (Cressey, 1953). This section reveals interviewees' perspectives on incentive, followed by results on the first proxy variable of Sub-Hypothesis 1a (H1a) of this research. Section 4.3 continues the discussions on pressure and the related proxy variable for Sub-Hypothesis 1b (H1b). Section 4.4 discusses interviewees' perspectives on opportunity with two proxy variables for Sub-Hypotheses 2a and 2b (H2a and H2b).

Section 4.5 explains interviewees' perspectives on attitude, followed by discussions on related proxy variable for Sub-Hypothesis 3a (H3a). Section 4.6 discusses interviewees' perspectives on rationalisation and the relevant proxy variable for Sub-Hypothesis 3b (H3b). Section 4.7 highlights interviewees' perspectives on capability/competence from the Fraud Diamond Model (Wolfe & Hermanson, 2004) with suitable proxy variables for Sub-Hypotheses 4a and 4b (H4a and H4b). Section 4.8 explains interviewees' perspectives on arrogance from Crowe's Fraud Pentagon Model (Crowe, 2011) and related proxy variables for Sub-Hypotheses 5a and 5b (H5a and H5b). Section 4.9 discusses additional findings discovered from the interviews, including the most critical fraud-risk factors in the Malaysian context. Section 4.10 concludes the chapter. The next section describes the background of the interviews. Figure 4.1 illustrates the structure of Chapter 4.

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│   ┌───▶│ Chapter  4:  Interview  Findings  -             │◀───┐      │
│   │    │ Exploration  of  Relevant  Fraud-risk           │    │      │
│   │    │ Factors in the Malaysian Context                │    │      │
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│   ├───▶│ 4.1   Background to the Interviews              │◀───┤      │
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│   ├───▶│ 4.2   Incentive                                 │◀───┤      │
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│   ├───▶│ 4.3   Pressure                                  │◀───┤      │
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│   ├───▶│ 4.4   Opportunity                               │◀───┤      │
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│   ├───▶│ 4.5   Attitude                                  │◀───┤      │
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│   ├───▶│ 4.6 Rationalisation                             │◀───┤      │
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│   ├───▶│ 4.7 Capability/Competence                       │◀───┤      │
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│   ├───▶│ 4.8   Arrogance                                 │◀───┤      │
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│   │    ┌─────────────────────────────────────────────────┐    │      │
│   ├───▶│ 4.9    Malaysian Specific Findings –            │◀───┤      │
│   │    │ Arrogance,  Ignorance,  Greed  and              │    │      │
│   │    │ Determination                                   │    │      │
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│   └───▶│ 4.10   Conclusions                              │◀───┘      │
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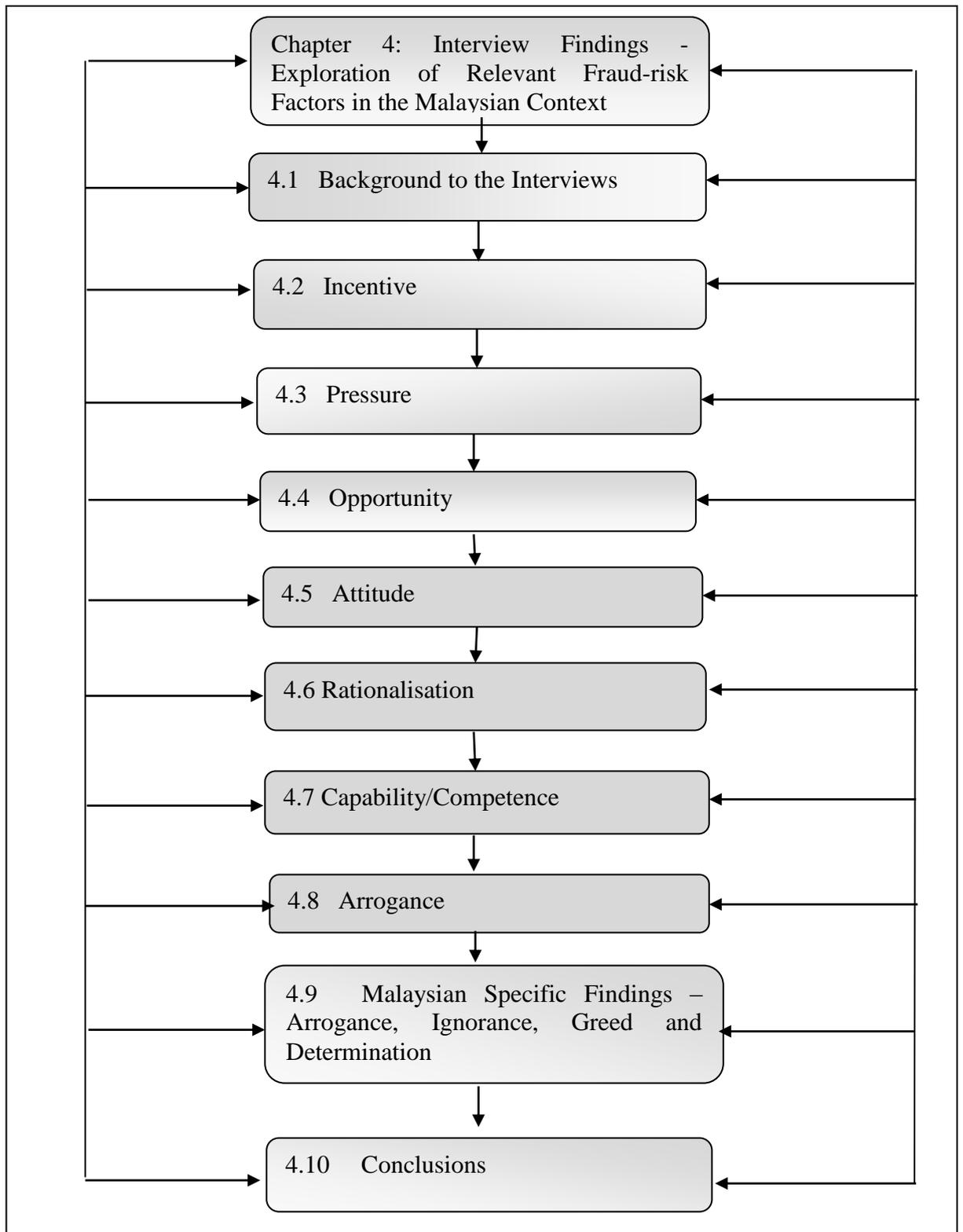
Figure 4.1: Structure of Chapter 4.

4.1   Background to the Interviews

This research uses a semi-structured interview method, which provides an efficient balance of structure and openness. Semi-structured interviews allow the researcher to have a certain degree of control in data collection, but at the same time allows interviewees to provide additional information as they see fit (Creswell, 2009a, 2009b). Specifically, face-to-face interviews were chosen as the interview approach due to the advantages of a high response rate and accuracy. According to Creswell (2007), face-to-face interviews allow interviewees to share their perspectives unencumbered by the expected results from previous research studies. Face-to-face interviews were proven to discover underlying motivations, feelings, values, attitudes and perceptions about fraud detection (McDaniel & Gates, 2001; Alleyne, 2002). Therefore, it was assumed that face-to-face interviews would be reliable to explore the suitability of the proposed proxy variables according to relevant fraud-risk factors. Based on an exploratory approach, interview results would provide a complex and detailed understanding on hypotheses and sub-hypotheses development for this research. The face-to-face interviews were conducted during the month of July and August 2014 in Malaysia.

A total of six interviewees agreed to participate in these interviews. Lichtman (2006:119) holds the view that "most qualitative research studies use a small number of individuals and cover material in depth. It is quite common to see studies with fewer than 10 respondents; sometimes only a single person is studied." Furthermore, the results from interviews are served as a complement to the main results from quantitative analysis using binomial logistic regression analysis.

Therefore, six interviewees are considered adequate to provide in-depth perspectives on each fraud-risk factor and proxy variable. Initial contacts to solicit cooperation were made with each interviewee through official letters attached in e-mails within a period of two months before the intended interview dates. A set of interview questions was developed. Each question addressed a specific objective[21]. A brief explanation and interview guidance pertaining to this research were given once the interviewees agreed to be interviewed. For the purpose of confidentiality, the names of the interviewees and their respective PLCs or organisations are not revealed. All interviewees had signed a consent form which has clearly stated the details below:

1. Interviewees understand the aims, methods, and anticipated benefits, and possible risks/hazards of the research;

2. Interviewees voluntarily and freely give consent to his/her participation in such research;

3. Interviewees understand that aggregated results will be used for research purposes and may be reported in scientific and academic journals;

4. Individual results will not be released to any person except at the interviewee request and on his/her authorisation; and

5. Interviewees are free to withdraw their consent at any time during the study, in which event their participation in the research study will immediately cease and any information obtained from them will not be used.

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[21] **Appendix 4** explains the 'Interview Guide', which provides details of the interview questions and objectives.

English language was used as the medium of communication for the interviews, as all interviewees were competent English users. Thus, translation was not needed. In order to render greater reliability to the analysis, the interviews were voice-recorded and transcribed in full. Specifically, this research utilises 'Hypothesis Coding' in developing interviews themes[22] as suggested by Miles *et al*. (2014). Hypothesis coding[23] is appropriate for hypothesis testing and analytic induction of qualitative data, particularly the search for causes and explanations in research data (Miles *et al*., 2014).

4.1.1   Interpretation of the Interview Findings

There is no doubt that the fraud-risk factors from the Fraud Models have been empirically tested in previous research studies since the introduction of the Fraud Triangle Model in 1953. However, as mentioned earlier, most of these empirical research studies only concentrate on the Fraud Triangle Model, rather than the Fraud Diamond Model and Crowe's Fraud Pentagon Model. As such, it is imperative for this research to find out whether the fraud-risk factors from these two models are suitable in the Malaysian context. Hence, interviewees' perspectives on these fraud-risk factors are significantly important. If most of the interviewees agreed that these fraud-risk factors are the right factors that can cause FFR among Malaysian PLCs, these factors would be employed as explanatory variables with relevant proxy variables for hypothesis testing. In addition, interviewees were expected to share some examples of these fraud-risk factors based on their experiences and observations. These examples are useful to compare common types of fraud-risk factors between the Malaysian context and the Western context.

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[22] Interview themes are attached in **Appendix 5**.
[23] The codes are developed from a theory/prediction about the research data before being collected and analysed (Miles *et al*., 2014). Hence, hypothesis coding is usually employed on pre-determined hypotheses (in this research are regarded as 'pre-developed hypotheses').

On the other hand, if the majority of the interviewees disagreed that these fraud-risk factors are suitable to predict the likelihood of FFR among Malaysian PLCs, there is a possibility that none of the Fraud Models may be suitable to be used in the Malaysian context. Therefore, the intention was to discover specific results as additional fraud-risk factors through these interviews. In order to maintain the quality of answers from the interviewees, not all responses are discussed in this chapter. This research only discusses interviewees' responses that have impacts to the research results, especially for quantitative analysis. As such, simple responses, such as '*Yes*' or '*No*' are not included in this chapter.

4.1.2   Profiles of the Interviewees

The six interviewees represent different categories of positions and roles with regard to Malaysian PLCs. These interviewees have their own area of expertise and experience in performing their responsibilities. Based on these differences, the interviews aimed to gain different perspectives on similar issues or topics from the interview questions. Additionally, all interviewees are highly literate in accounting and financial reporting, especially with regard to Malaysian PLCs. Most importantly, they have demonstrated sufficient knowledge on determinants of FFR in the Malaysian context. Table 4.1 summarises profiles of the interviewees, which indicates their current position and duration of service, academic/professional background and biggest challenge for their posts. This information was obtained during ice-breaking sessions at the beginning of each interview.

Table 4.1: Profiles of the Interviewees

Interviewee	Current Position (Duration)	Academic/Professional Background	Biggest Challenge for their Posts
A	A member of Board of Directors (BODs) in a Malaysian PLC who is also Head of State Government Officials. (4 years)	Master Degree in Human Resource Management.	To identify, develop and monitor PLC's strategies.
B	Chief Executive Officer (CEO) for a Malaysian PLC. [7 years (but altogether he has 39 years of working experience in the particular PLC before being appointed as the CEO).]	Master in Business Administration (MBA) and Bachelor Degree in Civil Engineering. He is also a registered professional engineer with the Board of Engineer Malaysia and a member of the Malaysian Water Association.	To comply with Bursa Malaysia and Securities Commission Malaysia (SC)'s requirement, whereby the PLC has to have transparent corporate governance practices.
C	A member of BODs in a Malaysian PLC who is also a Politician [appointed as a State Executive Committee (Exco) Member in one of the States in Malaysia] (6 years)	Senior Cambridge and Malaysian Certificate of Education.	To vet through PLC's financial proposals and performances.
D	An Officer in Enforcement Division of SC Malaysia. (5 years)	Bachelor Degree in Accounting.	To investigate and prosecute PLCs that breach the securities laws and also to ensure all PLCs follow the act and procedures.
E	External auditor who is directly involved in auditing Malaysian PLCs' financial reports. (8 years)	Bachelor Degree in Accounting and Bachelor Degree in Finance.	To provide audit, tax and advisory services in valuable ways. This can benefit not only clients, but also the capital markets. This task also includes opinion on the financial reporting based on auditing.
F	Chief Audit Executive (CAE) for a Malaysian PLC. (10 years)	Bachelor Degree in Accounting and a member of Malaysian Institute of Accountant (MIA).	To make sure that financial reports are prepared accordingly (true and fair view) as approved by accounting standards in Malaysia.

The following sections discuss the interview results based on the sequence of the fraud-risk factors from the Fraud Models, which are incentive, pressure, opportunity, attitude, rationalisation, capability/competence, arrogance and additional factors in the Malaysian context.

4.2   Incentive

Interview results reveal that most of the interviewees (4 out of 6) agreed that incentive is one of the suitable fraud-risk factors in detecting the likelihood of FFR among Malaysian PLCs. Incentive is also viewed as a motivating factor towards greed. Examples of incentive in the Malaysian PLCs' context are bonuses and overseas trips funded by the PLCs.

> "*I believe that greed is derived from various incentives offered by PLCs. For instance, double or triple bonus incentive, which may be depending on the company's profit or some other perks, like overseas trip, vacation funded by the company if the PLC can achieve outstanding performance*".   - **Interviewee D**

Other examples relate to higher dividend payouts and remunerations as part of the incentives among Malaysian PLCs.

> "*In my experience, incentives among executives like directors can be very persuasive to drive them for the manipulation. Higher dividend payouts and company's remunerations are part of the reason*". – **Interviewee E**

PLCs' share price is also one of the incentives that could possibly drive executives or non-executives in Malaysian PLCs to get involved in FFR.

> "*One of the common examples is bonus for the staff, especially executives and higher dividend payouts for the shareholders if the company could perform a better run or profit in the current year. Executive and non-executives directors might want to present excellent financial performance, which can attract public and shareholders' confidence, so that the share price could have increased or at least maintain in average for that particular financial year.*" – **Interviewee F**

113

This finding is quite similar to the statement made by Albrecht et al. (2004) when he relates that executives of several fraudulent companies in the US were endowed with a high value of stock options that made it far more important to keep the stock price increasing than report financial results accurately. Hence, incentive is a valid fraud-risk factor that can be employed in predicting the likelihood of FFR among Malaysian PLCs.

4.2.1 Interviewees' Perspective on the Most Effective Financial Ratio for Financial Performance

Most of the research studies on FFR that adopt quantitative method use growth ratio to measure financial performance (see Lou & Wang, 2009; Skousen *et al*., 2009; Manurung & Hadian, 2013). However, there was a possibility that the interviewees might suggest another financial ratio that is most effective to measure performance for Malaysian PLCs. Hence, a question on the most effective financial ratio from Malaysian PLCs' annual reports that can be used to measure financial performance was asked to verify this forethought. As a result, four interviewees have confirmed that growth ratio or Return on Assets (ROA) is the most effective financial ratio to measure financial performance for Malaysian PLCs. The interviews result is very important to explore the use of ROA as the proxy for Sub-Hypothesis 1a of this research, which is:

H1a: High growth in Malaysian PLCs indicates a higher tendency towards the likelihood of FFR.

4.3   Pressure

Interview results reveal that all six interviewees agreed that pressure is one of the suitable fraud-risk factors in detecting the likelihood of FFR among Malaysian PLCs. However, pressure was not seen as an absolute reason for FFR, as stated by Interviewee A:

> *"In a way yes, but to say that as an absolute reason to manipulate financial reporting, it may not be so. As I said earlier, it all goes with the Directors, your principle that you hold, your integrity and transparency towards the company"*. – **Interviewee A**

Interviewee C described that pressure can exist in a situation when executives and non-executives have to prove their capabilities in managing the PLC's business.

> *"Of course, they would like to prove that they are capable of managing the business."* – **Interviewee C**

The interview results also reveal that pressure is generally formed when the shareholders put higher expectation on the PLCs' executives to produce an outstanding performance for the PLC.

> *"I am not really sure on the example, but generally pressure comes from shareholders who normally want to see their invested public listed companies produces wonderful figures, interesting figures and attractive figures on their annual reports."* - **Interviewee D**

Pressure is also categorised into internal and external factors as mentioned by Interviewee E:

> *"It could have been triggered from inside or outside of the company. Employment pressure from continuous compensation structures and company's financial pressure are the insider factors, while capital market threats to the business financial stability can become an external factor."*   – **Interviewee E**

In fact, some of the interviewees believed that pressure is among the most critical factors that can lead towards FFR in Malaysian PLCs.

"One of the factors that lead to manipulation of financial reports is to show that he or she is performing well in the company, so that he or she will not be questioned or be fired by the company." – **Interviewee C**

"Despite all factors that we have discussed earlier, I think that financial threat could be another factor towards manipulation of financial reporting in Malaysia. As a developing country, monetary policies are very important in order to make sure that business cycles, including PLCs are fully operated. Global financial stability, which is beyond control, can make a huge impact to Malaysian PLCs. As for economic recession, financial threat caused by global economic recession can become a major factor for Malaysian PLCs to manipulate financial reporting just for their survival." – **Interviewee D**

"Financial pressure is one of the common motivators for executives or non-executives to manipulate financial reporting" – **Interviewee F**

Based on the interview results, this research accepts pressure as one of the fraud-risk factors that can be used to predict the likelihood of FFR among Malaysian PLCs. Therefore, results from Section 4.2 and 4.3 have confirmed Hypothesis 1 as follows:

H1: Incentive/pressure indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs

4.3.1 Interviewees' Perspective on the Most Effective Financial Ratio for Financial Pressure

Similar to growth ratio, debt or gearing ratio (leverage) has been widely used by some researchers of Fraud Models in calculating financial pressure (Lou & Wang, 2009; Skousen *et al.*, 2009; Manurung & Hadian, 2013; Aghghaleh *et al.*, 2014). In order to confirm whether the gearing ratio is suitable to be used in measuring Malaysian PLCs' financial pressure, a question regarding this matter was posed. As the outcome, five interviewees agreed that debt or gearing ratio is the most effective financial ratio to measure financial pressure for Malaysian PLCs. Therefore, debt or gearing ratio is used as the proxy for Sub-Hypothesis 1b of this research, which is:

H1b: High leverage on Malaysian PLCs indicates a higher tendency towards the likelihood of FFR.

4.4 Opportunity

The interviews found that the majority of the interviewees (4 out of 6) agreed that opportunity is one of the fraud-risk factors that can lead to FFR among Malaysian PLCs.

> "*When we talk about opportunity, it doesn't only negatively influence executives or non-executives, but also imply to everyone in any situations. Of course opportunity can lead them to manipulate financial reporting if they will gain benefits out of it.*" – **Interviewee F**

Examples of opportunity are the weakness of internal control that might open opportunity to executive directors to manipulate financial reporting through their skills with figures and computers. Access to financial and non-financial data must be controlled to reduce the risk of opportunity for potential fraudsters.

> "*Most of the fraud cases would have been related to the weakness of internal control.*" – **Interviewee D**

> "*I would say that a skilful executive whether in numbers or computers might potentially do harm, if the company practises lack of segregation of duties among the staff. But for non-executives, there are very little chances for the manipulation. They might influence that company's decision in the BODs meeting, or if they are appointed as audit committee members or chairman, they can simply oversight any doubtful accounts. However, for such non-executives to commit this harm, the company executives' participation as internal sources is a must.*" – **Interviewee E**

> "*From an internal auditors' side, I can only comment that financial and non-financial data accessibility is one of the good examples. Nowadays, everything is almost possible to get if someone has efficient skills in computers. If you can break anyone's password, then you can access any data that the person has.*" – **Interviewee F**

117

In contrast, there are some interviewees who believed that the existing procedures imposed by Bursa Malaysia and SC can eliminate or reduce fraudulent elements in financial reporting. Moreover, systematic and efficient internal controls implemented by the PLCs are sufficient to close the opportunity's gap for the potential fraudsters.

> "*Financial reporting is a process and has set procedures with various types of controls that can eliminate or reduce fraudulent elements in the reporting to Bursa Malaysia and Securities Commission. So, in my company, within the company we have an internal auditor. On top of that, we have an external auditor. On top of that, we have the risk and audit committee. So there are sufficient checks and balances to minimise any potential fraudulent practices and these have been proven in the long existence in our company. We've never experienced any fraudulent cases so far.*" – **Interviewee B**

> "*SC is quite stringent in monitoring the financial reports and the penalty for misdoing or misreporting is quite severe. So I think, most of these executives or non-executives, they will not try to risk their future.*"
> – **Interviewee C**

Based on the interview results, this research accepts opportunity as one of the fraud-risk factors to indicate the likelihood of FFR among Malaysian PLCs. Therefore, these results have confirmed Hypothesis 2 as follows:

H2: Opportunity indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs.

4.4.1 Interviewees' Perspective on Board of Directors (BODs) Composition in Malaysian PLCs

Bursa Malaysia has specifically emphasised the minimum composition of Independent Directors for Malaysian PLCs. Bursa Malaysia's Listings Requirement has stated that a minimum of 1/3 of total BODs composition must be Independent Directors (Bursa Malaysia, 2015c).

This interview intended to get interviewees' perspective whether current BODs composition, which comprises Independent Directors (also known as outside members or Independent Non-Executive Directors) and Dependent Directors (also known as inside members or Executive Directors), has a significant effect in deliberating major decisions for Malaysian PLCs. 'Significant effect' represents the influence level between outside and inside members in deliberating major decisions for Malaysian PLCs.

The interviewees' responses on this question will provide clearer indication whether the proportion of 1/3 of Independent Directors as the minimum requirement in BODs is commonly accepted or not. This question addressed whether there is any dispute between the two parties in deliberating major decisions in Malaysian PLCs. The interviews revealed that all interviewees agreed with the current requirement set by Bursa Malaysia. The combination, as proposed by Bursa Malaysia, gives many advantages such as exchange of ideas and also the ability to view issues from different perspectives.

> *"I'm sure the fact that in our regulations that a listed company should have executive and non-executive members. There are reasons for that. So a combination of the two very much assured it is with a good intention. So far for my particular company, combination of the two (enables) not only exchange of idea or issues, but it will enable a factor to be looked on from different perspectives. I mean, being those who are financially literate or non-financially literate, they may see an issue from different views. So that is where the boards are able to deliberate whatever any issue, especially on finance if it ever arises."* – **Interviewee A**

Current composition also gives value-added to the Malaysian PLCs, in the sense of vast experience and diverse background of skills or disciplines. As a result, a better-informed decision can be made.

> *"It has a significant effect in deliberating major decisions for this company. The directors usually have vast experience and diverse background of skills or disciplines. That's the reason they were incorporated to be our Board of Directors. To give value-added from their experience and their expertise. So that, we can make a better informed -decision, ok. Being non-executive and independent would be an added core value. The directors I mean yes...they should be independent and non-executive in making impartial decisions in the interest of shareholders."* – **Interviewee B**

Another advantage of having a 1/3-composition in Malaysian PLCs' BODs is the element of 'checks and balances' among Executive and Non-Executive Directors in providing equality in deliberating PLCs' decision.

> *"Yes I think the Non-Executives and Executives; they can perform their duty as check and balance, which are their duty of performance."* – **Interviewee C**

> *"To me, the rules are very clear enough and there is no comfort room for dependent directors or Executive Directors to dominate company's decision."* – **Interviewee D**

Moreover, the involvement of outside members or Non-Executive Directors in BODs composition is due to their free-of-personal interest status.

> *"Outside members of BODs or Non-Executive Directors have no personal interest in the company, at least theoretically."* – **Interviewee E**

> *"We need outside parties that have no personal interest in the company to be part of the BODs, not only to protect the shareholders' interest, but also for the company's sake itself."* – **Interviewee F**

Based on these responses, there is a clear indication that 1/3 or 33.3% proportion of Independent Directors (outside members) as the minimum requirement in BODs is not only accepted, but also gives a clear picture that there is no dispute between Dependent Directors (inside members) and Independent Directors (outside members) in deliberating major decisions, especially among Malaysian GLCs. However, there is still room for argument on the remaining 2/3 or 66.7% composition of dependent directors (inside members), especially among small-scale or family-based PLCs.

As such, Sub-Hypothesis 2a focuses on the percentage of Independent Non-Executive Directors (outside members) as compared to the total number of BODs as stated below:

H2a: Lower percentage of outside members in BOD's indicates a higher tendency towards the likelihood of FFR.

4.4.2 Interviewees' Perspective on the Frequent Changes of Head of Internal Auditor (HIA)

This research chooses Head of Internal Auditor (HIA) as one of the key personnel that deals with internal auditing tasks in Malaysian PLC. In general, HIA is responsible to check and verify all accounting and financial transactions in a particular PLC. Hence, HIA plays a crucial role as the head or chief of the audit department. Therefore, the interview sought to measure interviewees' opinion on frequent changes of HIA[24] that might have an effect on the Malaysian PLCs' performance, particularly on the way of preparing financial reporting.

There are three explanations for frequent changes of HIA, which are (1) the HIA is incompetent in preparing financial reporting as demanded by the top management; or (2) the HIA disobeys top management's direction to prepare financial reports according to their will, because he/she feels that something is not right; or (3) due to his/her personal reasons to resign. However, this research is interested in the second possibility, which may indicate the possibility of FFR occurrence. For example, changes of HIA are made as an attempt to reduce or hide FFR in any particular PLCs.

The interviews revealed that both possibilities could happen, but the changes would not necessarily affect the PLCs' performance as a whole. This is because most of the Malaysian PLCs have a Risk and Audit Committee and also engage external auditors as the other layers of auditing procedures.

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[24] Some of the interviewees referred to HIA as the Chief Audit Executive (CAE).

"The reason is that...no doubt that the company has an internal audit; my company has an internal audit. But external audit also does play a role. So, once again I will reiterate that Head of Internal Audit's performance may not fulfil the total requirements of the listed company, but it is in a way as whistle-blower for the company. So the combination of the two still will be of good in nature." – **Interviewee A**

"Chief Audit Executive usually reports to Risk & Audit Committee and independent from company's reporting. Hence, there is no significant implication." – **Interviewee B**

"The Malaysian Code of Corporate Governance provides 3 alternatives for Malaysian PLCs with regards to auditing functions. They can use their own employees who will carry the internal audit tasks or they can hire external auditors like us, based on contract-basis to conduct the audit on behalf of the company. Alternatively, they may also engage independent professional firm as supportive service for their internal auditors, what we call as co-sourced. But most of the PLCs prefer the external auditors." – **Interviewee E**

"I believe that Bursa Malaysia has provided a clear procedure for us, internal auditors whereby we must be independent of the activities that we audit. Furthermore, we must report directly to the audit committee, which has full access to examine our reports. For your information, the majority of audit committee members must be independent directors." – **Interviewee F**

HIA incompetence is not the only reason for changes. Changes could happen for the purpose of 'checks and balances' in order to ensure thorough auditing is being done.

"Changes may not be necessary because of incompetency. But changes may have to be there to enable a new auditor to indirectly also audit the previous auditing done by another auditor. So it's the issue of 'check and balance'; and also to ensure that a thorough auditing is being done by a new auditor; because having well known or being well-versed in the accounts of the company, may lead to the particular auditor to take it for granted - the accounts - instead of looking at it very seriously. So getting a new one, it helps a lot. It helps as the balancing between the current and previous one." – **Interviewee A**

However, the changes of HIA could happen if the satisfaction factor could not be established, whether on the personnel's side or the management's side.

"I think usually when the changes happened, basically the personalities are not satisfied with what they are doing or in the company. If somebody is happy with their job, I'm sure they will continue because they have no strings attached." – **Interviewee B**

"The common factors that result in the frequent changes of CAE is he or she cannot perform well or he/she has committed some breach of their ethics of work." – **Interviewee C**

"I can see that one of the common factors for the frequent changes is that the Head of Internal Audit is unsuitable for the company. Perhaps his or her way is too transparent to query any doubtful transactions for the company, when the top management feel that the query is unnecessary." – **Interviewee F**

Dissatisfaction could also happen if HIA is unable to understand his/her role in adding value for the PLCs.

"I believe that most of the top management want a Head of Internal Auditor (HIA) who is really competent in auditing jobs, but at the same time possesses a certain degree of tolerable judgement on the company's financial reporting...Tolerable judgement means that there are certain transactions that may always seemed questionable. But, having queried the same questions every year and have gotten explanations from related division, I think that there is no need to query it anymore. Bear in mind that part of our objectives is to add value and improve the company's operations" – **Interviewee F**

Based on the interview results, this research has decided to employ turnover of HIA as the proxy variable for Sub-Hypothesis 2b as follows:

H2b: High turnover frequency on HIA indicates a higher tendency towards the likelihood of FFR.

4.5   Attitude

Interview results reveal that most of the interviewees (5 out of 6) viewed attitude as one of the factors towards FFR in the Malaysian context.

"I'm very much assured that attitude is one of the considerations. I mean having a bad attitude, whatever it is; it will be considered right for a fraudster even in manipulating the financial reporting." – **Interviewee A**

"Yes, definitely. They are a lot. One example is greed as I've already mentioned earlier." – **Interviewee D**

"Definitely. If a person has bad intention towards the actions, he or she will be doing that." – **Interviewee E**

123

"Yes, but attitude must come with opportunity, which provides ways to commit fraud." – **Interviewee F**

Based on the interview results, this research considers attitude as one of the fraud-risk factors to indicate the likelihood of FFR among Malaysian PLCs.

4.5.1 Interviewees' Perspective on Historical Financial Restatements (HFRTs) and Management Integrity

Historical financial restatement times (HFRTs) were used as a proxy variable when Lou and Wang (2009) sought to measure attitude from the Fraud Triangle Model (Cressey, 1953). They believed that HFRTs can represent management integrity; therefore attitude among Taiwanese PLCs. Therefore, using the same proxy, this research intended to measure management integrity and attitude through HFRTs among Malaysian PLCs. Interviewees may agree or disagree with the use of HFRTs. Their justifications were important to verify whether HFRTs are fit to be used or there is any other proxy variables that may replace HFRTs. However, most of the interviewees (5 out of 6) agreed that HFRTs can reflect on management integrity.

"I tend to agree with this because Bursa Malaysia is responsible for all listed companies. They have to ensure that material inaccuracy for any public listed companies does not happen. But if there is a case there is high possibility that shareholders may feel unhappy because it is in a way a company that belongs to the shareholders; and it means the management and board of directors are not running or not administering the company good enough to prepare the financial reporting, which I think will reflect not only integrity of the management, but also the company as a whole." – **Interviewee A**

"Yes, if it is technical errors in financial reporting, I think it is acceptable. If it is well-planned manipulation of the financial report, of course this is a very serious case, which demands no pardon to that." – **Interviewee C**

"I think that financial restatements can reflect management integrity in most of the cases. As far as enforcement division's actions are concerned, some of the fraud cases like Transmile Bhd. are subject to financial restatement." – **Interviewee D**

> *"Financial restatements can reflect management integrity. Most of the financial restatement cases are caused by inaccurate financial information, which I am confident is due to Executives' errors or audit committee's oversight."* – **Interviewee E**

Thus, not all HFRTs happen because of bad intention. HFRTs could have happened accidentally, without any bad intention to commit FFR in the Malaysian PLCs. Internal auditor or audit committee oversights are among the examples. Other examples are caused by adoption, amendment or improvement to suit with the new Malaysian Financial Reporting Standards (MFRSs).

> *"But we must bear in mind that sometimes material inaccuracy is accidentally caused by internal audit or audit committee oversights. I would like to say that the Malaysian Code of Corporate Governance 2012 urges the audit committee to ensure financial statements comply with financial reporting standards."* – **Interviewee F**

> *"Not all financial restatements reflect management integrity. The majority is due to adoption of new Malaysian Financial Reporting Standards (MFRSs), amendments or improvements. So we are just complying. So, if you adopt new financial practices this is a different picture. But, that is what is acceptable to the current market practice. Sometimes there are old school accountancies versus new school accountancies/practices. Or, between the Commonwealth-based accounting practices and the American-based accounting practices."* – **Interviewee B**

Based on the interview results, HFRTs is considered as a suitable proxy variable for Sub-Hypothesis 3a which is stated as follows:

H3a: High HFRTs indicate higher a tendency towards the likelihood of FFR.

4.5.2 Interviewees' Perspective on the Reflection of Executive and Non-Executive Directors' Attitude from Malaysian PLCs' Annual Reports

In order to confirm that HFRTs are a feasible proxy to measure Malaysian PLCs' attitude, another question was asked to the interviewees. This question intended to locate the possibility of having any other proxies to measure Executive and Non-Executive Directors' attitude based on data (financial and non-financial) from Malaysian PLCs' annual reports.

Interview results reveal that none of the interviewees suggested suitable proxy variables that can measure Executive and Non-Executive Directors' attitude. These results leave HFRTs as the most suitable proxy variable to measure Malaysian PLCs' attitude. However, most of the interviewees did not deny the fact that financial and non-financial information from annual reports may reflect management attitude among Malaysian PLCs. In addition, they agreed that individuals' attitude cannot be judged by annual reports. Therefore, HFRTs is applicable for organisational perspectives (top management in Malaysian PLCs) rather than individual perspectives (Executive and Non-Executive Directors).

> *"Executive and Non-Executive, in my opinion is 'part and parcel' of the company. As such, whatever your attitude; whatever your opinion, which may be negative to the company, may affect or give a negative perception towards the company. As such, it is important that all directors, for that matter executive and non-executive, have the right attitude and only issue a statement which does not have negative implication on the company or negative interpretation towards the company."* – **Interviewee A**

> *"Yes, the reporting of financial & non-financial data from Malaysian PLCs' annual reports reflects the maturity and level of voluntary disclosure (corporate governance) of the Executives & Non-Executive from Malaysian PLCs."* – **Interviewee B**

> *"Yes, it can be a threat of integrity for the members of the Board."* – **Interviewee C**

> *"We can't judge a person's attitude based on annual report. But we can draw management attitude from a whole form of annual report. HFRT is the best example."* – **Interviewee E**

> *"From my experience, you can't judge a person's attitude based on annual report. But you can predict attitude of the management as a whole from annual report."* – **Interviewee F**

Based on the interview results, HFRTs remain as the suitable proxy variable to measure Malaysian PLCs' attitude through management integrity as stated in Sub-Hypothesis 3a.

4.6   Rationalisation

Interview results revealed that all interviewees agreed that rationalisation is one of the fraud-risk factors that can lead towards FFR among Malaysian PLCs. In fact, one of the interviewees viewed rationalisation as a companion factor for attitude, which was exactly proposed by Cressey (1953) in the Fraud Triangle Model. Rationalisation draws Executive or Non-Executive Directors to manipulate financial reports because they can justify their wrongdoing for whatever reasons that they have. This factor provides sufficient justifications for fraudsters. Therefore, rationalisation should be restricted to the highest level of Malaysian PLCs, which are the CEO and BODs in consultation with external auditors; and followed by proper accounting treatment. One good example of rationalisation is a prosecution on false reporting involving a PLC's Executive Directors concerning the utilisation of the company rights issue proceeds.

> *"I see rationalisation is the companion factor of attitude. So for this question, my answer is yes. As an example, if I were to take a bundle of A4 paper for my personal use, I can justify that I deserve it because I'm the Head of Department and have the right to take it home. I can always provide reasons for any actions even though those actions are unethical. So, the same principle applies when executives or non-executives, they manipulate financial reporting. They can justify their wrongdoing for whatever reasons that they have. For instance, 'as the senior director for the company, I believe that I have full authority to take the company's remunerations in advance'."* – **Interviewee A**

> *"To me, rationalisation needs to be or should be restricted to the highest level. That means the CEO and Board of Directors and in consultation with external auditors and proper accounting treatment. Rationalisation should be within the financial procedures or the MFRSs. Not to create (what we call) your own personal agenda. It shouldn't be tolerated."* – **Interviewee B**

> *"Yes, I agree. I think so. People always have reasons to justify their dishonest actions. So, there is no surprise in rationalising their dishonest actions. One good example is a prosecution on false reporting involving a PLC's executives concerning the utilisation of the company rights issue proceeds. They thought that they hadn't committed any offences since they were executives for the company."* – **Interviewee D**

"Yes, I agree. There are thousands of reasons can be given under the rationalisation concept. One good example is that the person could have said, 'It is for the good sake of the company'." – **Interviewee E**

"Well, I agree. Based on my personal experience, when we imposed any audit query, we would get so many reasons, which sometimes we never thought of. As part of our professional code of conduct, we should review every single reason without any prejudice or biasness and be open for any valid explanations. However, if the same mistake occurs quite frequently, even it is a minor one; we must cautiously consider any possibility of fraud on that. So, yes...rationalisation must come as support statements or back-up for any fraudsters." – **Interviewee F**

Based on these results, this research accepts Hypothesis 3 as stated below:

H3: Attitude/rationalisation indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs

4.6.1 Interviewees' Perspective on the Changes in Accounting Policies

Like any other listed companies, Malaysian PLCs are allowed to change accounting policies within Generally Accepted Accounting Principles (GAAP). However, changes of accounting policies must comply with MFRS' requirements (MFRS, 2013). There is a possibility that changes of accounting policies can be manipulated by fraudulent PLCs. Adoption of different valuation methods is one example to manipulate changes (Dhaliwal *et al*., 1982). Thus, it is important to verify if changes of accounting policies among Malaysian PLCs are related to the likelihood of FFR. The interview also aimed to get general ideas on the acceptable period for Malaysian PLCs to perform the changes.

Interview results revealed that changes of accounting policies were considered acceptable if there are valid reasons and a good intention for them. Among the reasons are to comply with legal requirements, to improve financial reporting style and to cope with the current needs in accounting policies, such as asset depreciation or amortisation.

"Having these changes, I'm sure there is a reason for it. Taking it positively, we knew financial reporting that is introduced by Bursa is with regard to transaction and it is towards a positive intention to ensure that all listed companies do so." – **Interviewee A**

"Our company, we do not change the policies as we like; because of the corporate governance, we strictly follow what is adopted by the Securities Commission. We comply with Bursa's requirements. So it is a non-issue to us. When we change, it will change due to legal requirement. We only change due to legal requirement, not to change the financial picture to favour us." – **Interviewee B**

"It depends more on the accounting policy, not purposely changing the style of accounting reports. So they have to follow the financial reports requirement." – **Interviewee C**

"I think that most of the PLCs change their accounting policies to improve their financial statements just for a better reporting style." – **Interviewee D**

"Some of the accounting policies, such as asset depreciation or amortisation, can be reviewed from time to time to cope with the current needs." – **Interviewee E**

However, most of the interviewees thought that any changes in accounting policies are

reasonable if the changes happen only every (say) five years.

"As I said, changing every year may result in shareholders to have a negative impact on the company and it may be also highly suspicious to the performance of the company. But if there is a need for an accounting policy to be changed, it might be seen normal, if the changes have taken place in every probably once in every five years." – **Interviewee A**

"So, a PLC actually cannot change accounting policies every year. Frequent changes need justifications and voluntary disclosures in the financial reporting to all stakeholders immediately through quarterly reporting. So you cannot simply change financial (what we call) policies because you want to hide certain things from the market or your shareholders." – **Interviewee B**

"As for me, I would rather be concerned if the company change the accounting policies every three years or less than five years. This is like ample period for certain accounting policies to show their effectiveness. Just nice; not too long and not too short; and then I don't think any financial reporting period which is less than five years can really drive the company to change the accounting policies." – **Interviewee D**

"If the changes happen in every five years, it would be fine. If changes take place before that, the company must have provided good justifications. Generally, it's normal to change the accounting policies." **– Interviewee E**

"I must say that these actions would give negative impression on the company, if the changes are frequent. However, if let's say the changes are once in every five years, that's a normal step, if well-justified." **– Interviewee F**

Therefore, this research accepts changes in accounting policies as a suitable proxy variable for Sub-Hypothesis 3b as stated below:

H3b: Frequent changes in accounting policies indicate a higher tendency towards the likelihood of FFR.

4.7 Capability/Competence

Interview results reveal that all interviewees shared the same perspective that capability/competence is one of the fraud-risk factors that can lead to FFR among Malaysian PLCs. Capability/competence is considered as a necessary factor to commit FFR because FFR could not happen if fraudsters do not have capability/competence, even though they have the opportunity. As a result, capability/competence is regarded as the real challenge for Non-Executive Directors in BODs of Malaysian PLCs. This fraud-risk factor is in contrast with integrity and honesty in preparing financial reporting. Fraudsters should have crucial skills to gain capability/competence in committing FFR. Thus, they can be considered as 'clever' because manipulating financial reporting is not an easy job, especially in PLCs.

"Of course, I have confidence in this and I believe in this very well; and that is the real challenge for non-executive directors in Board of Directors to oversee and conduct the company's performance and evaluate whether the company is actually properly managed or not." **– Interviewee A**

"Yes, integrity and honesty of lead executives or non-executives are utmost important in preparing financial reporting. Bursa's regulations are frequently reviewed and updated to identify the weaknesses and enhanced reporting techniques or requirements." – **Interviewee B**

"I think I will answer yes, because capability or competence is one of the crucial skills to manipulate financial reporting. You have to be good enough in order to manipulate financial reporting. Only clever people can do the manipulation." – **Interviewee D**

"Yes. To me, capabilities or competency is the compulsory factor to manipulate financial reporting. You might have the opportunity, but if you are not capable or competent, you can't manipulate financial reporting." – **Interviewee E**

One of the examples of capability/competence among Malaysian PLCs is figures' manipulation on financial reporting, such as accounts receivable. Another example is the ability to create a new account to hide suspicious transactions, which is best explained by Special Purpose Vehicles (SPVs') among Malaysian PLCs. High literacy in computers is also one of these examples.

"We actually should be able to obtain sufficient capabilities in doing our work. So, the same concept is applicable to anybody who wants to manipulate financial reporting. They must have sufficient capabilities such as ability to manipulate accounts receivable or ability to create a new account to hide suspicious transactions. So this is what I have in mind." – **Interviewee A**

"For instance, there are some fraud cases involving figures' manipulation in financial reporting. I think it's not easy to be creative, but then a lot of people are trying to be creative nowadays." – **Interviewee D**

"Again, whoever that has high literacy capability or competence in computers would have such advantages for the manipulation of financial reporting." – **Interviewee F**

In addition, Interviewee E believed that good teamwork (collusion) and a systematic strategy are the crucial factors to enhance capability/competence. In Chapter 2 (Section 2.1.5.3), this situation was referred as 'a sophisticated concealment strategy' to explain the element of competence in Crowe's Fraud Pentagon Model (Crowe, 2011).

> *"Nowadays, I believe that for a manipulation to happen, a good teamwork has to be established. Let say only two people are involved, still they can form a good team. In order to manipulate financial reporting, they must have planned a systematic strategy, which will create an advantage situation for them. That is what I meant by capability or competency."* **– Interviewee E**

In fact, some of the interviewees believed that capability/competence is among the most critical factors that can lead towards FFR in Malaysian PLCs.

> *"I think capability or competency is the critical factor. As PLCs in developing country, transparency is one of the favourite issues. From the financial reporting perspective, people's judgement on the quality of the report is based on how transparent the company can provide the financial performance. Therefore, Malaysian PLCs are fully aware that every important aspect with regards to financial reporting must be accounted in. But, as we can see, fraud cases are still happening. That is why I believe that these fraudsters must be capable or competent to manipulate financial reporting because it is not an easy job."* **– Interviewee E**

Based on the interview results, this research accepts capability/competence as one of the fraud-risk factors that can lead towards FFR among Malaysian PLCs as stated in Hypothesis 4:

H4: Capability/competence indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs

4.7.1 Interviewees' Perspective on Undeclared Subjective Judgements in Annual Report

Previous research studies link capability/competence with the ability to manipulate certain financial variables such as sales, account receivables, doubtful accounts and inventory (Loebbecke *et al*., 1989; Wright & Ashton, 1989; Green, 1991; Schilit, 1993). The subjective nature of the judgements involved with these accounts makes them more difficult to audit. Thus, interviewees' perspective on the relationship between undeclared subjective judgements in annual report (such as policies on doubtful debts and account receivable) and FFR need to be justified before a hypothesis on this matter can be tested.

All interviewees agreed that it is an issue if a Malaysian PLC does not spell out its policy on doubtful debts and accounts receivable. Malaysian PLCs that have subsidiaries are potentially executing this action. Undeclared policy on doubtful debts and accounts receivable also implies that the PLCs would have something to hide.

> "*Well, if a Malaysian PLC does not spell out its policy on doubtful debts, then I would consider it is a problem. For a PLC that has its subsidiaries, it is highly possible that policies of doubtful debts and accounts receivable related to the subsidiaries are not spelled out.*" – **Interviewee A**

> "*Yes, this is an issue. In fact, the current disclosure requirements for asset impairment on Trade or Other Receivables are mandatory.*" – **Interviewee B**

> "*Yes this is an issue. Dishonest in doing account instead of deficit, they show profit account. Of course this is a very bad practice.*" – **Interviewee C**

> "*I must say that any doubtful debts and account receivable are mostly stated in financial review section of the annual report. However, if a public listed company doesn't declare these in annual reports, there is possibility that the company would have something to hide on.*" – **Interviewee D**

> "*Of course it will be an issue. Usually, policies on doubtful debts and account receivable are disclosed in summary of significant accounting policies, which can be found in notes to the financial statements. Through my experience, the least information that a PLC can provide on this kind of policies is to state one sentence, 'trade and other receivables are stated at cost less allowance for doubtful debts'. If the policies are not clear or not being explained at all, negative implications on those particular accounts could have been occurred not only among auditors, but also among shareholders.*" – **Interviewee E**

> "*Of course there will be an issue. One of our checklists is to review doubtful debts and account receivable. So, if these accounts are not properly explained or even disclosed, there is high possibility that the company wants to amend financial performance, which I believed is not in good shape.*" – **Interviewee F**

Based on the interview results, undeclared policy on doubtful debts and account receivable among Malaysian PLCs is considered as a suitable proxy variable for Sub-Hypothesis 4a as follows:

H4a: Undeclared policies on doubtful debts and accounts receivable indicate a higher tendency towards the likelihood of FFR.

4.7.2 Interviewees' Perspective on the Weaknesses of Financial Performance among Malaysian PLCs

A question on the interviewees' perspective and concern whether Malaysian PLCs would explain all weaknesses of financial performance was also asked. The ultimate goal of this question was to get interviewees' perspective on any possible ways for Malaysian PLCs to minimise or hide the weaknesses on financial performance in annual reports. Capability/competence can be associated to SPVs as one of the possible mechanisms to hide PLCs' weaknesses such as debt. The postulate has been made because most Malaysian PLCs will have subsidiaries to represent diversification of their business. There is a high possibility that some Malaysian PLCs will set up SPVs together with their subsidiaries for certain projects or programmes.

Based on preliminary data screening on several Malaysian PLCs' annual reports from 2004 to 2013, it has been noticed that details of financial reports for SPVs, which could also be referred to as subsidiaries, are not disclosed. Thus, interviewees' perspective whether Malaysian PLCs would explain all weaknesses of financial performance was important for this research. Interviewees' perspective on this matter represents an indication of general concerns that there are mechanisms and possibilities for Malaysian PLCs to minimise or hide their weaknesses. This research chooses SPVs financial reports as the potential mechanisms towards the likelihood of FFR. Interview results show that most of the interviewees (4 out of 6) believed that not all weaknesses are fully explained.

> *"Well...generally, I would think not all weaknesses of financial performance are fully explained. There is no company that I've known of that hasn't had any financial weaknesses. As PLCs market volatility and business orientation are part of the determinant factors for healthy financial performances."* — **Interviewee A**

> *"Not all weaknesses are fully explained. My concern is depending on the subject of interest of mine. As an internal auditor, my concerns are various."* — **Interviewee F**

On the other hand, other interviewees believed that weaknesses of financial performance are fully explained by Malaysian PLCs.

> *"Ok, here I think any weaknesses or setback on financial performances are done or communicated quarterly. You know our Quarterly Reporting; we have to report to the Securities Commission and Bursa in every quarter. So, you have to explain and PLCs are encouraged to voluntarily explain setbacks and anticipated variances, whether favourable or unfavourable, through the Quarterly Financial Reporting channel. So that's why when you report every quarter, so everybody is kept on your toes. So that by the time you have the annual report, you can see first, second, third and fourth quarter whether all these make sense; the cumulative impact for the whole year. So there is sufficient check every quarter."* — **Interviewee B**

> *"As far as financial reporting is concern, I would say 'yes'. At the beginning of the annual report, there is a statement by directors and statutory declaration to declare true and fair view for the financial statement. For us as external auditors, we form an independent opinion based on our audit on the financial statement."* — **Interviewee E**

Despite these differences, there is a pattern showing that explanation of the weaknesses plays an important role to avoid curiosity among BODs. If the explanation is not convincing enough, a concern of the weaknesses of financial performance will arise.

> *"There would be a time when the company suffers from global recession or capital market manipulation, which are beyond our control. So, if the reasons of the weaknesses are basically understandable, then I would say that they must be explained accordingly. Otherwise the BODs and shareholders might have that concern and this where under Bursa Malaysia requirements, the minority shareholders are always to be looked into for their interest."* — **Interviewee A**

> *"If they can explain well of their weaknesses in the financial performance, as Board of Directors we can accept their explanation."* — **Interviewee C**

> *"However, as long as Listing Requirements are being followed or the procedures have been followed, we can't really say that the weaknesses have not been explained."* — **Interviewee D**

> *"But, if there are some weaknesses that obvious to us and are not fully explained, we would have that concern."* — **Interviewee E**

Based on the interview results, this research considers no access to SPVs' financial reports as an indication of weakness of financial performance among Malaysian PLCs. Thus, Sub-Hypothesis 4b for this research is confirmed as follows:

H4b: No access to SPV's financial report indicates a higher tendency towards the likelihood of FFR.

4.8   Arrogance

Interview results reveal that the majority of interviewees (4 out of 6) agreed that arrogance is one of the fraud-risk factors in Malaysian PLCs. The thought that they will never get caught when committing FFR means these fraudsters are considered to possess arrogance. Arrogance can also be reflected in an autocratic management style, which gives absolute power to access all PLCs' information.

> "*Yes, I think arrogance can be one of the factors. From my experience, there are some fraudulent offenders that consume arrogance character in their reactions to our enforcement actions. I believe some of them may think that they will never get caught in manipulating financial reporting, especially by us. These people always practise autocratic management style in the company, which give them absolute power to access all the company's information.*" – **Interviewee D**

There is an interesting fact that arrogance is more suitable to be categorised within attitude. Moreover, arrogance is more suitable for politicians who have been appointed as executive or non-executive directors in Malaysian PLCs. However, it is unlikely to see CEO as celebrities in Malaysian PLCs, as described by Crowe (2011). The main reason is that most of the CEOs in Malaysian PLCs are more traditionally experienced and different from young executives. As a result, arrogance might suit the chairman of BODs who is a politician and also has a certain degree of power to influence the Malaysian PLCs' decision.

"If that is the case, I think arrogance can lead them. Maybe there are some executives who have these characteristics, which I think is much more suitable to be categorised into 'attitude'. In the Malaysian context, arrogance might likely suit to the directors who are politically connected. I mean if an executive or non-executive director in GLCs is directly or indirectly connected to the politicians who have significant power to influence the company, he or she could be given extra privileges by the chairman of BODs, which is normally a politician, for certain tasks. Maybe ride over some of the management decisions or everything regarding company's financial concerns must be approved by him or her. He or she would feel arrogant in this situation, and I believe that he or she could do almost anything, even manipulating financial reporting." – **Interviewee E**

"Yes, it can be. But in Malaysian context, I don't think CEO is seen as a celebrity. Most of the CEOs are more than 40 years old and their appearances are different from young executives. Arrogance might suit the chairman of BODs who is a politician, which we are aware that they have a certain degree of power to influence the company's decision." – **Interviewee F**

Meanwhile, two interviewees disagreed that arrogance is one of the fraud-risk factors in Malaysian PLCs. They believed that arrogance does not happen in Malaysian PLCs. One of the reasons is that arrogance will only lead Malaysian PLCs towards negative implications, so arrogance does not work for that situation. Another reason is that appropriate punishment by Bursa Malaysia and SC can control arrogance as one of the potential fraud-risk factors in Malaysian PLCs.

"Personally, I would say that arrogance doesn't work in association/company for that matter. When you have that sort of attitude, the likelihood that you're willing to receive advice, recommendations or suggestion from others will be nullified...and it may be turn into one directional meeting, discussion and so on; whereby an arrogant chairman for that matter will be tapped in members of the board, and will finally lead to a negative implication including financial reporting's manipulation. So, arrogance or attitude of being arrogant doesn't work not only in the company, but in organisation and in any activities involving other members." – **Interviewee A**

"No, I don't think so because the punishment is very severe. It involves a jail term. It involves at least Ringgit Malaysia (RM) 3 million. Now, who wants to play the fool with that? So, I think severe appropriate punishment, to answer your question, can control people's arrogance. People's behaviour can be changed by appropriate punishment." – **Interviewee B**

Based on the interview results, this research accepts arrogance as one of the suitable fraud-risk factors in predicting the likelihood of FFR among Malaysian PLCs. Therefore, Hypothesis 5 is confirmed as follows:

H5: Arrogance indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs

4.8.1   Interviewees' Perspective on CEO Duality

CEO duality refers to the same person being the CEO and chairman of BODs in the same PLC. As explained in Chapter 2, arrogance is one of the fraud-risk factors for Crowe's Fraud Pentagon Model (Crowe, 2011). Crowe (2011) refers to arrogance as the attitude of superiority and entitlement. Therefore, this research uses CEO duality as one of the proxies to measure arrogance. All interviewees agreed that CEO duality will cause negative implications in Malaysian PLCs. The main issue is separation of power, whereby Executive Directors are the CEO and Non-Executive Directors should be appointed as the chairman of the BODs in Malaysian PLCs. CEO duality opens up a high-risk situation towards FFR because accountability and transparency in deliberating major decisions for Malaysian PLCs can be questioned. A clear separation of power between Executive and Non-Executive Directors will not only avoid conflict of interest but also ensure more effective and impartial decision-making to implement the best decisions in doing business.

> "*Mmm...having the two positions by a person, I have no doubt that there are implications. So, by right, there should be a separation of power or authority between the Executive and Non-Executive Directors in PLCs. What needs to be addressed and concerned is on the accountability and transparency, which are actually the issues that have to be seriously looked into if the same person is to hold two positions for the company. I would say that it is high risk because the chairman has all the advantages in the board of the company and if he were to execute as a CEO, the tendency of fraudulent and negative intention may happen fraudulently.*" – **Interviewee A**

138

> *"For corporate governance purposes, it is best practice you must separate the role of CEO and Chairman because CEO is an executive post and the Chairman role is normally non-executive. Together, you'll have more effective and impartial decision-making to implement the best decisions in doing business."* – **Interviewee B**

> *"Yes, because as a CEO he would have executed the company business and he can approve in the Board's meeting to justify his action. So this will cause conflict of interest."* – **Interviewee C**

> *"I think there will be negative implications if this thing happens. The same person for the top posts will always have absolute power in the decision-making process of the company."* – **Interviewee D**

Apart from CEO duality, multiple directorship (being a chairman of BODs in more than one PLC) is common practice among Malaysian PLCs. The same individuals are allowed by Bursa Malaysia to be appointed as the chairman of the BODs to a maximum number of five Malaysian PLCs. However, this research does not view multiple directorship as having driven Malaysian PLCs towards FFR, since the chairmen do not hold the position of the CEO in the same PLCs.

> *"Yes. Conflicts of power will arise. There must be a clear separation of power between executive directors and non-executive directors. I'm sure that the best person to be appointed as the chairman of BODs is a non-executive director. I would say that the majority of Malaysian PLCs are not having the same person as CEO and chairman of BODs. Most of the PLCs would have different individuals as CEO and Chairman of BODs for the companies. However, there are common practices to appoint the same person as chairman of BODs in more than one PLC. After all, Bursa Malaysia's Listing Requirements allow the same person to be appointed as the chairman of BODs to a maximum number of 5 companies."* – **Interviewee E**

> *"Definitely. There is a total domination of power in this case. He or she can control the company. But I doubt that majority of Malaysian PLCs have the same person as CEO and chairman of BODs. I can barely see them. I think becoming a chairman of BODs for multiple Malaysian PLCs at the same time is a common practice here."* – **Interviewee F**

Based on the interview results, this research accepts CEO duality as a suitable proxy variable for Sub-Hypothesis 5a, which stated:

H5a: CEO duality indicates a higher tendency towards the likelihood of FFR.

4.8.2   Interviewees' Perspective on the Appointment of a CEO or Chairman of BODs who is also a Politician

It is a common practice to appoint politicians as the CEOs or chairmen of BODs in Malaysian PLCs. The involvement of politicians has triggered curiosity for this research on the possibility of domination in making major decisions in BODs meetings for Malaysian PLCs. Therefore, a question on this matter was asked to get a general perspective on whether the appointment of politicians will be an issue for Malaysian PLCs or not.

Interview results suggested that opinions were split on whether such appointments are on issue or not. Three interviewees believed that the appointment of politicians as the CEOs or chairmen of BODs will be an issue for Malaysian PLCs. The main issue from the appointment of politicians is power. There is a high tendency that the politicians might run Malaysian PLCs as a political party. This scenario could drive the PLCs towards FFR, particularly when the politician is appointed as the CEO. Therefore, politicians should preferably to be appointed as chairman of BODs rather than CEO in Malaysian PLCs.

> "*I think preferably, a politician is not a good choice to be appointed as a CEO.*" – **Interviewee C**

> "*The main issue here is power. If a politician is appointed as the CEO or chairman of the BODs, there is a concern that the politician might run the company as a political party. Most of the cases, politician is being appointed as the chairman of BODs, not as the CEO. You must have deep knowledge about the company's operation and core businesses to be appointed as CEO. Therefore I doubt that most of the politician is being appointed as CEO. But for the post as BODs' chairman, it is necessary if the company represents majority of the government interest such as GLCs.*" – **Interviewee E**

"Well, I would rather say that if there is a case of the politicians' involvement in PLCs, most of them are normally appointed as the chairman of BODs; not as the CEO. Based on my observation, most of the BODs' chairmen are Independent Non-Executive Directors to ensure that there is a separation of the chairmen's role and CEO roles. To be fair, whoever holds the BODs chairmanship is potentially liable for any issue...so, there will always be some issues if a politician is appointed as the chairman of BODs." – **Interviewee F**

On the other hand, others believed that the appointment of politicians as the CEOs or chairmen of BODs will not be an issue for Malaysian PLCs. The main reason is the appointed politicians should be able to understand their roles as the CEO or chairman of BODs in Malaysian PLCs. Therefore, there should not be any differentiation between politicians and non-politicians. In addition, as a major shareholder, there is also a need to protect the government interest, especially in Government-Linked Companies (GLCs). As a result, in most cases, government officials' representatives have been appointed as the chairmen of the BODs, which are usually politicians.

"Having a politician as CEO or chairman of the Board of Directors, from my personal opinion, there should not be any differentiation between a politician and a non-politician. The fact that if you understand your role as the CEO or chairman of the Board of Directors, then you should be able to uphold justice and also uphold the right by virtue of being the CEO of the company. It is a huge responsibility. No doubt some may consider having a politician is an advantage, but it all depends on what level of politician you are. If a politician holds a position in a party, which would be an added advantage because any fraudulent matter in a PLC will indirectly affect that particular person in his political career. But having an ordinary politician as a CEO, does not make any difference. That is my personal opinion. Because either you tie the two together or you will have one as a loose factor" – **Interviewee A**

"It is actually the major shareholders' decisions or actions. In our case, our company is rather unique in Malaysia, or maybe in the world. Although we are a Malaysian PLC, the State Government is the major shareholder in order to protect the majority interest of the state's people. Since the State Government is the major shareholder; therefore, the Head of State Government, which is the Chief Minister is the Chairman for the PLC. So, his role is to protect the interest of people in our state. We are unique in the sense although we are PLC, but we carry out business activities in a very public-private manner." – **Interviewee B**

> *"Well, to answer your question it depends on how transparently the meeting is being conducted. If the politician has sufficient knowledge or qualification or academic background with regards to the GLCs' core operations, I think there wouldn't be any issues. After all, Listing Requirement has stated that a Malaysian PLC director can hold up to 5 directorships in PLCs. As for me, I think we both know that most of the Government-Linked Companies (GLCs) adopt these rules. Technically, as a major shareholder for GLCs, government officials' representatives must be appointed as the chairman of the BODs, which is usually politically-connected"* – **Interviewee D**

The interview results provide a clear indication that some Malaysian PLCs' Executive and Non-Executive Directors believed that there are possibilities of FFR if politicians are appointed as the CEO or chairman of the BODs in Malaysian PLCs. Thus, this research perceives that the appointment of politicians as the CEO or chairman of the BODs in Malaysian PLCs may indicate a higher tendency towards the likelihood of FFR as stated in Sub-Hypothesis 5b as follows:

H5b: A CEO and/or Chairman of BODs in Malaysian PLC who is also a politician indicates a higher tendency towards the likelihood of FFR

4.9   Malaysian Specific Findings – Arrogance, Ignorance, Greed and Determination

Since this research adopted a semi-structured interview method, a few questions were asked that sought interviewees' general perspectives. One of these open questions intended to discover the most critical factor that can lead Executives or Non-Executive Directors in Malaysian PLCs to manipulate financial reports based on Malaysian specific environment. If interviewees' answers were similar with the existing fraud-risk factors from the Fraud Models (i.e. incentive, pressure, opportunity, attitude, rationalisation, capability/competence and arrogance), the second question would follow.

The second question intended to trigger interviewees' perspectives on any other fraud-risk factors that they thought might be suitable in the Malaysian context. These two questions have resulted in suggesting specific findings in the Malaysian context. Moreover, these specific results were also derived from personal observations during the process of interviews.

4.9.1 Additional Proxy Variable to Measure Arrogance

During the interview sessions, this research found another proxy variable that can be used to measure arrogance among CEOs in Malaysian PLCs. This proxy variable is the number of CEOs' pictures in Malaysian PLCs annual reports. The idea of considering this proxy variable was initially triggered from several observations in interviewees' offices, which were decorated with high-quality images of CEOs' pictures. In addition, Interviewee A (who is a CEO in a Malaysian PLC) frequently remarked on his contributions to the PLC. He also shared his numerous of achievements and bibliographies, which made him considered as an expert in his role. Following this, a glance through particular PLC's annual reports for the year 2012 and 2013 indicated that pictures of Interviewee A were printed 25 times in the 2012 annual report and 40 times in the 2013 annual report.

Most of the pictures emphasised the participation of Interviewee A in various PLC's activities, such as presenting cheques on behalf of the PLC, launching ceremonies, having discussions with State Executives, signing new agreements, ground-breaking ceremonies, site visiting, chairing a meeting and being photographed with children.

These high-quality pictures were printed in different sizes. There were pictures on smaller scales (i.e. five pictures per page) and larger scales [i.e. full pictures of Interviewee A standing in corporate suit in two main sections of the annual reports, which are (1) the 'CEO's Message'; and (2) 'CEO's Profile']. Other pictures involved Interviewee A with the members of BODs, as well as the management team.

In short, it can be summarised that most of the pictures of Interviewee A were taken during corporate social responsibility (CSR) programmes. Following these observations, examination of 1,600 Malaysian PLCs annual reports also revealed similar emphasis on the CEOs' role as the main character in Malaysian PLCs. Although the number of CEOs' pictures in annual reports might seem literally simple and not necessarily imply the 'attitude of superiority', this research perceives that the proxy variable could be one of the significant indications of arrogance in the Malaysian context. In addition, the proxy variable is able to project documented evidence based on CEOs' images in Malaysian PLCs to gain publicity and treat themselves as celebrities (Crowe, 2011).

However, this research also considers the possibility that some CEOs might use this proxy variable to minimise their appearance, including their arrogance in order to hide FFR activities. This is because close examination of 1,600 Malaysian PLCs' annual reports also indicated that the number of CEOs' pictures in fraudulent PLCs was less than in non-fraudulent PLCs. These results suggest that some CEOs in fraudulent Malaysian PLCs preferred to maintain low profiles, despite being charged with FFR offences by Bursa Malaysia and Securities Commission Malaysia (SC). Thus, this research views number of CEOs' pictures in annual reports in both dimensions as stated in the following sub-hypothesis:

H5c: Frequent number of CEOs' pictures in annual reports indicates the more arrogant a CEO is and a higher tendency towards the likelihood of FFR; or lesser number of CEOs' pictures in annual reports indicates a higher tendency for the CEOs to hide their arrogance and FFR activities

4.9.2   Ignorance

FFR could also be understood by defining the critical factors that lead to the action. Thus, interviewees' perspectives that were based on the Malaysian corporate culture and environment, which are different from the Western culture (where the Fraud Models were developed) are significantly important. Interviewees' answers would be vital in discovering new fraud-risk factors that might fit the Malaysian context. Ignorance was among the critical fraud-risk factors suggested by the interviewees.

> *"Based on my experience, usually these kinds of decisions are done, arising from greed or ignorance in the manipulation of financial reporting; and also if the corporate governance or the Board of Directors are ignorance of the proper practices."* – **Interviewee B**

> *"It can only happen with the help of the entire Board; because for instance in our Boards, it consists of Independent and Non-Independent Directors. The Independent Directors are there to make sure their knowledge and expertise from their outside (what we call) their involvement in business environment contribute when Non-Independent director make certain decision; because some of the Non-Independent Directors they are (what we call) State-appointee. For instance, the State Financial Officer, the State Secretary. So they might not know, they might be ignorant of what is happening outside of business world; and there is where a very qualify, professional independent director can balance this up. So that the Board makes the proper decision."* – **Interviewee B**

Ignorance represents "lack of knowledge or information" (Oxford, 2008: 502). Ignorance can stifle learning, as an ignorant person believes that they are not ignorant. Kruger and Dunning (1999) elucidate an ignorance situation as a person who falsely believes that he or she is knowledgeable and will not seek out clarification of his or her beliefs, but rather rely on his or her ignorant position.

As a result, this person may also reject valid but contrary information, neither realising its importance nor understanding it (Kruger & Dunning, 1999). Ignorance consists of the absence or distortion of true knowledge (Smithson, 1985). A research study conducted by Schwartz (2001) on the nature of the relationship between corporate codes of ethics and behaviour among employees, managers, and ethics officers at four large Canadian companies showed that ignorance is one of the reasons for non-compliance with the corporate codes. Thus, ignorance could be a factor that can lead to FFR among Executive or Non-Executive Directors in Malaysian PLCs. Fraudsters may manipulate financial reports to their advantage, based on their confidence that ignorant Executive or Non-Executive Directors will not conduct a thorough check on the financial reports.

As such, FFR could happen in such a way that these ignorant Executive or Non-Executive Directors are not fully aware of this action. In a dynamic business environment, it is essential that Executive and Non-Executive Directors devote sufficient time to update their knowledge and enhance their skills through appropriate training and education programmes. This will enable Executive and Non-Executive Directors to sustain their active participation in BODs' deliberations. The updates should cover on a timely basis reading materials, as well as latest developments on their roles and responsibilities (Bursa Malaysia, 2014).

Bursa Securities require Executive and Non-Executive Directors to attend the Mandatory Accreditation Programme (MAP) during a financial year. Executive and Non-Executive Directors are also encouraged to attend various professional programmes to keep them abreast with the current changes in guidelines issued by Bursa Malaysia and SC. The BODs of Malaysian PLCs must on a continuous basis, evaluate and determine the training needs of its directors (Bursa Malaysia, 2015c).

In addition, these professional programmes also update them on the latest developments in the Malaysian capital market to complement their services and judgement to better serve the PLC. Malaysian Code of Corporate Governance 2012, which was issued by SC (SC, 2012) also imposes a requirement on appropriate continuing education programmes for Executive and Non-Executive Directors in Malaysian PLCs as stated below:

"The board should ensure its members have access to appropriate continuing education programmes."   (Malaysian Code of Corporate Governance, 2012:18)

Lack of fraud awareness training can consequently stimulate ignorance among Executive and Non-Executive Directors as they will suffer inability to detect the likelihood of FFR. Thus, this research suggests a sub-hypothesis to measure ignorance as stated below:

H6a: Insufficient corporate governance courses for Executive and Non-Executive Directors indicates a higher tendency towards the likelihood of FFR

Additionally, some PLCs are perceived to intentionally use ignorance as their excuses for delaying the submission of annual reports, since ignorance is associated to 'never aware', 'did not perceive' and 'forgot' (Schwartz, 2001). As a result, this research also suggests another proxy variable to measure ignorance as follows:

H6b: Delays in submitting annual financial reports as at financial year-end indicate higher tendency towards the likelihood of FFR.

4.9.3   Greed

Another specific finding suggested by the interviewees is greed. The following paragraphs discuss their perspectives on greed.

"Based on my experience, usually these kinds of decisions are done, arising from greed or ignorant in the manipulation of financial reporting; and also if the corporate governance or the Board of Directors are ignorance of the proper practices." – **Interviewee B**

"From my personal experience, I would say that there are different factors that might lead these offenders, but more of that is similar pattern on most of the cases, which is greed". – **Interviewee D**

Generally, greed is associated with "desire for possessions, wealth or power" (Oxford, 2008: 441). Chapter 2 recognises greed as part of the personal financial pressure that relates to employees' motivation to commit fraud (Rae & Subramaniam, 2008). When Cressey (1953) categorised non-sharable pressure as one of the Fraud Triangle factors, he recognised greed as a component of 'status gaining' which means living beyond one's means. Following this, other scholars also viewed greed as one of the pressure components (Albreacht *et al.*, 2004, 2008; Kassem & Higson, 2012). Greed has also been recognised as an example of attitude that drives Executive or Non-Executive Directors to manipulate PLC's profit for better financial performance. For example Interviewee E said:

"Both of the fraud cases were caused by directors' greed attitude who was trying to manipulate company's profit for better financial performance". – **Interviewee E**

Statements from these interviewees confirmed that greed is part of the individuals' attitude that creates personal pressure towards FFR. There is a high possibility that greed could become one of the fraud-risk factors in the Malaysian context. The possibility is based on the 'KPMG Malaysia Fraud, Bribery and Corruption Survey 2013' report (KPMG, 2014) which has acknowledged greed as among the most common factors for fraud.

A number of research associated greed with PLCs' remunerations (see Visser & Sunter, 2002; Garratt, 2005; Lazarides *et al*., 2008; Sheenan, 2009; Dandira, 2011; Sheehan, 2012; Salazar & Raggiunti, 2014). Specifically, issues on Executive Directors' remunerations in relation to PLCs' performances have been continuously debated until today. Therefore, Executive Directors' remunerations can be a measurable proxy variable for greed. Furthermore, information on Executive Directors' remunerations can be accessed through the Directors' Remunerations' Section in annual reports. As such, this research proposes a specific sub-hypothesis to measure greed as stated below:

H7a: Executive Directors' remunerations indicates a higher tendency towards the likelihood of FFR.

4.9.4 Determination

Another specific finding is determination, as suggested by Interviewee F:

> *"Well, Malaysian PLCs are now operating in a complex global business environment. Many factors could have influenced people to commit fraud. But among all other factors, I see that determination is the most crucial or critical one. To my knowledge, even though a Malaysian PLC has established efficient internal control environment, if a person is determined to commit fraud, he or she will go for it. Maybe that person has determined to test Bursa Malaysia and the Audit Committee's ability in detecting any unusual facts or figures from financial reporting."* – **Interviewee F**

Determination explains "the action of establishing or deciding something" (Oxford, 2008: 270). One of the well-known theories for determination is Self-Determination Theory (SDT), which was been developed by Deci and Ryan (1985). SDT conceives of human motivation and personality, concerning people's inherent growth tendencies and their innate psychological needs (Deci & Ryan, 1985). SDT focuses on the degree to which an individual's behaviour is self-motivated and self-determined (Deci & Ryan, 1985; 2002).

SDT is among other research studies on psychology that define determination as a positive emotion that involves persevering towards a difficult goal in spite of obstacles (see Smith, 1991; Kirby *et al*., 2014). These studies have also confirmed that determination is not just a cognitive state of attitude, but rather an emotion that drives the affective state (Clore *et al*., 1987). Based on these statements, this research suggests that determination has a powerful effect on the fraudster's mind from a negative emotion rather than positive emotion. Determination can motivate them to commit FFR although other fraud-risk factors (i.e. incentive, pressure, opportunity, rationalisation, capability/competence and arrogance) are well-controlled by a particular PLC. This phenomenon is best described in the field of emotion research, which is heavily focused on negative emotions and the action tendencies that they encourage (Fredrickson, 1998).

Thus, there is a possibility that determination could become one of the fraud-risk factors in the Malaysian context. However, this research finds that determination is almost impossible to be measured through financial and non-financial information from Malaysian PLCs' annual reports due to its subjective nature. This is because observational and experimental research on people's behaviour over a certain period of time is a suitable method to measure determination.

This statement is supported by one example of how Deci (1971) observed people's behaviour through laboratory and field experiments in investigating the effects of external rewards on intrinsic and extrinsic motivation of SDT. These methods suggest that determination is best measured through observation of people's behaviour (in this research referred to as 'Executive and Non-Executive Directors in Malaysian PLCs').

As such, financial and non-financial information are unable to provide a suitable proxy variable to measure determination, particularly for quantitative analysis. Therefore, determination factor is not investigated in this research.

4.9.5   Summary of Measurable Specific Findings

Having discussed the above, ignorance and greed can be emphasised as additional fraud-risk factors, which are measurable for quantitative analyses (Chapter 6 and 7) in this research. However, FFR could not possibly happen without opportunity. Wells (2001) claimed that fraud (in this research referred to as 'FFR') does not occur in isolation. All crimes, including FFR are a combination of motive and opportunity (Wells, 2001; Dellaportas, 2013). Having connected this claim with interviewees' perspectives on incentive (Section 4.2), this research views greed as part of an individual's attitude and also a component of incentive, which creates a motive for fraudsters to commit FFR. On top of that, ignorance among Executive and Non-Executive Directors widens the scope of opportunity for fraudsters. Having connected these factors (i.e. incentive, opportunity and attitude) from the Fraud Triangle Model (Cressey, 1953), co-existence relationships of ignorance and greed between these factors are illustrated in Figure 4.2.
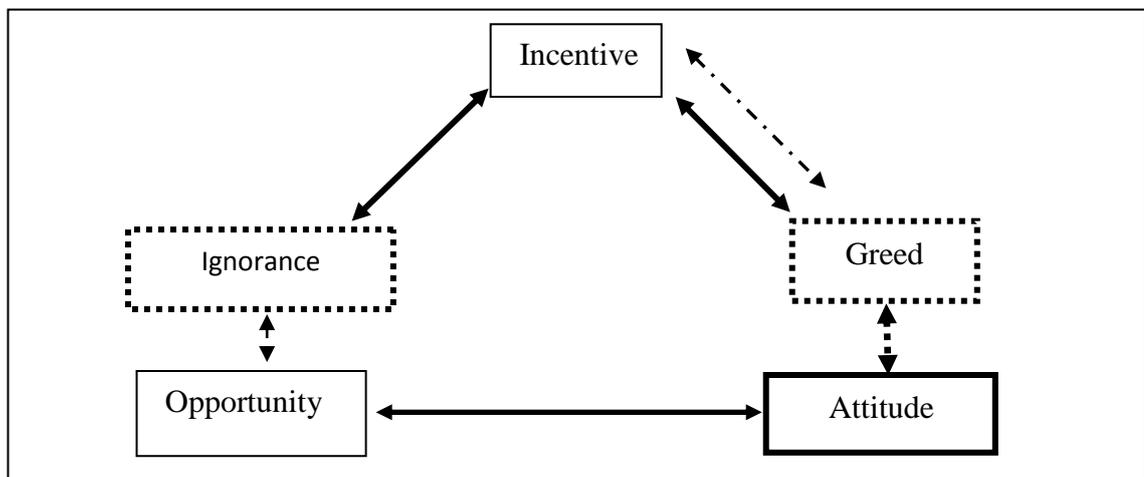
Figure 4.2: Co-existence Relationships of Greed and Ignorance between Incentive, Opportunity and Attitude.

Additionally, based on the interview results, this research has found that attitude (shown in bold in Figure 4.2) has a strong effect on fraudsters' actions to commit FFR among Malaysian PLCs. Most of the interviewees emphasised attitude rather than any other existing fraud-risk factors (i.e. incentive, pressure, opportunity, rationalisation, capability/competence and arrogance). Attitude can be associated with integrity, which some of the interviewees believed can prevent FFR among Malaysian PLCs.

> "*Manipulation of financial reporting...of course this is monitored strictly by Bursa Malaysia (of financial reporting) on all listed companies; but it may happen as I said. No doubt it's negligible as far as Malaysian companies are concerned; but if the right person as I said earlier, who are transparent, who are honest, who actually understand his role as a Board of Director may not result in manipulating financial reporting. So it goes with the integrity of the person and what he holds as his principle being a person, especially when he holds a position in a listed company. I would say integrity... and the fact that you understand your role that you are holding your position on trust of the shareholders.*" – **Interviewee A**

4.10   Conclusions

This chapter has discussed various interviewees' perspectives on the fraud-risk factors from the Fraud Models. These perspectives were obtained from internal parties (i.e. prepares and reviewers of financial reports) as well as external parties (i.e. regulators) with regard to Malaysian PLCs. As a result, their perspectives have explored the suitable fraud-risk factors in the Malaysian context. Table 4.2 summarises these findings.

Table 4.2: The Interview Findings

Sub-Hypothesis	Fraud-risk Factor	Relevant Fraud Models (Fraud Triangle – FT; Fraud Diamond – FD; Crowe's Fraud Pentagon – FP)	Validation of Proxy Variable's Suitability from Interview Results
H1a: High growth in Malaysian PLCs indicates a higher tendency towards the likelihood of FFR.	Incentive	FT, FD & FP	Yes
H1b: High leverage on Malaysian PLCs indicates a higher tendency towards the likelihood of FFR.	Pressure	FT, FD & FP	Yes
H2a: Lower percentage of outside members (Independent Non-Executive Directors) in BODs indicates a higher tendency towards the likelihood of FFR	Opportunity	FT, FD & FP	Yes
H2b: High turnover frequency of HIA indicates higher tendency towards the likelihood of FFR.	Opportunity	FT, FD & FP	Yes
H3a: High historical financial restatements times (HFRTs) indicate a higher tendency towards the likelihood of FFR.	Attitude	FT, FD & FP	Yes
H3b: Frequent changes in PLCs' accounting policies indicate a higher tendency towards the likelihood of FFR.	Rationalisation	FT, FD & FP	Yes
H4a: Undeclared policies on doubtful debts and accounts receivable indicate a higher tendency towards the likelihood of FFR.	Capability/ Competence	FD & FP	Yes
H4b: No access to SPV's financial reports indicates a higher tendency towards the likelihood of FFR.	Capability/ Competence	FD & FP	Yes

Sub-Hypothesis	Fraud-risk Factor	Relevant Fraud Models (Fraud Triangle – FT; Fraud Diamond – FD; Crowe's Fraud Pentagon – FP)	Validation of Proxy Variable's Suitability from Interview Results
H5a: CEO duality indicates a higher tendency towards the likelihood of FFR.	Arrogance	FP	Yes
H5b: A CEO and/or Chairman of BODs in Malaysian PLC who is also a politician indicates a higher tendency towards the likelihood of FFR	Arrogance	FP	Yes

In addition, interviewees' perspectives also suggested additional fraud-risk factors (i.e. ignorance and greed) as specific results for the Malaysian context. These fraud-factors have resulted in the development of additional hypotheses and sub-hypotheses with relevant proxy variables. Table 4.3 summarises these findings.

Table 4.3: Additional Sub-Hypotheses and Proxy Variables from Interview Findings

Sub-Hypothesis	Fraud-risk Factor	Relevant Fraud Models (Fraud Triangle – FT; Fraud Diamond – FD; Crowe's Fraud Pentagon – FP)	New Proxy Variables from Interview Results
H5c: Frequent number of CEOs' pictures in annual reports indicates the more arrogant a CEO is and a higher tendency towards the likelihood of FFR; or lesser number of CEOs' pictures in annual reports indicates a higher tendency for the CEOs to hide their arrogance and FFR activities.	Arrogance	FP	Number of CEOs' pictures in annual reports
H6a: Insufficient corporate governance courses for Executive and Non-Executive Directors indicate a higher tendency towards the likelihood of FFR.	Ignorance	FT	Number of Corporate Governance Courses for Executive and Non-Executive Directors

Sub-Hypothesis	Fraud-risk Factor	Relevant Fraud Models (Fraud Triangle – FT; Fraud Diamond – FD; Crowe's Fraud Pentagon – FP)	New Proxy Variables from Interview Results
H6b: Delays in submitting annual financial reports as at financial year-end indicate a higher tendency towards the likelihood of FFR	Ignorance	FT	Days taken by Malaysian PLCs to submit annual reports
H7a: Executive Directors' remunerations indicate a higher tendency towards the likelihood of FFR.	Greed	FT	Executive Directors' remunerations

Although ignorance (for H6a and H6b) and greed (for H7a) have been regarded as components of incentive, opportunity and attitude, this research addresses both factors as separate factors from the Fraud Triangle Model. This research predicts ignorance and greed to have significant effects on the likelihood of FFR among Malaysian PLCs. Thus, both factors can exist independently from the Fraud Triangle Model. In summary, these interviews provided an exceptionally valuable input for the research, particularly on the real world and practical perspectives with regard to FFR and suitable fraud-risk factors in the Malaysian context. Therefore, as illustrated in Figure 4.3, the interview findings made three significant contributions pertaining to FFR and the fraud-risk factors, particularly among Malaysian PLCs. These contributions are:

(1) Exploring suitable fraud-risk factors (i.e. incentive, pressure, opportunity, attitude, rationalisation, capability/competence and arrogance) from the Fraud Models (i.e. the Fraud Triangle Model, the Fraud Diamond Model and Crowe's Fraud Pentagon Model) in the Malaysian context;

(2) Discovering two additional fraud-risk factors (i.e. ignorance and greed) as Malaysian specific results; and

(3) Suggesting four measurable proxy variables (i.e. number of CEOs' pictures in annual reports, number of Corporate Governance Courses for Executive and Non-Executive Directors, days taken by Malaysian PLCs to submit annual reports and Executive Directors' remunerations) in four additional sub-hypotheses (i.e. H5c, H6a, H6b and H7a).

Based on interview results, this research has developed seven hypotheses and fourteen sub-hypotheses to be undertaken in quantitative analyses.
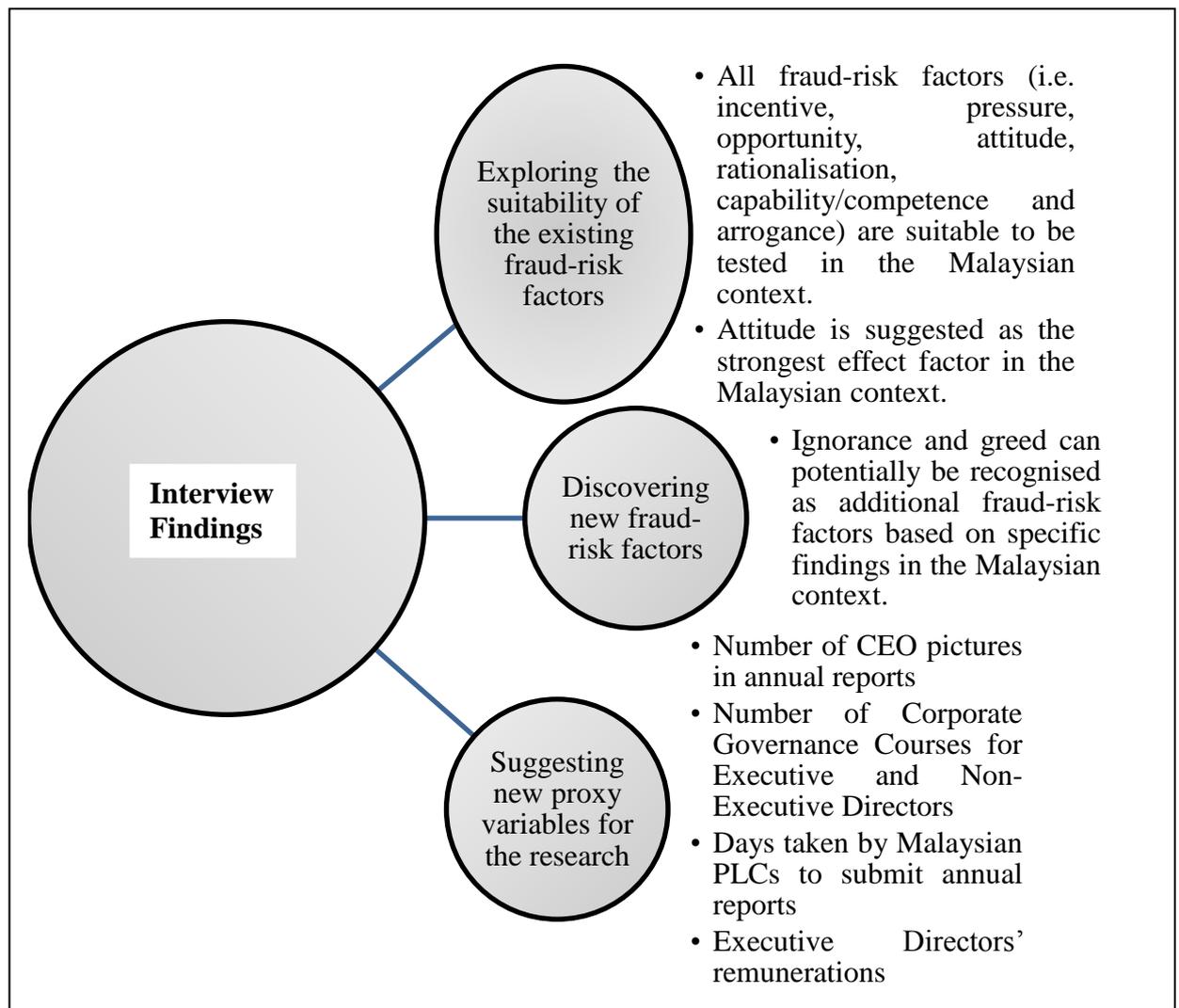
Figure 4.3: Contributions of Interview Findings.

CHAPTER 5: HYPOTHESES AND CONCEPTUAL MODELS DEVELOPMENT

As explained in Section 2.3 of Chapter 2, this research has identified five pre-developed hypotheses and ten pre-developed sub-hypotheses based on literature gaps on Fraud Models (the Fraud Triangle Model, the Fraud Diamond Model and Crowe's Fraud Pentagon Model) in Malaysian. Table 5.1 summarises these pre-developed hypotheses and sub-hypotheses according to relevant explanatory variables and proxy variables. In order to explore the suitability of these pre-developed hypotheses and sub-hypotheses in the Malaysian context, interviews were conducted. Interview findings[25] have not only explored these pre-developed hypotheses and sub-hypotheses, but have also suggested two additional hypotheses and four sub-hypotheses to be undertaken in this research. As a result, this research has developed seven hypotheses and fourteen sub-hypotheses in total.

This chapter discusses the development of seven hypotheses and fourteen sub-hypotheses in relation to the four research questions (RQs) and seven sub-research questions (SRQs). This research employs fourteen sub-hypotheses for hypotheses testing. Nine sub-hypotheses are measured from organisational perspectives (i.e. H1a, H1b, H2a, H2b, H3a, H3b, H4a, H4b and H6b). This is because the majority of FFR cases occur with participation, encouragement, approval, and knowledge of the top management teams (Rezaee, 2005). Meanwhile, five sub-hypotheses are measured from individual perspectives (i.e. H5a, H5b, H5c, H6a and H7a). Generally, the organisational perspectives involve top management (as a team) in Malaysian Public-Listed Companies (PLCs), while the individual perspectives involve Executive and/or Non-Executive Directors as individuals.

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[25] Details of interview results were discussed in Chapter 4 (Interview Findings – Exploration of Relevant Fraud-Risk Factors in the Malaysian Context).

Table 5.1: Pre-Developed Hypotheses and Sub-Hypotheses for the Research

Pre-Developed Hypothesis	Sub-Hypothesis	Explanatory Variable	Proxy Variable	References (Pertaining to Previous Research Studies & Proxy Variables)
H1: Incentive/Pressure indicates higher a tendency towards the likelihood of FFR among Malaysian PLCs	H1a: High growth in Malaysian PLCs indicates a higher tendency towards the likelihood of FFR.	Incentive	Growth (Return on Assets)	Cressey, 1953; Loebbecke & Willingham, 1988; Loebbecke *et al.*, 1989; Bell *et al.*, 1991; Beasley 1996; Bell & Carcello, 2000; Lou & Wang, 2009; Skousen *et al.*, 2009; Manurung & Hadian, 2013.
	H1b: High leverage in Malaysian PLCs indicates a higher tendency towards the likelihood of FFR.	Pressure	Leverage	Cressey, 1953; Chow & Rice, 1982; Duke & Hunt, 1990; Press & Weintrop, 1990; Dechow *et al.*, 1996; Beneish,1997; Lou & Wang, 2009; Skousen *et al.*, 2009; Manurung & Hadian, 2013; Aghghaleh *et al.*, 2014.
H2: Opportunity indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H2a: Lower percentage of outside members (Independent Non-Executive Directors) in Board of Directors (BODs) indicates a higher tendency towards the likelihood of FFR.	Opportunity	Composition of BODs	Cressey, 1953; Beasley, 1996; Dechow *et al.*, 1996; Beasley *et al.*, 2000; Dunn, 2004; Skousen *et al.*, 2009; Aghghaleh *et al.*, 2014.
	H2b: High turnover frequency of Head of Internal Auditor (HIA) indicates a higher tendency towards the likelihood of FFR.		Turnover of HIA	Cressey, 1953; St. Pierre & Sorenson *et al.*, 1983; Anderson, 1984; Loebbecke *et al.*, 1989; Stice, 1991; Beasley *et al.*, 2000; Lou & Wang, 2009; Skousen *et al.*,2009.

158

Pre-Developed Hypothesis	Sub-Hypothesis	Explanatory Variable	Proxy Variable	References (Pertaining to Previous Research Studies & Proxy Variables)
H3: Attitude/rationalisation indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H3a: High historical financial restatements times (HFRTs) indicate a higher tendency towards the likelihood of FFR.	Attitude	HFRTs	Cressey, 1953; Moriarty & Livingston, 2001; Aier *et al*., 2005; Lou & Wang, 2009.
	H3b: Frequent changes in PLCs' accounting policies indicate a higher tendency towards the likelihood of FFR.	Rationalisation	Changes in Accounting Policies	Cressey, 1953; Dhaliwal *et al*., 1982.
H4: Capability/competence indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H4a: Undeclared policies on doubtful debts and accounts receivable indicate a higher tendency towards the likelihood of FFR.	Capability/ Competence	Undeclared Policies on Doubtful Debts and Account Receivable	Wolfe & Hermanson, 2004; Daroca & Holder, 1985; Green, 1991; Stice, 1991; Persons, 1995; Vanasco, 1998; Fanning & Cogger, 1998; Omar & Din, 2010.
	H4b: No access to Special Purpose Vehicles (SPVs') financial reports indicates a higher tendency towards the likelihood of FFR.		No Access to SPV's Financial Reports	Wolfe & Hermanson, 2004; Albrecht *et al*., 2004; Carey & Stulz, 2007.

Pre-Developed Hypothesis	Sub-Hypothesis	Explanatory Variable	Proxy Variable	References (Pertaining to Previous Research Studies & Proxy Variables)
H5: Arrogance indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H5a: Chief Executive Officer (CEO) duality indicates a higher tendency towards the likelihood of FFR.	Arrogance	CEO duality	Loebbecke *et al.*, 1989; Beasley, 1996; Beasley *et al.*, 1999; Abbott *et al.*, 2000; Dunn, 2004; Skousen *et al.*, 2009; Crowe, 2011.
	H5b: A CEO and/or Chairman of BODs in a Malaysian PLC who is also a politician indicates a higher tendency towards the likelihood of FFR		A CEO or/and Chairman of BODs Who is also a Politician	Pfeffer, 1981; Mintzberg, 1983; Pettigrew, 1992; Dawson, 1994; 2001; Buchanan & Badham, 1999; Crowe, 2011.

This chapter is organised as follows. Section 5.1 discusses the development of hypotheses and sub-hypotheses based on RQ1, which is related to the fraud-risk factors from the Fraud Triangle Model (Cressey, 1953). Section 5.2 concentrates on hypotheses and sub-hypotheses developed from RQ2 pertaining to the fraud-risk factors from the Fraud Diamond Model (Wolfe & Hermanson, 2004). Section 5.3 explains hypotheses and sub-hypotheses based on RQ3, related to the fraud-risk factors from Crowe's Fraud Pentagon Model (Crowe, 2011). Section 5.4 discusses hypotheses and sub-hypotheses related to RQ4, regarding additional fraud-risk factors discovered from the interview results. Section 5.5 suggests four conceptual models (CMs) based on the seven hypotheses and fourteen sub-hypotheses. Section 5.6 concludes this chapter by summarising all the hypotheses and sub-hypotheses according to research objectives (ROs), RQs and SRQs. Figure 5.1 illustrates the structure of Chapter 5.
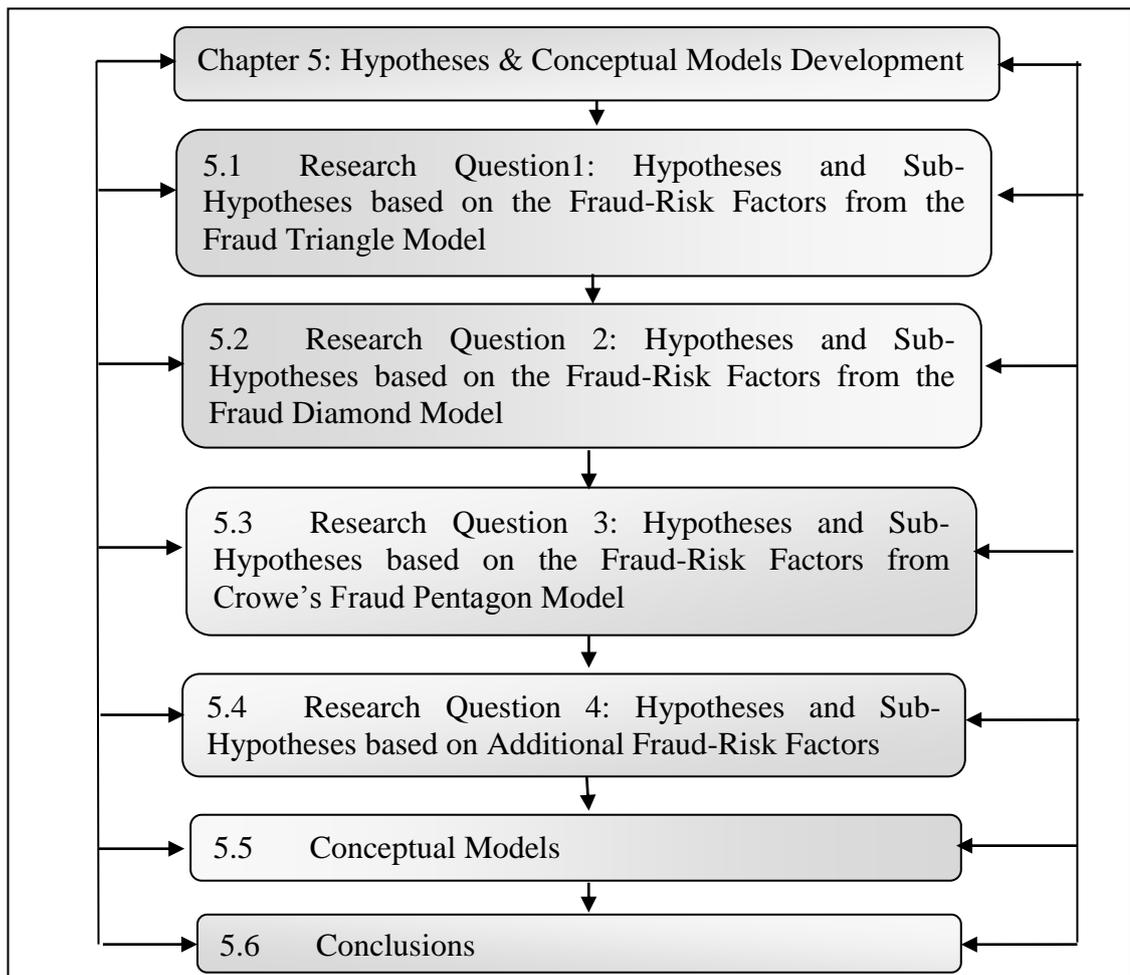
Figure 5.1: Structure of Chapter 5.

161

5.1 Research Question1: Hypotheses and Sub-Hypotheses based on the Fraud-Risk Factors from the Fraud Triangle Model

Hypotheses and sub-hypotheses from the Fraud Triangle Model (Cressey, 1953) are developed based on RQ1 as stated below:

RQ1: To what extend do the fraud-risk factors from the Fraud Triangle Model (Cressey, 1953) adequate to predict the likelihood of FFR among Malaysian PLCs?

In order to explore each fraud-risk factor from the Fraud Triangle Model, three SRQs (SRQ1 to SRQ3) are asked according to these factors (i.e. incentive, pressure, opportunity, attitude and rationalisation).

5.1.1 Hypothesis 1 – Incentive/Pressure

Hypothesis 1 (H1) is developed based on SRQ1 as follows:

SRQ1: To what extend does incentive/pressure adequate to predict the likelihood of FFR among Malaysian PLCs?

Chapter 2 (Section 2.1.5.1.1) has explained theoretical aspects of incentive/pressure[26] from the Fraud Triangle Model (Cressey, 1953). From a positive perspective, incentive encourages top management to deliver their best efforts to increase the value of their companies (Albrecht *et al*., 2004). However, incentive could also motivate people to commit fraud. For instance, Albrecht *et al*. (2004) claimed that top management in several fraudulent companies in the United States (US) were endowed with a high value of stock options that made it far more important to keep the stock price increasing than to report financial results accurately (Albrecht *et al*., 2004).

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[26] As explained in Section 2.1.5.1.1 of Chapter 2, this research views both management and employees in Malaysian PLCs as 'agents' since they are answerable to shareholders, who acted as the 'principals'.

A similar situation has also been raised by Abdolmohammadi and McQuade (2002) when they claimed that management in some fraudulent PLCs made investment decisions in risky assets in such a way that their own wealth can be maximised. According to Kim *et al.* (1996), these situations occur when managers' wealth function depends on interests both within and outside the company, creating a potential for conflict of interest. Retrospectively, Cressey (1953) has suggested pressure as a parallel cause of fraud. Based on Cressey's theory, Albrecht *et al.* (2004; 2008) have listed three causes of financial pressure. These causes are (1) non-sharable financial pressures; (2) management or shareholders' pressures; and (3) pressure to meet society's expectation. Results by Albrecht and Albrecht (2002) who found that 95% of the fraud cases were influenced by financial pressures also support the potential impact of pressure towards the likelihood of FFR. Therefore, the following hypothesis is proposed in this research:

H1: Incentive/pressure indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs.

In order to measure H1, two sub-hypotheses are developed by employing suitable proxy variables to represent incentive and pressure. Based on previous empirical research studies, this research suggests Malaysian PLCs' growth as a suitable indicator to measure incentive. In relation to this, two proxy variables are employed, which are (1) return on assets (ROA); and (2) changes in sales growth (Δ Sales). Meanwhile, this research chooses leverage to measure PLCs' financial pressure by using long-term debt-to-equity ratio.

5.1.1.1 Sub-Hypothesis 1a: PLCs' Growth (GROWTH)

Sub-hypothesis 1a (H1a) measures incentive from organisational perspectives. This sub-hypothesis perceives that in an occasion of FFR, fraudulent Malaysian PLCs tend to amend PLCs' performance, particularly on growth in order to present a good image through positive performance to their shareholders.

Although the actual growth is not as good as is stated in financial reports, these PLCs are willing to stand with a fake growth performance to please their shareholders; and hence continue enjoying their incentives. Growth is one of the common proxy variables used to overstate assets and revenues in order to "falsely reflect a financially stronger company by inclusion of fictitious assets costs or artificial revenues" (Wells, 1997: 434). Previous empirical research studies suggest that growth is expected to be associated with the incidence of fraud (see Loebbecke & Willingham 1988; Loebbecke et al. 1989; Bell et al. 1991; Beasley 1996; Bell & Carcello, 2000; Lou & Wang, 2009). However, the vast majority of managers in high-growth PLCs do not commit fraud (Loebbecke & Willingham 1988; Loebbecke et al. 1989; Bell et al. 1991; Beasley 1996; Bell & Carcello, 2000; Lou & Wang, 2009).

Nonetheless, unethical managers may be induced to misstate financial reports when growth slows or reverses in order to maintain the appearance of consistent growth. Such uncertainty may motivate the perpetration of fraud (see Loebbecke & Willingham 1988; Loebbecke et al. 1989; Bell et al. 1991; Beasley 1996; Bell & Carcello, 2000; Lou & Wang, 2009). Loebbecke et al. (1989) found that 29% of frauds in their sample were in high-growth companies. Furthermore, ROA has been continuously used as a proxy variable to measure incentive from the Fraud Triangle Model by recent researchers such as Lou & Wang (2009), Skousen et al. (2009), and Manurung and Hadian (2013).

In specific, this research employs return on assets (ROA) to indicate PLCs' growth. However, aside from using 'gross profit' or 'profit after taxes', this research measures Malaysian PLCs' growth based on 'operating profit', also known as 'earnings before interest and taxes' (EBIT). This research chooses operating profit over gross profit because operating profit is earned from the main business operation and does not include any profit from PLCs' investment.

Operating profit also accommodates PLCs' overheads, which are considered as important factors in determining PLCs' actual income. Furthermore, the efficiency of assets utilisations can be effectively determined (Wells, 1997). In addition, this research also employs changes in sales growth (Δ Sales) as another proxy variable to measure GROWTH. Observing Δ Sales is one of the effective methods that have been practised by some PLCs in offering incentive to their Executive Directors. This is because if incentive is exclusively based on the stock performances or net profits, then the possibility of ignoring Executive Directors' efforts based on performance in sales growth is likely to occur. There are situations, in which PLCs' overall performance seemed to be negative, despite showing better performance in sales growth. Typically, these situations occur due to negative effects on PLCs' share prices, which have been badly hit by financial market downfalls.

In other occasions, overall negative performance could also be caused by higher expenditures and other investment costs that minimise net profits. Thus, according to Coughlan and Schmidt (1985), by linking incentive and sales growth, the Board of Directors (BODs) can tie incentive to measurable results in a manner that protects the Executive Directors from the effects of outside events (i.e. share prices) and inside events (i.e. PLCs' expenditures). Based on these justifications many empirical researchers employed Δ Sales to measure growth (see Singh, 1990; McDougall *et al*, 1994; Weinzimmer *et al*., 1998; Stuart, 2000; Ernst, 2001; Batt, 2002; Kamber, 2002; Artz & Stone, 2006; Delmar, 2006; Gaur & Kesavan, 2009). Therefore, ROA and Δ Sales are employed to measure Malaysian PLCs' growth as stated in the following sub-hypothesis:

H1a: High growth in Malaysian PLCs indicates a higher tendency towards the likelihood of FFR.

5.1.1.2 Sub-Hypothesis 1b: PLCs' Leverage (LEV)

Sub-hypothesis 1b (H1b) measures pressure from organisational perspectives. Previous research studies suggested that financial pressure (including leverage) could result in FFR (see Carcello & Palmrose, 1994; Lys & Watts, 1994; Dechow *et al.*, 1996). Generally, financial pressure is associated with a high-debt structure suffered by PLCs since it shifts the risk from equity owners and managers to debt owners (see Chow & Rice, 1982; Dechow *et al.*, 1996; Beneish, 1997). Chow and Rice (1982) claimed that the potential for wealth transfer from debt holders to managers' increases as leverage increases. Dechow *et al.* (1996) and Beneish (1997) suggested that high leverage firms having debt covenants motivated the earnings manipulation.

Additionally, previous empirical research studies suggested that proximity to debt covenant limits affects the occurrence of FFR (see Carter & Stover, 1991; Latham & Jacobs, 2000a, 2000b). In relation to this, leverage provides a clear picture of the comparison between the long-term and short-term debt of the particular PLC (Wells, 1997). Therefore, this research uses leverage (LEV) as a proxy variable for financial pressure at organisational perspectives.

LEV is employed in several research studies as a proxy variable for closeness to covenants and associated with the existence and tightness of covenants (Duke & Hunt, 1990; Press & Weintrop, 1990). Christie (1990) found LEV was positively correlated with income-enhancing in accounting policies. Persons (1995) related higher LEV with higher potential for violations of borrowing agreements and less ability to obtain loans for additional capital. That is why LEV is one of the financial ratios heavily considered by lending institutions (Wells, 1997). Persons (1995) also suggested that fraudulent companies have higher financial LEV than non-fraudulent companies.

As a result, LEV has been extensively used by researchers in studying PLCs' pressure. Among these researchers were Lou and Wang (2009); Skousen *et al.* (2009); Manurung and Hadian (2013); and Aghghaleh *et al.* (2014) who used LEV to measure pressure based on the fraud-risk factors from the Fraud Triangle Model (Cressey, 1953). Most of them divided the total of long-debt by total assets to measure LEV. However, this research calculates LEV by dividing long-term debt with total equity. This is because equity represents the actual value of PLCs' assets.

Besides, measurement of equity provides an accurate financial position involving PLCs' ownerships by the shareholders. The decision to choose equity over assets is also supported by Hovakimian *et al.* (2001: 22), who concluded that "the tendency of firms to make financial choices that move them toward a target debt ratio appears to be more important when they choose between equity repurchases and debt retirements than when they choose between equity and debt issue. The leverage deficit variables are closely associated with whether debt or equity is repurchased and, in addition, the variables predict the amount that is repurchased." Thus, employing a long-term debt-to-equity ratio will result in providing a meaningful proxy variable to measure LEV. As such, the following sub-hypothesis is proposed for this research:

H1b: High leverage in Malaysian PLCs indicates a higher tendency towards the likelihood of FFR.

5.1.2   Hypothesis 2 – Opportunity

Hypothesis 2 (H2) is developed based on SRQ2 as follows:

SRQ2: To what extend does opportunity adequate to predict the likelihood of FFR among Malaysian PLCs?

Chapter 2 (Section 2.1.5.1.2) has suggested that circumstances can exist to provide opportunity for fraud to be perpetrated (Cressey, 1953). Previous research studies have shown that there is a positive correlation between opportunity to commit fraud and the ability to conceal the fraud (Beasley, 1996; Kassem & Higson, 2012). Thus, understanding the element of opportunity is essential in combating the FFR (Kassem & Higson, 2012; Vona, 2008). Therefore, the following hypothesis is proposed:

H2: Opportunity indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs

In order to measure H2, two sub-hypotheses are developed by employing suitable proxy variables to represent opportunity. As such, (1) composition of Board of Directors (COMBODs); and (2) turnover of Head of Internal Auditor (Δ HIA) are employed as proxy variables for opportunity.

5.1.2.1 Sub-Hypothesis 2a: Composition of BODs (COMBODs)

Sub-Hypothesis 2a (H2a) measures opportunity from organisational perspectives. The relationship between composition of Board of Directors (COMBODs) and the occurrence of FFR is significantly important in accounting research studies. In relation to Agency Theory, Fama (1980) and Fama and Jensen (1983) argued that it is natural for the most influential members of the Board of Directors (BODs) to be the inside members, such as Chief Executive Officers (CEOs) and other internal managers. This is because they have valuable information about PLCs' activities that is obtained from internal mutual monitoring. Such information assists the BODs in being an effective device for decision control (Fama, 1980; Fama & Jensen, 1983). However, the BODs is not effective at decision control unless it limits the decision discretion of individual top managers (Beasley, 1996). As a result, corporate BODs generally include outside members who act as arbiters in disagreements among internal managers and ratify decisions that involve serious agency problems (Fama & Jensen 1983).

168

According to Loebbecke *et al*. (1989) and Bell *et al*. (1991), imbalance COMBODs between the outside members and inside members is regarded as one of the weak internal control environments that allow management to carry out FFR. Consistent with this claim, Beasley (1996) found that non-fraudulent firms have COMBODs with significantly higher percentages of outside members than fraudulent firms.

This finding is supported by other previous research studies, which suggested that fraudulent PLCs have fewer outside members in their COMBODs as compared to non-fraudulent PLCs (Dechow *et al*., 1996; Beasley *et al*., 2000; Dunn, 2004). In this research, outside members are represented by Non-Executive Directors and inside members are represented by Executive Directors. The minimum capacity of Non-Executive Directors in COMBODs reduces the effectiveness of checks and balances, which could provide opportunity for FFR. In the context of Malaysian PLCs, Non-Executive Directors are normally referred to as 'Independent Directors'. Bursa Malaysia (2015c) sets a minimum composition of 1/3 (or 33.33%) for Independent Directors from total COMBODs in Malaysian PLCs, as follows:

"(1) A listed issuer must ensure that at least two directors or 1/3 of the board of directors of a listed issuer, whichever is the higher, are independent directors.

(2) If the number of directors of the listed issuer is not three or a multiple of three, then the number nearest 1/3 must be used." (Chapter 15 – Corporate Governance, Bursa Malaysia, 2015c: 1501).

Generally, COMBODs for a Malaysian PLC include Executive and Non-Executive Directors. Executive Directors involve in operational functions of respective PLC. Therefore, they are regarded as active management. On the other hand, Non-Executive Directors are not directly involved in operational functions of the PLC.

There are two categories of Non-Executive Directors, which are (1) Independent Non-Executive Directors; and (2) Non-Independent Non-Executive Directors. Bursa Malaysia (2015) defines Independent Non-Executive Directors as "a director who is independent of management and free from any business or other relationship which could interfere with the exercise of independent judgement or the ability to act in the best interests of an applicant or a listed issuer. Without limiting the generality of the foregoing, an independent director is one who:

(a) is not an Executive Drector of the applicant, listed issuer or any related corporation of such applicant or listed issuer (each corporation is referred to as "said Corporation");

(b) has not been within the last two years and is not an officer (except as a Non-Executive Director) of the said Corporation. For this purpose, "officer" has the meaning given in Section 4 of the Companies Act 1965;

(c) is not a major shareholder the said Corporation;

(d) is not a family member of any Executive Director, officer or major shareholder of the said Corporation;

(e) is not acting as a nominee or representative of any Executive Director or major shareholder of the said Corporation;

(f) has not been engaged as an adviser by the said Corporation under such circumstances as prescribed by the Exchange or is not presently a partner, director (except as an independent director) or major shareholder, as the case may be, of a firm or corporation which provides professional advisory services to the said Corporation under such circumstances as prescribed by the Exchange; or

(g) has not engaged in any transaction with the said Corporation under such circumstances as prescribed by the Exchange or is not presently a partner, director or major shareholder, as the case may be, of a firm or corporation (other than subsidiaries of the applicant or listed issuer) which has engaged in any transaction with the said Corporation under such circumstances as prescribed by the Exchange." (Chapter 1 – Definitions and Interpretations, Bursa Malaysia, 2015d: 105 - 106).

COMBODs has been used by Skousen *et al*. (2009) and Aghghaleh *et al*. (2014) to measure 'opportunity' from the Fraud Triangle Model. Klein (2002) shows that the more independent BODs are, the less likely earnings management to occur. Therefore, this research also employs the same proxy. Specifically, this research measures percentage of Independent Non-Executive Directors in COMBODs. This research classifies 33.3% and below of Independent Non-Executive Directors as potential Malaysian PLCs that may commit FFR. The value of 33.3% is equivalent to the 1/3 ratio mandated by Bursa Malaysia (2015c). As a result, the following sub-hypothesis is proposed:

H2a: Lower percentage of Independent Non-Executive Directors in Board of Directors (BODs) indicates a higher tendency towards the likelihood of FFR.

5.1.2.2 Sub-Hypothesis 2b: Turnover of HIA (∆HIA)

Sub-Hypothesis 2b (H2b) also measures opportunity from organisational perspectives. Although the vast majority of auditor changes are for legitimate reasons, the risk of audit failure and subsequent litigation is higher during an initial engagement than in subsequent years (Stice 1991; St. Pierre & Anderson, 1984). Sorenson *et al*. (1983) suggested that a client may even change auditors in order to reduce the likelihood of detection of financial statement fraud (in this research is referred to as 'FFR').

Internal auditors are viewed as a first-line defence against fraud because of their knowledge and understanding of the business environment and the internal control structure (Rezaee, 2005). Loebbecke *et al.* (1989) found that 36% of the fraud cases were perpetrated in the first two years of an auditor's tenure. Beasley *et al.* (2000) expose that internal audit existence in fraudulent PLCs was less common than that of non-fraudulent PLCs. High internal auditor turnover reveals that organisational structure of a PLC is unstable. Moreover, internal control components are deficient as a result of high turnover rates of internal auditor.

In Agency Theory (Fama & Jensen, 1983), conflicts between the principal (owner/shareholders) and agent (top management) would normally be justified by the appointment of an independent auditor who will audit the financial reports extensively. However, the auditors' independence is sometimes questioned. According to Lai (2003) and Dontoh *et al.* (2004), the practices of hiring or firing auditors by the management would lead to auditors' dependence on the company that they are auditing. There is an extensive literature on auditor independence issues (see Cotton, 2002; Ronen, 2002; Kopel, 2003a, 2003b; Dontoh *et al.*, 2004; Kinney *et al.* 2004; McMillan, 2004; Rezaee, 2005; Alleyne *et al.*, 2013).

However, it is argued that the auditor's agency problem could not be resolved with the existing rules and regulations (see Cotton, 2002; Kopel, 2003a; Cullinan, 2004; McMillan, 2004; Nixon, 2004; Rezaee, 2005). In the context of Malaysian PLCs, poor internal control has been regarded as one of the most prominent factors contributing to fraud (KPMG, 2014). One of the reasons is caused by the unclear rules of Bursa Malaysia, whereby Malaysian PLCs have absolute rights to terminate their internal auditors. Bursa Malaysia has stated in Chapter 2 (Corporate Governance) of Listing Requirements that:

"(1) A listed issuer must establish an internal audit function which is independent of the activities it audits.

(2) A listed issuer must ensure its internal audit function reports directly to the audit committee." (Bursa Malaysia, 2015c: 1508)

Issues on removal or resignation of internal auditors are not mentioned in Listing Requirements. In opposite, removal or resignation of external auditors have been specifically addressed by Listing Requirements as follows:

"Where external auditors are removed from office or give notice to the listed issuer of their desire to resign as external auditors of listed issuer, the listed issuer must forward to the Exchange a copy of any written representations or written explanations of the resignation made by the external auditors at the same time as copies of such representations or explanations are submitted to the Registrar of the Companies pursuant to section 172A of the Companies Act 1965" (Bursa Malaysia, 2015c: 1507).

The core difference between external auditors and internal auditors is that the external auditors are 'formally' engaged by Malaysian PLCs based on Companies Act 1965. Therefore, external auditors are regarded as 'external' or 'third parties' to Malaysian PLCs. In contrast, internal auditors are employed by Malaysian PLCs and are regarded as part of PLCs' employees. As the employers, top managements have absolute right to terminate any employee who is not in favour of their decisions. This includes the Head of Internal Auditor (HIA). Therefore, this research identifies turnover of the HIA (ΔHIA) as another proxy variable to measure opportunity.

This proxy variable has been used by Lou and Wang (2009) when they observe the number of auditor switches to measure opportunity from the Fraud Triangle Model. Thus, the following sub-hypothesis is proposed:

H2b: High turnover frequency of Head of Internal Auditor (HIA) indicates a higher tendency towards the likelihood of FFR.

5.1.3 Hypothesis 3 – Attitude/ Rationalisation

Hypothesis 3 (H3) is developed based on SRQ3 as follows:

> SRQ3: To what extend does attitude/rationalisation adequate to predict the likelihood of FFR among Malaysian PLCs?

Chapter 2 (Section 2.1.5.1.3) has suggested that fraudsters are able to rationalise a fraudulent act as being consistent with their personal code of ethics (Cressey, 1953). Some individuals possess an attitude, character or set of ethical values that allows them to knowingly and intentionally commit a fraud (Cressey, 1953). Therefore, rationalisation provides a justification of fraudulent behaviour as a result of an employee's lack of personal integrity, or other moral reasoning (Rae & Subramaniam, 2008). In addition, rationalisation is derived from fraudsters' belief that they deserve to earn some rewards, such as money or assets for working hard (see Beasley *et al*., 2000; Albrect *et al*., 2004). Therefore, the following hypothesis is proposed:

H3: Attitude/rationalisation indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs.

In order to measure H3, two sub-hypotheses are developed by employing suitable proxy variables to represent these fraud-risk factors. As such, (1) historical financial restatement times (HFRTs); and (2) frequent changes in accounting policies (ΔACCPOL) are employed as the proxy variables for attitude and rationalisation.

174

5.1.3.1 Sub-Hypothesis 3a: Historical Financial Restatements Times (HFRTs)

Sub-Hypothesis 3a (H3a) measures attitude from organisational perspectives. Since individual attitude is not observable, historical financial restatements times (HFRTs)[27] are used as a proxy variable to measure management attitude. Definition of HFRTs (in some literature referred to as 'financial restatements') is generally viewed as corrections made to the financial statements/reports due to non-compliance with generally accepted accounting principles (GAAP) (see Palmrose & Scholz, 2000, 2004; Efendi *et al*., 2004; Myers *et al*., 2004).

If a PLC has higher frequency of financial restatement, reliability of financial statement is lower, and managers' integrity is queried (Lou & Wang, 2009). Accounting restatements have recently become increasingly common (Aier *et al*., 2005). Research by Moriarty and Livingston (2001) shows that the number of restatements increased from 59 in 1997 to 91 in 1998, and up to 156 in 2000. According to the US General Accounting Office (GAO, 2002), the number of restatements due to accounting irregularities has grown significantly during the past several years.

The high profile cases of HFRTs[28] that were caused by accounting and financial irregularities led to the enactment of the Sarbanes-Oxley Act in 2002 and the adoption of new corporate governance rules for exchange listed firms by the National Association of Securities Dealers Automated Quotations (NASDAQ) in November 2003. In Malaysia, HFRTs cases have continuously received considerable attention from the publics. Table 5.2 displays some examples of HFRTs cases involving Malaysian PLCs.

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[27] This research examines both voluntary and mandatory restatements.
[28] These include Enron and WorldCom in the United States of America (USA).

Table 5.2: Examples of HFRTs cases among Malaysian PLCs

Malaysian PLCs	HFRTs Cases
Aktif Lifestyle Bhd	Directed by the SC to restate its 2002 and 2003 financial Statements.
OilCorp Bhd.	Directed by the SC to restate its 2004 financial statements
Goh Ban Huat Bhd.	Ordered by the SC to reissue its 2004 fourth quarter report after being found overstating the profits by RM121 millions.
Celcom Bhd	The auditor discovered fictitious invoices issued to the Group amounting to RM259.32 million (about USD70 million).

Source: Securities Commission Malaysia, 2016.

Issues of HFRTs among multinational PLCs have affected investors' confidence to invest in Malaysian PLCs. As a result, the Malaysian Code on Corporate Governance (MCCG) was initiated by the SC in 2000 and was subsequently revised in 2007 and 2012. To reduce HFRTs cases among Malaysia PLCs, the MCCG recommends that Independent Non-Executive Directors make up at least 1/3 of the BODs' memberships. Similarly, Section 166A (3) of the Malaysian Companies Act (1965) stipulates that BODs need to ensure that the company's accounts are in accordance with the Malaysian Accounting Standard Board approved accounting standard (known as Financial Reporting Standards effective from January 1, 2006). Additionally, MCCG also recommends BODs to be conversant with PLCs' systems (i.e. the accounting systems) that generate the accounts and financial statements. Therefore, HFRTs are proposed as a proxy variable for attitude in the following sub-hypothesis:

H3a: High historical financial restatements times (HFRTs) indicate a higher tendency towards the likelihood of FFR.

5.1.3.2 Sub-Hypothesis 3b: Changes in the Accounting Policies (ΔACCPOL)

Sub-Hypothesis 3b (H3b) measures rationalisation from organisational perspectives. PLCs may change accounting policies based on some circumstances which are legally allowed by accounting standards.

Therefore, this research predicts that this offers opportunity for a fraudulent PLC to disguise FFR actions through variation of accounting policies. This statement is supported by Dhaliwal *et al*. (1982) who suggested that a company (or PLC in the context of this research) can increase or decrease stated values for various variables by selecting different valuation methods. According to Healy (1985), changing the accounting policies is one of the approaches used by some companies in controlling net income. Healy (1985) also suggested that changing the accounting policies involves the selection of accounting procedures and estimations, which are allowable under GAAP.

With regards to changes of accounting policies, Malaysian PLCs are subject to the requirements by Malaysian Financial Reporting Standard (MFRS, 2013) 108 of the Malaysian Accounting Standards Board (MASB) – "Accounting Policies, Changes in Accounting Estimates and Errors". The standard on consistency of accounting policies is stated in paragraph 13:

"An entity shall select and apply its accounting policies consistently for similar transactions, other events and conditions, unless a MFRS specifically requires or permits categorisation of items for which different policies may be appropriate. If a MFRS requires or permits such categorisation, an appropriate accounting policy shall be selected and applied consistently to each category." (MFRS 108, paragraph 13: 470-471)

However, changes of accounting policies are allowed, only if the change:

(1) "is required by a MFRS; or

(2) results in the financial statements providing reliable and more relevant information about the effects of transactions, other events or conditions on the entity's financial position, financial performance or cash flows." (MFRS 108, paragraph 14: 471)

The importance of monitoring ΔACCPOL is also being highlighted by Bursa Malaysia as stated below:

"The quarterly results and year-end financial statements, before the approval by the board of directors, focusing particularly on:

(i) changes in or implementation of major accounting policy changes;

(ii) significant and unusual events; and

(iii) compliance with accounting standards and other legal requirements."

(Chapter 15-Corporate Governance, Bursa Malaysia, 2015: 1505)

Therefore, frequent changes in the company's accounting policies (ΔACCPOL) are identified as a proxy variable to measure rationalisation as proposed in the following sub-hypothesis:

H3b: Frequent changes in PLCs' accounting policies indicate a higher tendency towards the likelihood of FFR.

5.2 Research Question 2: Hypotheses and Sub-Hypotheses based on the Fraud-Risk Factors from the Fraud Diamond Model

Hypothesis and sub-hypotheses from the Fraud Diamond Model (Wolfe & Hermanson, 2004) are developed based on the RQ2 as stated below:

RQ2: To what extend do the fraud-risk factors from the Fraud Diamond Model (Wolfe & Hermanson, 2004) adequate to predict the likelihood of FFR among Malaysian PLCs?

As explained in Chapter 2 (Section 2.1.5.2), the Fraud Diamond Model (Wolfe & Hermanson, 2004) adds 'capability' as the fourth fraud-risk factor as an expansion of the Fraud Triangle Model (Cressey, 1953).

178

Fundamental concepts of 'capability' were similarly defined by Crowe (2011) in describing 'competence' as one of the fraud-risk factors in Crowe's Fraud Pentagon Model (Crowe, 2011). Therefore, this research refers to 'capability/competence' in a similar definition. As such, SRQ4 is stated as follows:

SRQ4: To what extend does capability/competence adequate to predict the likelihood of FFR among Malaysian PLCs?

Capability/competence represents an employee's ability to override or manipulate internal controls, develop a sophisticated concealment strategy and socially control the situation to his/her advantage (Wolfe & Hermanson, 2004; Crowe, 2011, 2012a, 2012b). Using an international survey by Ernst & Young in 1996, Spollen (1997) reveals that three out of fourteen companies feel that directors and senior management (in this research is referred to as 'Executive Directors') can override controls. Therefore, the following hypothesis is proposed:

H4: Capability/competence indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs

In order to measure H4, two sub-hypotheses are developed by employing suitable proxy variables to represent capability/competence. As such, (1) undeclared policies on doubtful debts and accounts receivable; and (2) no access to the Special Purpose Vehicles (SPVs) financial reports are employed as the proxy variables for this fraud-risk factor.

5.2.1 Sub-Hypothesis 4a: Undeclared Policies on Doubtful Debts and Accounts Receivable (UNDPOL)

Sub-Hypothesis 4a (H4a) measures capability/competence from organisational perspectives. Most literature links capability/competence to the manipulation of certain financial variables in financial reports, such as sales, accounts receivable, allowance for doubtful accounts and inventory (see Loebbecke *et al*., 1989; Wright & Ashton, 1989; Green, 1991; Schilit, 1993). Subjective judgements involving these accounts make them more difficult to audit. According to Feroz *et al*. (1991), Green (1991), Stice (1991), Schilit (1993) and Persons (1995), management may manipulate accounts receivable in many possible ways. In most of the cases, PLCs that involved in FFR activities tend to record sales before they are earned (Persons, 1995).

This is because explanations for accounts receivable and inventory are typically based on subjective judgements involved in estimating uncollected accounts and obsolete inventory (see Person, 1995; Summers & Sweeney, 1998). Thus, Summers and Sweeney (1998) concluded that management may use these accounts as tools for financial statement manipulation. Meanwhile, Loebbecke *et al*. (1989) found that research samples from inventory accounts and accounts receivable were involved in fraud (22% and 14%, respectively). Additionally, many researchers such as Stice (1991), Schilit (1993) and Vanasco (1998) also suggested that management may manipulate inventories for FFR.

Ratio of Accounts Receivable to Sales (Accounts Receivable / Sales) is commonly used in previous research studies (Daroca & Holder, 1985; Green, 1991; Fanning & Cogger, 1998). In mentioning potential manipulation of account receivables, Wells (1997: 137) pointed out that 'the problem of out-of-balance accounts can be overcome by those fraudsters who have total control of a company's accounting system'.

Meanwhile, the GAO report (GAO, 2002) revealed that about 38% of the 919 investigated restatements among US PLCs due to accounting irregularities involved revenue recognition. Most PLCs might opt for accrual basis accounting rather than cash basis accounting, which implies that most business transactions are in credit terms, rather than cash term. As a result, it is common to record a-high ratio of accounts receivable to sales for a PLC. Healy (1985) specifically mentioned net accounts receivable as one of the accounts in financial reports that can potentially be manipulated for earnings management. Healy (1985) also suggested that companies legitimately prefer to reduce the estimation of bad debt expenses by improving credit and collection activities. As such, this research focuses on PLCs' declarations on doubtful debts policies, which involve subjective judgements that relate to accounts receivable.

The decision not to declare these policies can create suspicion against these PLCs that they might have the intention to hide such important information from the public, particularly on doubtful debts. This situation will further suggest the possibility for these PLCs to get involved in fraudulent activities, including FFR. Furthermore, a report by KPMG Malaysia (KPMG, 2014) has stated that failure to provide for doubtful debts is one of the FFR causes among Malaysian PLCs. This report supports a claim made by Wells (1997) who suggests fictitious receivables and failure to write down accounts receivable as bad debts are the two most common schemes involving accounts receivable.

In Malaysia, UNDPOL has been regarded by Bursa Malaysia as one of the serious cases involving FFR. The seriousness of UNDPOL among Malaysian PLCs is proven in a report dated 28 February 2014, issued by Bursa Malaysia. For the purpose of addressing significant cases of UNDPOL in the Malaysian context, some facts from two cases are included in the following paragraphs:

<u>Case 1</u>:

"In the case of Company ST, there was deviation from an unaudited loss after tax and minority interest of RM6 million in the quarterly results of Company ST to an audited loss after taxation and minority interest of RM10.8 million when Company ST issued its annual audited accounts subsequently. The deviation arose primarily due to allowance for doubtful debts of RM3.7 million in the annual audited accounts. There was no reasonable justification for failing to make any provision for doubtful debts in the quarterly results particularly in view of the long outstanding trade debts of more than 18 months, the history of inability to collect and no repayment arrangement with the debtors to support the collectability of the debts when the quarterly results was prepared and submitted. In addition, prior to the finalisation and approval of the quarterly results, the directors were aware of the position of the external auditors of Company ST who had informed the directors prior to the issuance of the quarterly results the necessity of reviewing and providing for doubtful debts which have been outstanding for more than 18months."   (Bursa Malaysia, 2014a: 2-3)

<u>Case 2</u>:

"In another case of Company BK, the deviation was from an unaudited profit after tax and minority interest of RM17.137 million to an audited loss after taxation and minority interest of RM9.486 million which arose primarily due to provision for impairment losses on receivables. Notwithstanding that the company was notified by its external auditors to assess and justify the recoverability of the receivables which were long outstanding, there were significant delays/uncertainty in the repayments and one of its debtors had become a dormant company with negative shareholders' fund, Company BK had failed to make ANY provisions for impairment losses in the quarterly results."
(Bursa Malaysia, 2014a: 3)

182

Based on these discussions, (UNDPOL) is proposed as a proxy variable in the following sub-hypothesis:

H4a: Undeclared policies on doubtful debts and accounts receivable indicate a higher tendency towards the likelihood of FFR.

5.2.2 Sub-Hypothesis 4b: No Access to Special Purpose Vehicles (SPVs') Financial Reports (SPVACC)

Sub-Hypothesis 4b (H4b) also measures capability/competence from organisational perspectives. H4b measures capability/competence from the perspective of Special Purpose Vehicles (SPVs). This research defines SPVs as subsidiary companies with an asset or liability structure and legal status that makes the obligations secure even if the parent companies go bankrupt. SPVs are usually established by some Malaysian PLCs to finance a large project without putting the entire PLCs at risk.

In a paper entitled "Special Purpose Vehicles and Securitisation", Carey and Stulz (2007) characterised SPVs' off-balance sheet into four features, which include (1) no independent management or employees; (2) administrative functions are performed by a trustee who follows specific rules with regard to the receipt and distribution of cash; (3) assets held by SPVs are serviced through a servicing arrangement; and (4) SPVs are structured so that, as a practical matter, SPVs cannot become bankrupt.

The element of capability/competence could exist when SPVs become a way for Malaysian PLCs to hide debts. SPVs could assist parent companies to hide their liabilities in the form of separate accounts, especially when the actual facts show that the parent companies are suffering from high debts. Meanwhile, Albrecht *et al*. (2004) referred to SPVs as 'Special Purpose Entities – SPEs', giving an example of how the financial reports of Enron's SPEs seemed inappropriate, but could not be challenged by Arthur & Anderson, the external auditor at that time.

Essentially, Enron Corporation had established SPEs for the following purposes: (1) to hide debts; (2) to create common equities; and (3) to overstate earnings (Rezaee, 2005). Therefore, SPVs are one of the practical examples of a sophisticated concealment strategy, which was described by Wolfe and Hermanson (2004) in defining capability. Realising that details of SPVs' financial reports are not a mandatory requirement for public disclosure, most of the Malaysian PLCs do not disclose them in annual reports. However, the establishment of SPVs can be determined from the 'Corporate Structure' section in Malaysian PLCs' annual reports. Information from the section suggests that all Malaysian PLCs prepare two types of financial reports, which are (1) group accounts; and (2) subsidiaries' accounts. The question whether these subsidiaries are actually SPVs cannot be confirmed. However, some details from subsidiaries accounts may indirectly indicate that these subsidiaries are actually SPVs. Thus, no access to SPVs' financial reports (SPVACC) is proposed in the following sub-hypothesis:

H4b: No access to Special Purpose Vehicles (SPVs') financial reports indicates a higher tendency towards the likelihood of FFR.

5.3   Research Question 3: Hypotheses and Sub-Hypotheses based on the Fraud-Risk Factors from Crowe's Fraud Pentagon Model

Hypotheses and sub-hypotheses from Crowe's Fraud Pentagon Model (Crowe, 2011) are developed based on the RQ3 as stated below:

RQ3: To what extend do the fraud-risk factors from Crowe's Fraud Pentagon Model (Crowe, 2011) adequate to predict the likelihood of FFR among Malaysian PLCs?

184

As explained in Chapter 2 (Section 2.1.5.3), Crowe's Fraud Pentagon Model is also an expansion of the Fraud Triangle Model with two additional fraud-risk factors, which are (1) competence (also referred to as 'capability' in the Fraud Diamond Model); and (2) arrogance. Since SRQ4 has covered capability/competence, SRQ5 concentrates on arrogance as follows:

> SRQ5: To what extend does arrogance adequate to predict the likelihood of FFR among Malaysian PLCs?

Arrogance or lack of conscience is an attitude of superiority and entitlement on the part of a person who believes that internal controls simply do not personally apply (Crowe, 2011; 2012a, 2012b). In such situation, arrogance may result in the likelihood of FFR. Therefore, the following hypothesis is proposed:

H5: Arrogance indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs.

In order to measure H5, three sub-hypotheses are developed by employing suitable proxy variables to represent arrogance. As such, (1) Chief Executive Directors' duality (CEODUAL); (2) a CEO and/or Chairman of BODs who is also a politician (POLCEO); and (3) frequent number of CEOs' pictures in annual reports (CEOPIC) are employed as proxy variables for arrogance. Sub-hypotheses developments on CEODUAL and CEOPIC are discussed in this sub-section, while CEOPIC will be discussed in the next sub-section. This is because in Chapter 4 (Section 4.9.1), CEOPIC is regarded as part of the Malaysian specific results from the interviews. Therefore, CEOPIC will be discussed with other additional proxy variables.

5.3.1 Sub-Hypothesis 5a: Chief Executive Officers' Duality (CEODUAL)

Sub-Hypothesis 5a (H5a) measures arrogance from individual perspectives, which involves Executive Directors in Malaysian PLCs. Bursa Malaysia defines a Chief Executive (in this research referred to as 'Chief Executive Officer') as "the principal executive officer of the corporation for the time being, by whatever name called, and whether or not he is a director." (Bursa Malaysia, 2015d: 103). A CEO is appointed by the BODs to carry huge responsibilities in managing daily operations of a particular PLC. Ultimately, a CEO is responsible to increase the PLC's value (such as net profits and higher share prices) on behalf of the shareholders. As such, a CEO is responsible to the shareholders.

The relationship between the CEO and the shareholders is explained by the Stakeholder Theory. This theory was originally introduced by R. Edward Freeman (1984) to address morals and values in managing a company. As an improvised version of Agency Theory (Fama & Jensen, 1983), Stakeholder Theory (Freeman, 1984) specifies the relationship between the shareholders and the PLCs. Technically, the shareholders are the owner of PLCs. Therefore, a PLC (which is managed by the appointed employees and headed by a CEO) is liable and answerable to the shareholders.

In short, Stakeholder Theory (Freeman, 1984) separates the roles of CEOs from the roles of BODs, which represent PLCs' shareholders. However, CEO duality (CEODUAL) can jeopardise these separate roles. This is because CEO duality involves accumulation of titles in the same person, both as a CEO and a chairman of BODs in the same PLC.

Loebbecke *et al*. (1989), Beasley (1996), Beasley *et al*. (1999), Abbott *et al*. (2000), Dunn (2004) and Skousen *et al*. (2009) suggested that as a CEO accumulates titles, he/she is in a position to dominate decision-making, which may provide opportunity to commit fraud. CEO duality can neutralise the effectiveness of corporate governance practices by promoting a unitary leadership (Rezaee, 2005).

Meanwhile, Dechow *et al*. (1996) associated earnings manipulations with BODs dominated by management and CEO duality. Additionally, CEO duality can create dominant personalities among CEOs. For instance, Spollen (1997) referred to dominant personality of the President and founder of the Bank of Credit and Commerce International (BCCI) as a very significant factor in its collapse. The BCCI's President was secretive and was easily able to override controls because his dominant personality allowed him to get away with his actions (Spollen, 1997).

In Malaysia, CEO duality typically exists among PLCs that were originally inherited from family business. For example, Ghazali and Weetman (2006) found that the existence of directors belonging to the same family constitute a dominant group, which allows decisions to be strongly imposed within the BODs. Furthermore, the existence of family members has negatively influenced the voluntary disclosure in Malaysia (see Haniffa & Cooke, 2002; Ghazali & Weetman, 2006).

Moreover, CEO duality opens a high risk for PLCs in dealing with conflict of interest. According to the Association of Certified Fraud Examiners (ACFE), conflict of interest occurs when an Executive Director (in this context the CEO) has an undisclosed economic or personal interest in a transaction that adversely affects the PLC. Likewise, conflict of interest can easily occur since CEO duality reflects an extreme concentration of power, which can lead to a poor decision-making process.

Furthermore, as suggested by Hofstede (2001) and Hofstede *et al.*, (2010), a top-down management system, which is practised in Malaysian PLCs, cultivates concentration of power among these CEOs. The connection between CEO duality and power was also addressed by Boyd (1994: 338) when he claimed that "holding the highly symbolic position of board chair would provide the CEO with a wider power base and locus of control". Concentration of power derived from CEO duality suggests the existence of an autocratic management style as suggested by Crowe (2011, 2012a. 2012b).

Besides, CEO duality can also cultivate the attitudes of superiority and entitlement. The attitudes of superiority and entitlement are also associated with power, which can potentially be used to commit FFR. Beasley *et al.* (1999) claimed CEOs were implicated in over 70% of PLC frauds. As such, this research also connects CEO duality with the attitudes of superiority and entitlement among CEOs in Malaysian PLCs. Wells (1997: 486) addressed CEOs as 'big picture people by nature' in describing them as busy individuals. The term 'big picture' implies the characteristics of 'attitude of superiority and entitlement' among the CEOs. Therefore, this research predicts CEO duality as a suitable proxy variable to measure arrogance. However, this research also predicts that CEO duality would barely occur in most data samples. This is because SC Act (incorporating latest amendment – Act A1489/2015) has stated that:

"A member of the Board or any member of the Board committee who has or acquires a direct or indirect interest in relation to any matter under discussion by the Board or Board committee shall disclose to the Board or Board committee, as the case may be, the existence of his interest and the nature of that interest."   (SC, 2015: 31)

Nevertheless, CEO duality (CEODUAL) is proposed as the following sub-hypothesis:

H5a: Chief Executive Officer (CEO) duality indicates a higher tendency towards the likelihood of FFR.

5.3.2 Sub-Hypothesis 5b: A Chief Executive Officer (CEO) and/or Chairman of Board of Directors (BODs) who is also a Politician (POLCEO)

Sub-Hypothesis 5b (H5b) also measures arrogance from individual perspectives, which involves Executive and Non-Executive Directors in Malaysian PLCs. Several research studies have shown that there is a relationship between politics and power in organisations (see Mulder, 1977; Pfeffer, 1981; Mintzberg, 1983; Pettigrew, 1992; Dawson, 1994; 2001; Buchanan & Badham, 1999; Hasnan *et al*., 2008; Dalnial *et al*, 2014; Ahmad Khair *et al*., 2015). One of the classic definitions of power is defined by Mulder (1977: 90) when he described power as "the potential to determine or direct (to a certain extent) the behaviour of another person or other person more so than the other way around".

Power is a fundamental aspect of the controlling and decision-making process. Therefore, power can be broadly defined as "the ability to do something or act in a particular way" (Oxford Dictionary, 2008: 797). On a large scale, power is also related to the right and ability to control and influence people. Finkelstein (1992) and Pfeffer (1981) associated power with ability to exert will over another individual. In the PLCs' context, a powerful member of the BODs can use his/her ability to influence PLCs' major decisions, especially if the member of the BODs is a politician. This is one of the reasons for connecting power with "political authority or control" (Oxford Dictionary, 2008: 797).

The combination of politics and power in some Malaysian PLCs, particularly among Government-Linked Companies (GLCs) and State-Owned PLCs is likely to blossom these days. This is because politicians' involvement in GLCs and State-Owned PLCs is a common practice in Malaysia. At Federal level, ministers and politicians from ruling political parties are allowed to be appointed as the Chairmen of the BODs or as Independent Non-Executive Directors in Malaysian GLCs.

189

Likewise, at State level, Chief Ministers and politicians from ruling political parties are allowed to be appointed as the Chairmen of the BODs or as Independent Non-Executive Directors in State-Owned PLCs. As a result, a few financial scandal cases involving these GLCs and State-Owned PLCs has been reported since the last two decades (see Hasnan *et al*., 2008; Ahmad Khair, 2012; Ahmad Khair & Hudaib, 2012; Dalnial *et al*, 2014; Ahmad Khair *et al*., 2015).

The reported cases suggest that there is a significant relationship between politics and power among Malaysian PLCs. Ahmad Khair *et al*. (2015) claimed that between 1982 and 1997, a few high-ranked Malaysian politicians demonstrated personalisation of power through a State-Owned PLC named Perwaja Holdings Berhad. Those politicians dominated suspicious financial activities, which were regarded as corruption. As a result, Perwaja Holdings Berhad recorded accumulated losses from RM 131 million (≈USD 30.33 million) in 1986 to RM 376.54 (≈USD 87.17 million) in 1996 (Ahmad Khair *et al*., 2015).

This example indicates that a CEO and/or Chairman of the BODs who is also a politician could nurture a certain degree of arrogance in dominating major decisions for Malaysian PLCs. Arrogance could also be caused by political pressures. As CEOs and/or Chairman of the BODs, they cannot appear to fail due to their status or reputation (see Murdock, 2008; Kassem & Higson, 2012). As such, they might use political power to protect their arrogance. If the political power is misused, there is a higher tendency for FFR to occur. This research defines a politician as a Malaysian citizen who is: (1) elected as a Member of Parliament at the Federal perspectives; or; (2) elected as a State Assemblyman at the State perspectives; or (3) elected as a Councillor at the Local Government perspectives; or (4) an active member in any registered political party in Malaysia.

Hence, the following sub-hypothesis is proposed:

H5b: A Chief Executive Officer (CEO) and/or Chairman of Board of Directors (BODs) who is also a politician indicates a higher tendency towards the likelihood of FFR.

5.4 Research Question 4: Hypotheses and Sub-Hypotheses based on Additional Fraud-Risk Factors

Apart from exploring suitable fraud-risk factors in the Malaysian context, interview findings (Chapter 4) have also suggested two additional hypotheses and four sub-hypotheses for this research. The additional hypotheses and sub-hypotheses are mainly developed based on interviewees' perspectives on fraud-risk factors that are not mentioned in the Fraud Models. These factors could possibly be suitable in the Malaysian context to predict the likelihood of FFR. As such, additional hypotheses and sub-hypotheses are meant to provide some answers for RQ4 as stated below:

RQ4: To what extend do the additional fraud-risk factors adequate to predict the likelihood of FFR among Malaysian PLCs?

5.4.1 Sub-Hypothesis 5c: Numbers of Chief Executive Officers (CEOs') Pictures (CEOPIC)

Sub-Hypothesis 5c (H5c) measures arrogance from individual perspectives, which involves Executive Directors in Malaysian PLCs. Chapter 4 (Section 4.9.1) suggested frequent number of CEOs' pictures (CEOPIC) in annual reports as a potential proxy variable to measure arrogance. Theoretically, the more frequent CEOs' pictures appear in annual reports, the more arrogant the CEOs are.

Chapter 2 (Section 2.1.5.3) has explained the preference of some CEOs for treating themselves as celebrities as one of the elements of arrogance from Crowe's Fraud Pentagon Model (Crowe, 2011, 2012a, 2012b). As such, frequent number of CEOs' pictures would make a meaningful proxy variable to demonstrate the way for these CEOs to gain publicity and treating themselves as celebrities.

Based on observations on corporate images from various annual reports, Lee (1994), Marino (1995) and McKinstry (1996) claimed that design consultants were employed as image managers to ensure the quality of these images. This is because such images are important to represent corporate images to reading publics (Preston *et al*., 1996). Meanwhile, a research study on representations of gender in financial annual reports conducted by Benschop and Meihuizen (2002) found that images (including photographs of employees) do not necessarily present a truthful picture of the company's condition, although such images in practice are not subject to the accountant's scrutiny. Hence, this research does not deny the possibility that some CEOs in fraudulent Malaysian PLCs may use their pictures in annual reports as a symbol of arrogance.

This statement is also supported by Mock (1992) who agreed that annual reports have gradually become organisations' business cards through identity expression to external contacts. This is because annual reports are the primary means of communicating information regarding past performance and prospects of future performance to all related parties, particularly the shareholders (Goel & Gangolly, 2012). As a result, annual reports serve as a dual communication instrument: both as provider of information, and as representation of corporate identity (Mock, 1992).

However, this research also considers the possibility that some CEOs in fraudulent Malaysian PLCs prefer to maintain low profiles in order to hide their arrogance and FFR activities from being publicly exposed and detected. In this scenario, these CEOs tend to limit the appearance of their pictures in annual reports to a minimum. Therefore, H5c views both perspectives regarding the number of CEOs' pictures in annual reports as proposed below:

H5c: Frequent number of Chief Executive Officers (CEOs') pictures in annual reports indicates the more arrogant a CEO is and a higher tendency towards the likelihood of FFR; or lesser number of CEOs' pictures in annual reports indicates a higher tendency for the CEOs to hide their arrogance and FFR activities.

5.4.2   Hypothesis 6: Ignorance

Chapter 4 (Section 4.9.2) introduced ignorance as one of the additional fraud-risk factors discovered from the interviews. Thus, SRQ 6 is stated as follows:

SRQ 6: To what extend does ignorance adequate to predict the likelihood of FFR among Malaysian PLCs?

Ignorance is generally associated with the absence or distortion of true knowledge (Smithson, 1985). This definition is supported by a statement made by one of the interviewees for this research who claimed ignorance is the most critical factor that can lead Executive and/or Non-Executive Directors in Malaysian PLCs to manipulate financial reports. The claim is similar to a finding by Schwartz (2001) on the relationship between corporate codes of ethics and behaviour among employees, managers, and ethics officers at four large Canadian companies. The finding indicated that ignorance is one of the reasons for non-compliance with the corporate codes. Therefore, the following hypothesis is proposed:

H6: Ignorance indicates higher tendency towards the likelihood of FFR among Malaysian PLCs.

In order to measure H6, two sub-hypotheses are developed by employing suitable proxy variables to represent ignorance. These proxy variables are (1) insufficient corporate governance courses for Executive and Non-Executive Directors; and (2) delays in submitting annual financial reports as at financial year-end.

5.4.2.1 Sub-Hypothesis 6a: Insufficient Corporate Governance Courses for Executive and Non-Executive Directors (INEDU)

Sub-Hypothesis 6a (H6a) measures ignorance from individual perspectives, which involves Executive and Non-Executive Directors in Malaysian PLCs. This research predicts insufficient corporate governance courses for Executive and Non-Executive Directors in Malaysian PLCs are one of the reasons for the lack of necessary knowledge and skills to perform a thorough check on the financial reports. Such weaknesses give an advantage to fraudsters to manipulate financial reports, which eventually leads to FFR.

Additionally, these courses protect them from being deceived by FFR. Wells (1997) included ignorance as one of the causes of deceit, which implies imposing a false idea or belief. Based on face-to-face interviews conducted by Alleyne and Howard (2005) on 19 auditors and 24 auditees in Barbados, they found that sufficient accounting knowledge influenced interviewees' perceptions in detecting fraud. According to paragraph 15.25 of Listing Requirements (Bursa Malaysia, 2015a), Malaysian PLCs must provide a narrative statement of their corporate governance practices with reference to MCCG 2012 in the annual reports.

Practice Note 5 (Bursa Malaysia, 2009) on 'Training for Directors' requires Executive and Non-Executive Directors to attend 'Mandatory Accreditation Programme' (MAP) within the time set out in Table 5.3. MAP is organised by approved organisers that are appointed by Bursa Malaysia.

Table 5.3: Timeframe to Complete MAP for Executive and Non-Executive Directors Appointed in Malaysian PLCs.

No.	Director	Timeframe to Complete MAP
(i)	A Director who is appointed for the first time as a director of a listed issuer	Within 4 months from the date of appointment
(ii)	A Director of an applicant seeking listing on the Exchange	Within 4 months from the date of listing of the applicant unless the Director falls within the category set out in subparagraph (i) above in which case the period in subparagraph (i) applies.

Source: Practice Note 5, Bursa Malaysia, 2009.

In relation to annual reports, all Malaysian PLCs must provide a list of education and training programmes for their Executive and Non-Executive Directors in the 'Statement on Corporate Governance' section. This section indicates how Malaysian PLCs have applied the principles and recommendations of the MCCG 2012 (SC, 2012) together with the provisions listed by Bursa Malaysia and SC. This research specifies corporate governance courses as a reference to 'education programmes' stated by MCCG 2012 (SC, 2012). Corporate governance courses are more related to Executive and Non-Executive Directors in Malaysian PLCs. As a response to KPMG (2014) report, this research predicts that fraud awareness courses would be also included in corporate governance module, conducted by Bursa Malaysia and SC. However, close examinations of 'Statement on Corporate Governance' sections suggest that most Malaysian PLCs only provide the lists of corporate governance courses attended by their Executive and Non-Executive Directors at a particular financial year-end.

Most of the lists did not include a summary of programmes modules. In addition, the exact numbers of Executive and Non-Executive Directors who had attended the courses were also not included. As a result, the lists can be interpreted as if only a few members of Executive and/or Non-Executive Directors had attended the courses. This interpretation can also imply the possibility that the same Executive and/or Non-Executive Directors could attend more than one course in the same year. On the other hand, there might be Executive and/or Non-Executive Directors who had never attended any course within the year. In other words, information provided in 'Statement on Corporate Governance' section does not represent an appropriate ratio between the number of courses and total number of Executive and Non-Executive Directors in BODs. Therefore, this research calculates the ratio of corporate governance courses with a comparison to total number of BODs in Malaysian PLCs:

Additionally, ignorance can also happen to external parties such as external auditors and regulators (i.e. officers from Bursa Malaysia and SC). For example, Bursa Malaysia could oversee some key indicators of FFR that are well-hidden in financial reports submitted by fraudulent PLCs. However, this research does not measure ignorance from external parties' perspectives. This research measures ignorance from internal perspectives, which specifically involve Executive and Non-Executive Directors in Malaysian PLCs. Therefore, the following sub-hypothesis is proposed:

H6a: Insufficient corporate governance courses for Executive and Non-Executive Directors indicate a higher tendency towards the likelihood of FFR

5.4.2.2 Sub-Hypothesis 6b: Delays in Submitting Annual Financial Reports as at Financial Year-End (REMDAYs).

Sub-Hypothesis 6b (H6b) measures ignorance from organisational perspectives. This research predicts that Malaysian PLCs involved in FFR tend to delay the submission of annual financial reports because they need more time to prepare and amend some doubtful figures in financial reports. These PLCs are perceived to intentionally use ignorance as their excuse for delays, since ignorance is associated with 'never aware', 'did not perceive' and 'forgot' (Schwartz, 2001). Bursa Malaysia requires all Malaysian PLCs to submit their annual financial reports within four months after the financial year-end as stated in Listing Requirements (Para 9.23) as follows:

"A listed issuer must announce to the Exchange its annual audited financial statements together with the auditors' and directors' reports within a period not more than 4 months from the close of the financial year of the listed issuer unless the annual report is issued within a period of 4 months from the close of the financial year of the listed issuer."   (Chapter 9-Continuing Disclosure, Bursa Malaysia, 2015a: 916)

Meanwhile, the SC Act (incorporating latest amendment – Act A1489/2015) also mentioned that:

"The Commission shall, as soon as practicable after the end of each financial year, prepare a report on its activities during that financial year and send a copy of the report to the Minister who shall cause a copy thereof to be laid before both Houses of Parliament"   (SC, 2015: 45)

Based on information provided from Enforcement Section (Bursa Malaysia, 2015), among notable breaches recorded in 2014 were those in respect of financial reporting breaches, including 'timely submission'. As a result, Bursa Malaysia also addresses this issue as one of the key enforcement cases related to FFR.

Preliminary observations of several financial reports have suggested several fraudulent Malaysian PLCs submitted their annual financial reports after the end of the four months period (also referred to as the 'due date'). This research measures delays in submitting annual financial reports by calculating the difference (in days) between the dates annual financial reports were signed or submitted and the date of financial year-end. As such, the following sub-hypothesis is proposed:

H6b: Delays in submitting annual financial reports as at financial year-end indicate a higher tendency towards the likelihood of FFR.

5.4.3   Hypothesis 7: Greed

Based on the interviewees' perspectives, Chapter 4 (Section 4.9.3) has regarded greed as part of an individual's attitude and a component of incentive, which creates a motive to commit FFR. The interview finding is also supported by Everett *et al.* (2007) who associated fraud with greed and dishonesty. Thus, SRQ 7 is stated as follows:

> SRQ7: To what extend does greed adequate to predict the likelihood of FFR among Malaysian PLCs?

One of the hypotheses on employee theft developed by Holliger and Clark (1983) suggested that people are greedy and dishonest by nature. Similarly, greed has been denoted as desire of an individual, the state, the power and the culture on the occurrence of fraud in a distinctive environment like Malaysia (Ahmad Khair *et al.*, 2015). Thus, this research perceives that there is a high possibility that greed could become one of the potential fraud-risk factors in the Malaysian context. As such, the following hypothesis is proposed:

H7: Greed indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs.

In order to measure H7, a sub-hypothesis is developed by employing suitable proxy variables to represent greed. As such, Executive Directors' remunerations are chosen as a suitable proxy variable to measure greed, based on interviewees' perspectives on greed (Section 4.9.3 of Chapter 4). According to Rezaee (2005), recent corporate scandals reveal that many corporations and PLCs have provided their top management with incentives (including high remunerations) to inflate earnings in an attempt to improve their own compensation packages. In order to obtain different effects of remunerations among Executive Directors in Malaysian PLCs, this proxy variable is measured based on two observations, which are (1) the actual amounts of Executive Directors' remunerations [EXREMU(ACTUAL)]; and (2) a ratio between Executive Directors' remunerations and PLCs' profit after tax [EXREMU(RATIO)].

5.4.3.1 Sub-Hypothesis 7a: Actual Executive Directors' Remunerations [EXREMU(ACTUAL)]

Sub-Hypothesis 7a (H7a) measures greed from individual perspectives, which involves Executive Directors in Malaysian PLCs. Most Executive Directors' remunerations comprise (1) basic salary; (3) Directors' fee; (3) allowance; and (4) benefit-in-kind (i.e. PLCs' shares). However, during the process of data collection, this research has found that most Malaysian PLCs did not specify remunerations based on these categories and only reported a total sum of yearly remunerations. Principally, each Malaysian PLC must appoint a 'Remuneration Committee', which is responsible for recommending to the BODs a suitable remunerations package for Executive Directors. This research only measures remunerations for Executive Directors because Non-Executive Directors are paid a fixed sum, and remuneration by commission or a percentage of revenues is forbidden (KPMG, 2013).

As a result, Non-Executive Directors are only entitled to a directors' fee. In other words, Non-Executive Directors are not allowed to receive remunerations based on Malaysian PLCs' performance. However, they are allowed to receive remunerations or allowances for attending BODs meetings as stated by the SC Act (incorporating latest amendment – Act A1489/2015):

"Members of the Board or any other person invited to attend any meeting or deliberation of the Board under Section 11 may be paid such remuneration or allowance as the Minister may determine" (SC, 2015: 30).

This requirement leaves only Executive Directors to receive remunerations based on the PLCs' performance. A direct observation of the actual amount of Executive Directors' remunerations will allow this research to compare actual allocation of Executive Directors' remunerations between fraudulent and non-fraudulent PLCs. This comparison is crucial in providing answers whether fraudulent PLCs have allocated higher amount of Executive Directors' remunerations than non-fraudulent PLCs.

5.4.3.2 Sub-Hypothesis 7b: Ratio of Executive Directors' Remunerations [EXREMU(RATIO)]

In order to observe Malaysian PLCs' financial strength in allocating remunerations for Executive Directors, this research also compares Executive Directors' remunerations with profit (or losses) after tax as another proxy variable for this sub-hypothesis. The comparison is essential in indicating the possibility that some Malaysian PLCs have continued allocating sufficient amounts of their Executive Directors' remunerations in spite of suffering from losses after tax. Based on the explanation in Section 5.4.3.1 and 5.4.3.2, the following sub-hypothesis is proposed:

H7a: Executive Directors' remunerations indicates a higher tendency towards the likelihood of FFR.

5.5 Conceptual Models

This section discusses the development of four conceptual models (CMs) based on the seven hypotheses and fourteen sub-hypotheses that have been finalised for this research. Basically, CMs demonstrate relationships between the dependent variable (DV) and explanatory variables.[29] In the context of this research, CMs describe the relationships between the likelihood of FFR (DV) and the fraud-risk factors from the Fraud Models and additional factors discovered from the interviews (explanatory variables). There are two types of relationships that can be conceptualised by these CMs, which are correlation coeffcients and causal-effect relationships between the DV and explanatory variables. Basically, correlation coefficients are used to determine the strength of relationships between the DV and explanatory variables (Cohen, 1988, 1992). However, correlation coefficients do not imply causal-effect relationships between the DV and explanatory variables. Therefore, these CMs will not demonstrate correlation coefficients and only demonstrate causal-effect relationships between the DV and explanatory variables.

These CMs would form a new CM that incorporates significant fraud-risk factors in the Malaysian context based on empirical results from binomial logistic regression analysis in Chapter 7. At this stage, these CMs are organised based on the fraud-risk factors from the Fraud Models, which are (1) the Fraud Triangle Model; (2) the Fraud Diamond Model; (3) Crowe's Fraud Pentagon Model; and (4) all factors, including additional fraud-risk factors discovered from the interviews.

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[29] In some research, explanatory variables also known as 'independent variables'.

5.5.1   Conceptual Model 1

CM 1 demonstrates relationships between the DV and explanatory variables from the Fraud Triangle Model. Figure 5.2 illustrates CM1.
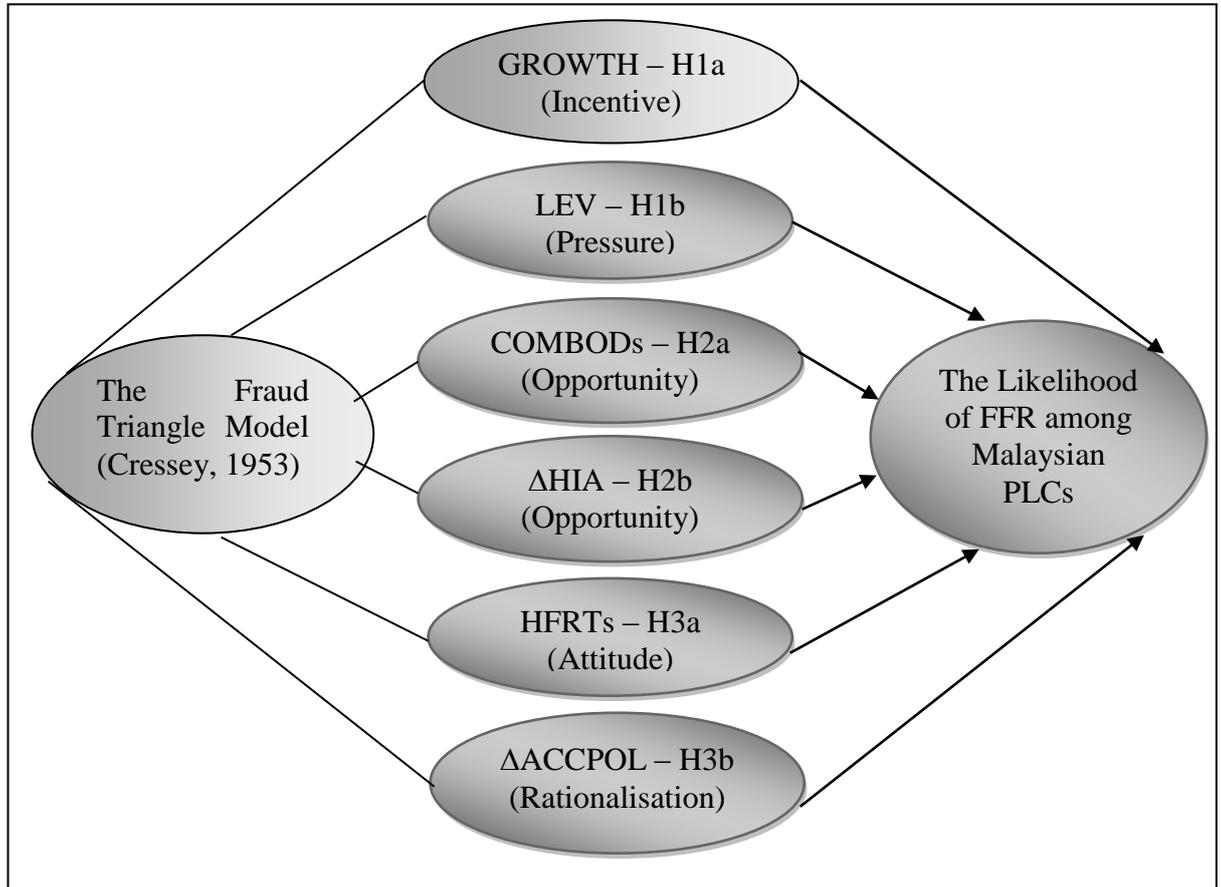
Figure 5.2: Relationships between the DV and Explanatory Variables in CM1 based on the Fraud Triangle Model.

CM 1 conceptualises that the likelihood of FFR among Malaysian PLCs can be predicted based on the fraud-risk factors from the Fraud Triangle Model (i.e. incentive, pressure, opportunity, attitude and rationalisation) using suitable proxy variables (i.e. GROWTH, LEV, COMBODs, ΔHIA, HFRTs and ΔACCPOL) employed in six sub-hypotheses accordingly (i.e. H1a, H1b, H2a, H2b, H3a, H3b).

5.5.2 Conceptual Model 2

CM 2 demonstrates relationships between the DV and explanatory variables from the

Fraud Diamond Model. Figure 5.3 illustrates CM2.
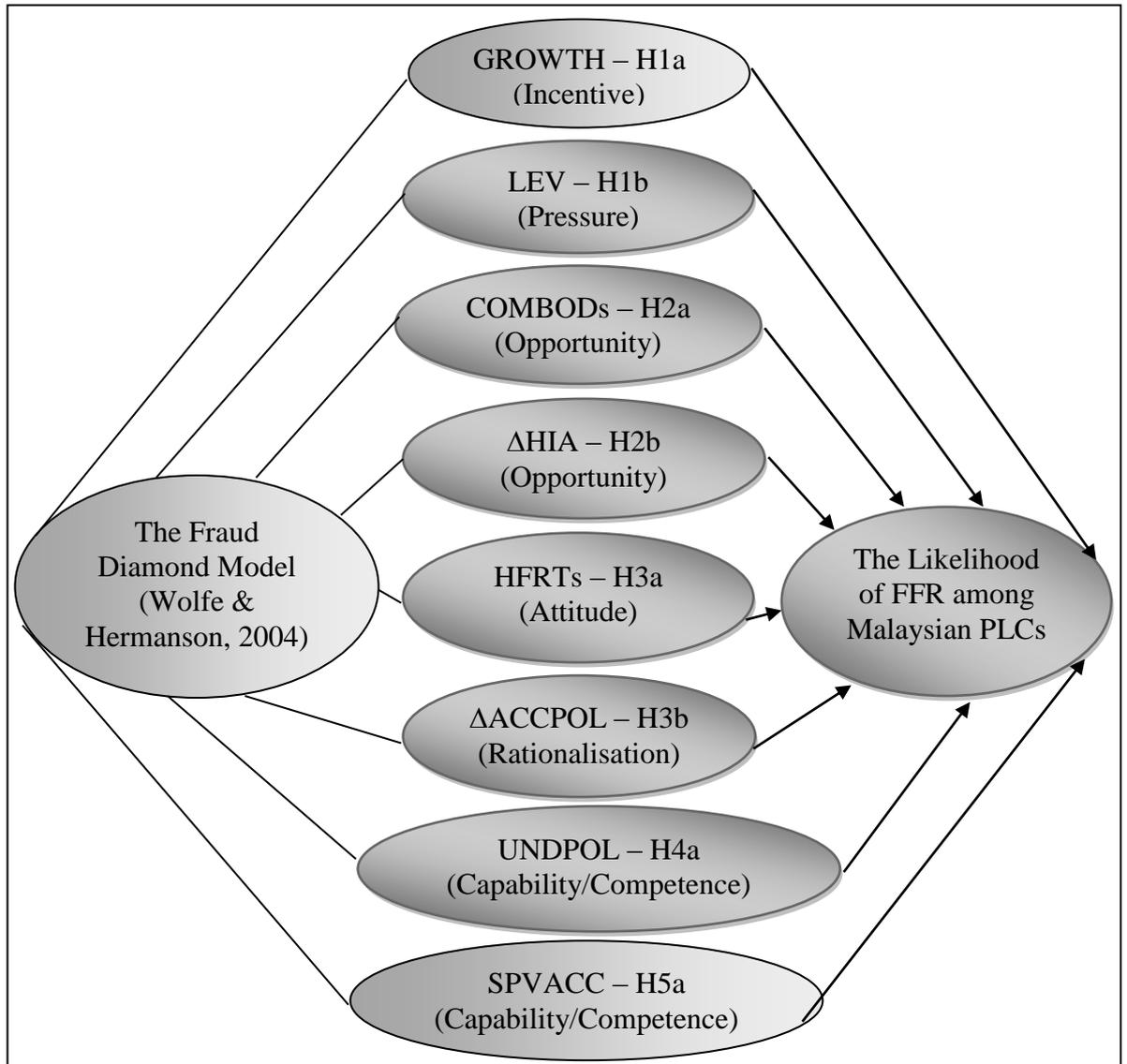
Figure 5.3: Relationships between the DV and Explanatory Variables in CM2 based on the Fraud Diamond Model.

CM 2 conceptualises that the likelihood of FFR among Malaysian PLCs can be

predicted based on the fraud-risk factors from the Fraud Diamond Model (i.e. incentive,

pressure, opportunity, attitude, rationalisation and capability/competence) using suitable

proxy variables (i.e. GROWTH, LEV, COMBODs, ΔHIA, HFRTs, ΔACCPOL,

UNDPOL and SPVACC) employed in eight sub-hypotheses accordingly (i.e. H1a, H1b,

H2a, H2b, H3a, H3b, H4a and H4b).

5.5.3 Conceptual Model 3

CM 3 demonstrates relationships between the DV and explanatory variables from Crowe's Fraud Pentagon Model. CM3 conceptualises that the likelihood of FFR among Malaysian PLCs can be predicted based on the fraud-risk factors from Crowe's Fraud Pentagon Model (i.e. incentive, pressure, opportunity, attitude, rationalisation, capability/competence and arrogance) using suitable proxy variables (i.e. GROWTH, LEV, COMBODs, ΔHIA, HFRTs, ΔACCPOL, UNDPOL, SPVACC, CEODUAL, POLCEO and CEOPIC) employed in eleven sub-hypotheses accordingly (i.e. H1a, H1b, H2a, H2b, H3a, H3b, H4a, H4b, H5a, H5b and H5c). Figure 5.4 illustrates CM 3.
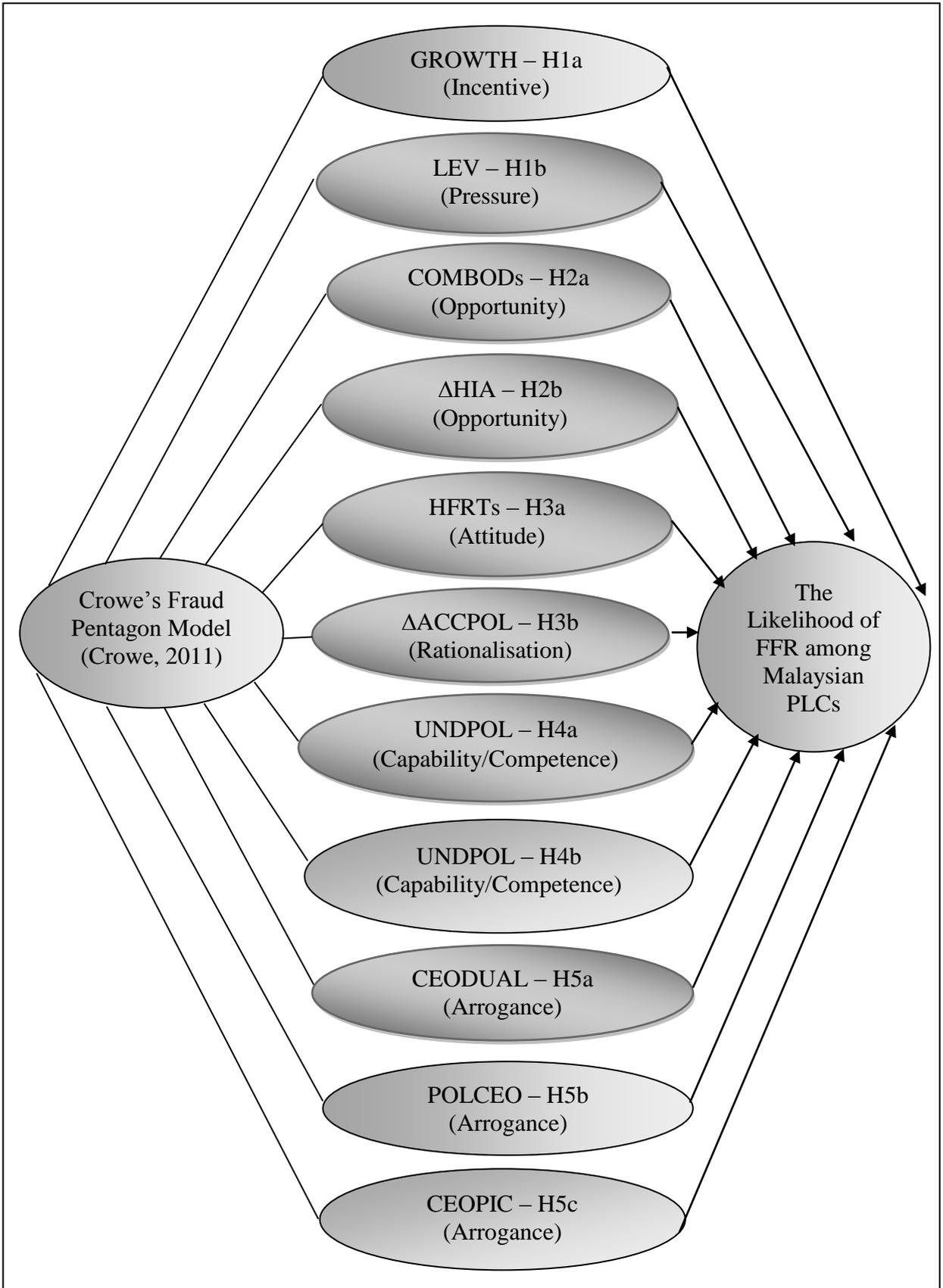
Figure 5.4: Relationships between the DV and Explanatory Variables in CM3 based on Crowe's Fraud Pentagon Model.

5.5.4 Conceptual Model 4

CM 4 demonstrates relationships between the DV and explanatory variables from the Fraud Models (i.e. the Fraud Triangle Model, the Fraud Diamond Model and Crowe's Fraud Pentagon Model) and additional factors from the interview results. Since the additional factors (i.e. ignorance and greed) have expanded Crowe's Fraud Pentagon Model from five dimensions to seven dimensions, CM 4 is regarded as the Fraud Heptagon Model. In this research, CM 4 conceptualises that the likelihood of FFR among Malaysian PLCs can be predicted based on the fraud-risk factors from the Fraud Heptagon Model (i.e. incentive, pressure, opportunity, attitude, rationalisation, capability/competence, arrogance, ignorance and greed) using suitable proxy variables (i.e. GROWTH, LEV, COMBODs, ΔHIA, HFRTs, ΔACCPOL, UNDPOL, SPVACC, CEODUAL, POLCEO, CEOPIC, INEDU, REMDAYs and EXREMU) employed in fourteen sub-hypotheses accordingly (i.e. H1a, H1b, H2a, H2b, H3a, H3b, H4a, H4b, H5a, H5b, H5c, H6a, H6b and H7a). Figure 5.5 illustrates CM 4.
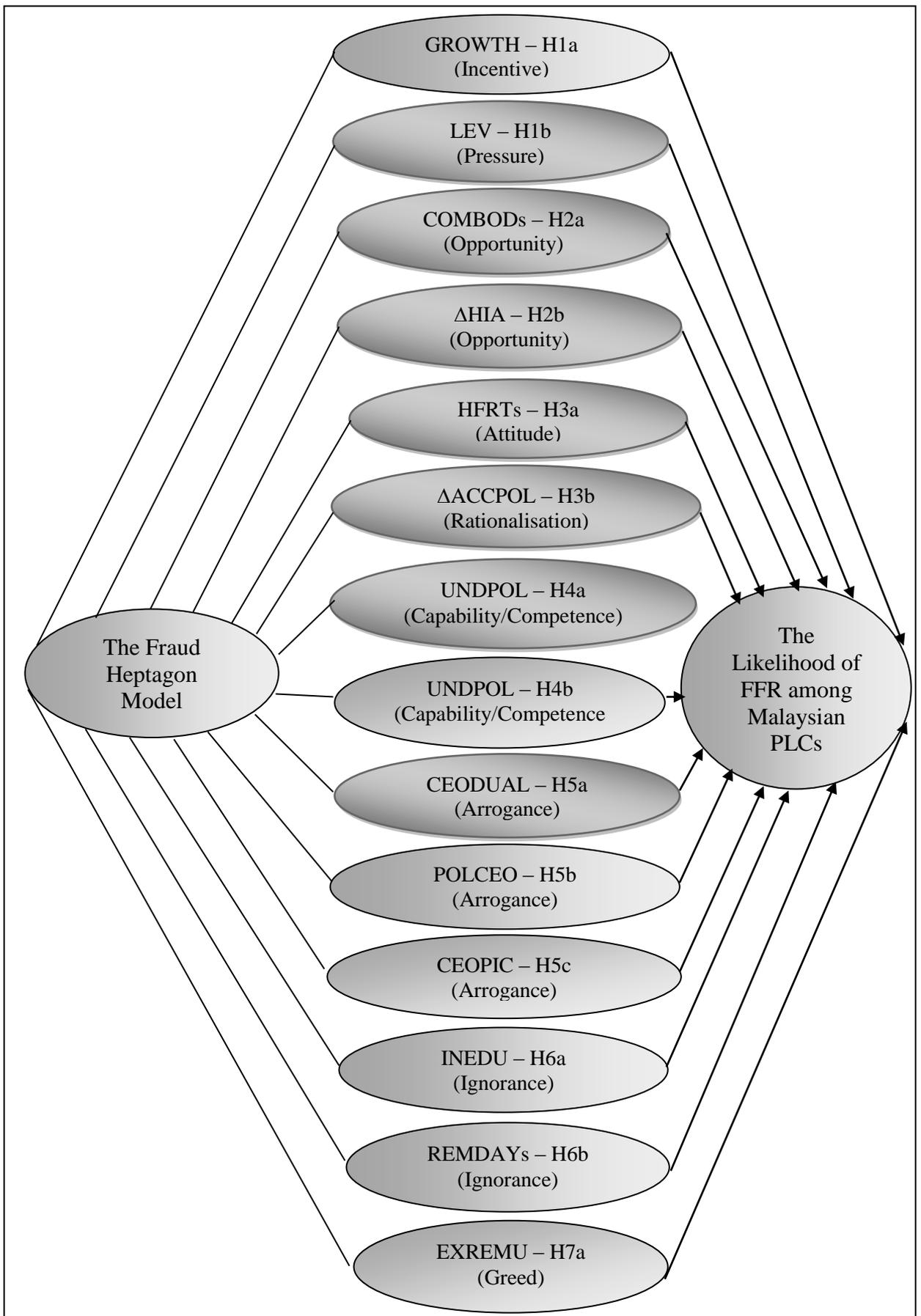
Figure 5.5: Relationships between the DV and Explanatory Variables in CM 4 based on the Fraud Heptagon Model.

5.6 Conclusions

Based on the literature reviews in Chapter 2 and this chapter, this research found that most theoretical and empirical research studies focused on the Fraud Triangle Model (Cressey, 1953). Among these research studies were those conducted by Albrecht *et al*. (2004, 2008), Rae and Subramaniam (2008), Lou and Wang (2009), Skousen *et al*. (2009), Ravisankar *et al*. (2010), Dorminey *et al*. (2012), Tugas (2012), Manurung & Hadian (2013) and Aghghaleh *et al*. (2014). Therefore, seven hypotheses and fourteen sub-hypotheses were developed due to a great concern that there is no literature evidence showing that the Fraud Triangle Model (Cressey 1953), the Fraud Diamond Model (Wolfe & Hermanson, 2004) and Crowe's Fraud Pentagon Model (Crowe, 2011) have been tested concurrently, particularly in the Malaysian context. Additionally, this research has also proposed ignorance and greed as additional fraud-risk factors that were discovered from the interviews. These additional fraud-risk factors could possibly be suitable to predict the likelihood of FFR in the Malaysian context. Therefore, identifying suitable fraud-risk factors (either from the Fraud Models and/or additional fraud-risk factors) is essential for this research. Sections 5.1 to Section 5.4 have discussed hypotheses and sub-hypotheses development based on four RQs and seven SRQs. Eventually, hypotheses testing based on binomial logistic regression analysis would provide the answer for RQ5, which is stated as follows:

> RQ5: Which of these fraud-risk factors best fit the Malaysian context in predicting the likelihood of FFR among Malaysian PLCs?

Table 5.4 summarises the seven hypotheses and fourteen sub-hypotheses according to the respective ROs, RQs and SRQs.

Table 5.4: Summary of Hypotheses and Sub-Hypotheses According to Respective ROs, RQs and SRQs for the Research

RO1: To examine the suitability of the fraud-risk factors from the Fraud Models in predicting the likelihood of FFR among Malaysian PLCs.			
RQ1: To what extend do the fraud-risk factors from the Fraud Triangle Model (Cressey, 1953) adequate to predict the likelihood of FFR among Malaysian PLCs?			
SRQ1: To what extend does incentive/pressure adequate to predict the likelihood of FFR among Malaysian PLCs?			
Hypotheses 1	**Sub-Hypotheses 1a & 1b**	**Explanatory Variables**	**Proxy Variables**
Incentive/pressure indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H1a: High growth in Malaysian PLCs indicates a higher tendency towards the likelihood of FFR.	Incentive	Return on Assets (ROA) & Changes in Sales
	H1b: High leverage in Malaysian PLCs indicates a higher tendency towards the likelihood of FFR.	Pressure	Leverage
SRQ2: To what extend does opportunity adequate to predict the likelihood of FFR among Malaysian PLCs?			
Hypotheses 2	**Sub-Hypotheses 2a & 2b**	**Explanatory Variables**	**Proxy Variables**
Opportunity indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H2a: Lower percentage of outside members (Independent Non-Executive Directors) in Board of Directors (BODs) indicates a higher tendency towards the likelihood of FFR	Opportunity	Composition of Board of Directors (BODs)
	H2b: High turnover frequency of Head of Internal Auditor (HIA) indicates a higher tendency towards the likelihood of FFR.		Turnover of Head of Internal Auditor (HIA)

SRQ3: To what extend does attitude/rationalisation adequate to predict the likelihood of FFR among Malaysian PLCs?			
Hypotheses 3	**Sub-Hypotheses 3a & 3b**	**Explanatory Variables**	**Proxy Variables**
Attitude/rationalisation indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H3a: High historical financial restatements times (HFRTs) indicate a higher tendency towards the likelihood of FFR.	Attitude	Historical Financial Restatement Times (HFRTs)
	H3b: Frequent changes in PLCs' accounting policies indicate a higher tendency towards the likelihood of FFR.	Rationalisation	Changes in Accounting Policies

RQ2: To what extend do the fraud-risk factors from the Fraud Diamond Model (Wolfe & Hermanson, 2004) adequate to predict the likelihood of FFR among Malaysian PLCs?

SRQ4: To what extend does capability/competence adequate to predict the likelihood of FFR among the Malaysian PLCs?			
Hypotheses 4	**Sub-Hypotheses 4a & 4b**	**Explanatory Variables**	**Proxy Variables**
Capability/competence indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H4a: Undeclared policies on doubtful debts and accounts receivable indicate a higher tendency towards the likelihood of FFR.	Capability/ Competence	Undeclared Policies on Doubtful Debts and Accounts Receivable
	H4b: No access to Special Purpose Vehicles (SPVs') financial reports indicates a higher tendency towards the likelihood of FFR.		No Access to SPVs' Financial Reports

RQ3: To what extend do the fraud-risk factors from Crowe's Fraud Pentagon Model (Crowe, 2011) adequate to predict the likelihood of FFR among Malaysian PLCs?

SRQ5: To what extend does arrogance adequate to predict the likelihood of FFR among Malaysian PLCs?			
Hypotheses 5	**Sub-Hypotheses 5a, 5b & 5c**	**Explanatory Variables**	**Proxy Variables**
Arrogance indicates higher a tendency towards the likelihood of FFR among Malaysian PLCs	H5a: Chief Executive Officer (CEO) duality indicates a higher tendency towards the likelihood of FFR.	Arrogance	CEO Duality
	H5b: A Chief Executive Officer (CEO) and/or Chairman of BODs in Malaysian PLC who is also a politician indicates a higher tendency towards the likelihood of FFR		A CEO and/or Chairman of BODs Who is also a Politician
	H5c: Frequent number of Chief Executive Officers (CEOs') pictures in annual reports indicates the more arrogant a CEO is and a higher tendency towards the likelihood of FFR; or lesser number of CEOs' pictures in annual reports indicates a higher tendency for the CEOs to hide their arrogance and FFR activities		Number of CEOs' pictures in Annual Reports

RO2: To examine the suitability of additional fraud-risk factors in predicting the likelihood of FFR among Malaysian PLCs.

RQ4: To what extend do the additional fraud-risk factors adequate to predict the likelihood of FFR among Malaysian PLCs?

SRQ6: To what extend does ignorance adequate to predict the likelihood of FFR among Malaysian PLCs?

Hypotheses 6	Sub-Hypotheses 6a & 6b	Explanatory Variables	Proxy Variables
Ignorance indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H6a: Insufficient corporate governance courses for Executive and Non-Executive Directors indicate a higher tendency towards the likelihood of FFR.	Ignorance	Number of Corporate Governance Courses for Executive and Non-Executive Directors
	H6b: Delays in submitting annual financial reports as at financial year-end indicate a higher tendency towards the likelihood of FFR	Ignorance	Days Taken by PLCs to Submit Annual Financial Reports

SRQ7: To what extend does greed adequate to predict the likelihood of FFR among Malaysian PLCs?

Hypotheses 7	Sub-Hypotheses 7a	Explanatory Variables	Proxy Variables
H7: Greed indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H7a: Executive Directors' remunerations indicate a higher tendency towards the likelihood of FFR.	Greed	Executive Directors' Remunerations (Actual Amounts and Ratio to Profits/Losses after Taxation)

CHAPTER 6: STATISTICAL CHARACTERISTICS OF EXPLANATORY VARIABLES

This chapter demonstrates descriptive statistics as the first part of quantitative methods of this research. This chapter provides statistical characteristics for explanatory variables (the fraud-risk factors), which are represented by suitable proxy variables from ratio (numerical) variables or categorical variables. Sources for these proxy variables vary, depending on the presentation of financial reports. Table 6.1 presents these details.

Table 6.1: Sources of the Proxy Variables in the Research

Explanatory Variables	Proxy Variables	Formula	Relevant Sections in Annual Reports
Incentive	Growth (Return on Assets)	Operating Profits/(Losses)	Statement of Comprehensive Income
		Total Assets	Statement of Financial Position
	Growth (Changes in Sales)	Current Sales Volumes	Statement of Comprehensive Income
		Previous Sales Volumes	Statement of Comprehensive Income
Pressure	Leverage	Long-term Debt/ Liability	Statement of Financial Position
		Total Equity	Statement of Financial Position
Opportunity	Composition of BODs	Number of Outside Directors	1. Directors' Profile 2.Board of Directors
		Total Number of BODs	1. Statement on Corporate Governance 2. Directors' Report
	Turnover of HIA	Turnover of HIA	1. Management Team 2. Directors' Statement (Statutory Declaration)
Attitude	Historical Financial Restatement Times	Not Applicable	Financial Highlights
Rationalisation	Changes in Accounting Policies	Not Applicable	Notes to Financial Statements (1.Significant Accounting Policies; 2.Changes in Accounting Policies)

Explanatory Variables	Proxy Variables	Formula	Relevant Sections in Annual Reports
Capability/ Competence	Undeclared policies on doubtful debts and account receivables	Not Applicable	Notes to Financial Statements (Loan/Trade & Other Receivables
	No access to SPVs' financial reports	Not Applicable	Notes to Financial Statements (1. Disclosure of Realised & Unrealised Profits; 2. Investment in Subsidiaries)
Arrogance	CEO duality	Not Applicable	1. Directors' Profile 2. Board of Directors
	A Chief Executive Officer and/or Chairman of Board of Directors who is also a Politician	Not Applicable	1. Directors' Profile 2. Board of Directors
	Number of CEO's pictures in Malaysian PLCs' annual reports	Not Applicable	All sections that provide CEOs' pictures
Ignorance	Insufficient corporate governance courses for Executive and Non-Executive Directors	Number of corporate governance courses	Statement on Corporate Governance
		Total number of BODs	1. Statement on Corporate Governance 2. Directors' Report
	Days taken to submit annual financial reports as at financial year-end	Financial statement year-end	Directors' Statement
		Date of submission	1. Directors' Report 2. Financial Statements
Greed	Executive Directors' remunerations (Actual)	Actual Amounts Executive Directors Remunerations	1. Statement on Corporate Governance 2. Directors' Report/ Benefits 3.Notes to Financial Statements (Employee Benefits Expense)
	Executive Directors remunerations (Ratio)	Actual Amounts Executive Directors Remunerations	
		Profits/(Losses) after Taxation	Statement of Comprehensive Income

Source: Various Malaysian PLCs' Annual Reports.

Ratio variables represent numerical values or calculated ratios, which include (1) growth [return on assets (ROA) and changes in sales (Δ Sales)]; (2) leverage (long-term debt-to-equity ratio); (3) number of CEOs' pictures; (4) ratio on corporate governance courses [number of corporate governance courses/total number of Board of Directors (BODs)]; (5) days taken to submit annual financial reports (differences between the dates of annual financial reports were signed or submitted and the date of financial year-end); and (6) Executive Directors' remunerations [actual amounts and ratio (remunerations/net profits(losses)]. As explained in Section 3.2.6.6 of Chapter 3, this research employs categorical variables by using numerical codes of '0' and '1' to differentiate two categories of eight proxy variables[30]. Table 6.2 provides the details of these categorical variables.

Table 6.2: Categorical Variables for the Research

Dependent Variable (DV) & Explanatory Variables	Categorical Variables	Explanation
FFR (DV)	The likelihood of fraudulent financial reporting (FFR) among Malaysian PLCs	A dummy variable coded by '1' is used for Malaysian PLCs that were charged for FFR offences by Bursa Malaysia and Securities Commission Malaysia (SC); and coded by '0' otherwise.
COMBODs (Explanatory Variable)	Composition (in %) of Board of Directors (BODs) = Number of outside members (Independent Non-Executive Directors)/Total number of BODs	A dummy variable coded by '1' is used to indicate Malaysian PLCs with lower percentage of Independent Non-Executive Directors (33.33% and below); and coded by '0' otherwise.
ΔHIA (Explanatory Variable)	Turnover of Head of Internal Auditor (HIA)	A dummy variable coded by '1' is used to indicate HIA turnover; and coded by '0' otherwise.

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[30] Principally, '0' denotes non-fraudulent signs, which imply common indicators. In contrast, '1' denotes fraudulent signs, which imply unusual activities or indicators.

Dependent Variable (DV) & Explanatory Variables	Categorical Variables	Explanation
HFRTs (Explanatory Variable)	Historical financial restatements times	A dummy variable coded by '1' is used to indicate Malaysian PLCs with historical financial restatements mandated by Bursa Malaysia; and coded by '0' otherwise.
ΔACCPOL (Explanatory Variable)	Changes in accounting policies	A dummy variable coded by '1' is used to indicate changes in accounting policies; and coded by '0' otherwise.
UNDPOL (Explanatory Variable)	Undeclared policies on doubtful debts and account receivables	A dummy variable coded by '1' is used to indicate Malaysian PLCs that have not declared policies on doubtful debts and account receivables; and coded by '0' otherwise.
SPVACC (Explanatory Variable)	No access to Special Purpose Vehicles (SPVs') financial reports	A dummy variable coded by '1' is used to indicate Malaysian PLCs that have SPVs, but do not provide SPVs' financial reports; and coded by '0' otherwise.
CEODUAL (Explanatory Variable)	A Chief Executive Officer (CEO) who has accumulation of titles as the CEO and the chairman of BODs in the same PLC (also known as CEO Duality)	A dummy variable coded by '1' is used to indicate Malaysian PLCs that practise CEO duality and coded by '0' otherwise.
POLCEO (Explanatory Variable)	A CEO and/or Chairman of BODs who is also a Politician.	A dummy variable coded by '1' is used to indicate a Malaysian PLC with a CEO and/or Chairman of BODs who is also a politician; and coded by '0' otherwise.

The rest of this chapter is organised as follows. Section 6.1 to Section 6.14 explain descriptive statistics for explanatory variables according to the sequence of hypotheses and sub-hypotheses. Section 6.15 discusses statistical results on the test of normality. Section 6.16 explains the Wilcoxon Sign Rank Tests. Section 6.17 analyses correlation coefficients. Section 6.18 discusses the analysis on specification of model. Section 6.19 concludes this chapter.
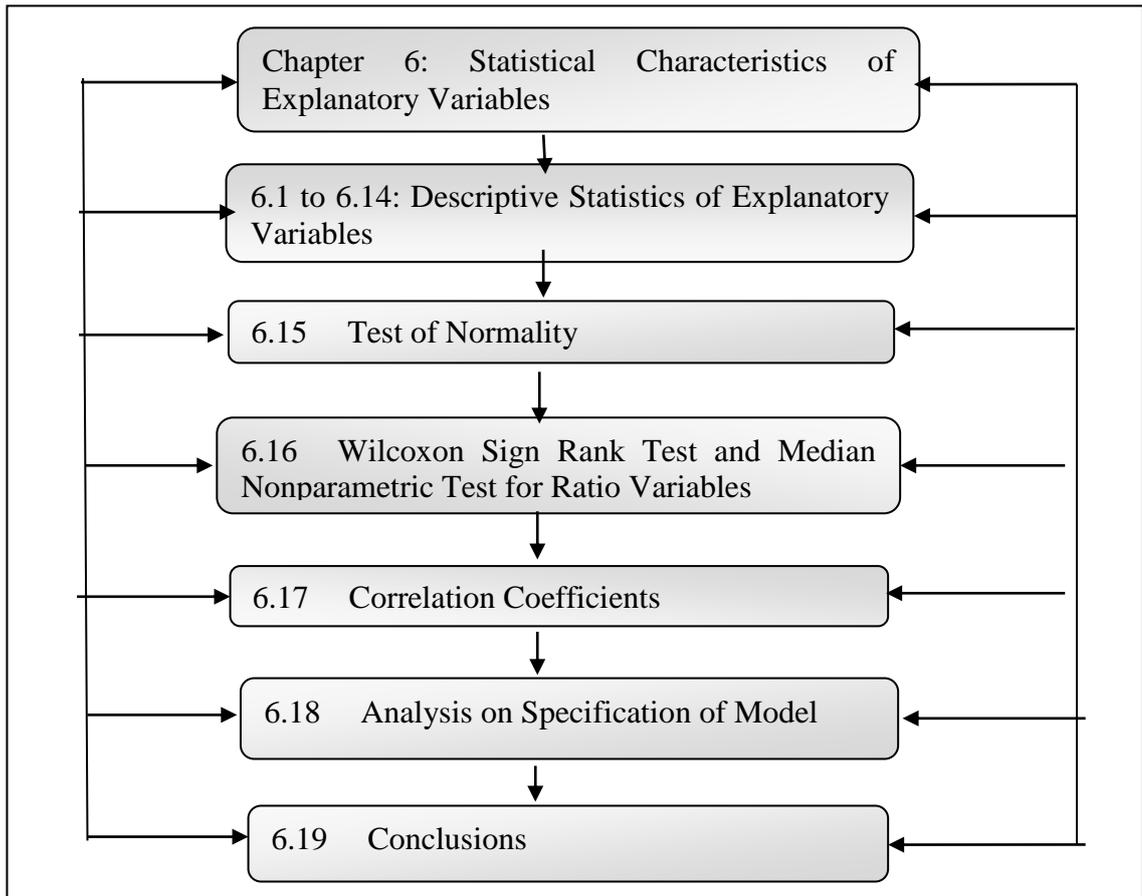
Figure 6.1: Structure of Chapter 6.

The next sections (Section 6.1 to Section 6.14) discuss the the results on descriptive statistics[31], which include ratio variables and categorical variables. Generally, this research uses descriptive tables and line graphs of mean and standard deviation (SD) to explain and illustrate ratio variables. On the other hand, contingency tables and histograms are used for categorical variables. Additionally, the Chi-square (χ^2) test is employed to test associations between dependent variables (FFR) and categorical variables (Laerd, 2013).

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[31] This research uses IBM Statistical Package for the Social Sciences (SPSS) to conduct descriptive statistics, which include the chi-square test, Wilcoxon sign rank test & Median nonparametric test, normality test and coefficient correlations. Descriptive statistics also known as univariate analysis, since all tests in this chapter explore each explanatory variable separately.

6.1. PLCs' Growth (GROWTH)

PLCs' growth is a proxy variable used in Sub-Hypothesis 1a in order to measure the relationship between incentives and the likelihood of FFR among Malaysian PLCs. Sub-Hypothesis 1a predicts "high growth in Malaysian PLCs indicates a higher tendency towards the likelihood of FFR". This research predicts one of the reasons for rapid growth in some of the Malaysian PLCs is caused by top management's strategy to show the best possible performance to the shareholders, in spite of suffering from a bad performance in reality. This research employs two proxy variables to measure PLCs' growth, which are (1) return on asset (ROA); and (2) the changes in sales growth (Δ Sales). ROA is calculated by dividing PLCs' operating profit or losses with total assets as shown below:

> ROA = Operating Profit (Losses) / Total Assets

Table 6.3 displays the comparison by mean and SD on return on assets for each year for both fraudulent and non-fraudulent observations.

Table 6.3: Mean and Standard Deviation for Return on Asset (ROA)

Year	Fraudulent Observations		Non-Fraudulent Observations	
	Mean	SD	Mean	SD
2004	0.07	0.07	0.12	0.24
2005	0.06	0.18	0.11	0.18
2006	0.09	0.08	0.11	0.17
2007	-0.01	0.15	0.11	0.16
2008	-0.13	0.58	0.09	0.17
2009	0.06	0.05	0.07	0.14
2010	0.02	0.05	0.07	0.21
2011	0.03	0.00	0.10	0.18
2012	-0.60	0.00	0.12	0.18
2013	-0.03	0.00	0.13	0.18

Generally, mean and SD for non-fraudulent observations is higher than fraudulent observations between 2004 and 2013. The result indicates that non-fraudulent observations have higher return on assets than fraudulent observations.

Consistent with Loebbecke & Willingham (1988), Loebbecke *et al*. (1989), Bell *et al*. (1991), Beasley (1996), Bell & Carcello (2000) and Lou & Wang (2009), the statistics indicate that the vast majority of top management in high-growth PLCs do not appear to commit significant fraud. In contrast to Abdolmohammadi and McQuade (2002), it was found that most of Malaysian PLCs did not make investment decisions in risky assets in such a way that their own wealth can be maximised.

Moreover, several fraudulent observations have a negative growth (return on assets) in the fraud years, particularly in 2007, 2008, 2012 and 2013. The negative trends indicate that top management in particular fraudulent observations did not manipulate return on assets to show the best possible performance to the shareholders, in spite of suffering from a bad performance in reality. These results suggest that these fraudulent PLCs were merely having bad growth performances. This might have resulted from the impact of the global economic recession that occurred during this period. The credit crunch at the end of 2007 became a full financial meltdown by the middle of 2008, and finally turned into a global recession (BBC, 2008a). As a developing Asian country, Malaysia was badly affected by the financial crisis. As a result, most of the Malaysian PLCs suffered from poor GROWTH performance. As illustrated in Figure 6.2, FBMKLCI[32] was recorded at below 1,000 points between 2007 and 2009.

In addition, poor growth performances on the FBMKLCI may have been affected by a number of political crises particularly in 2008.[33] During that year, the ruling party (i.e. Barisan Nasional-BN) recorded the worst result in the Malaysian General Election (GE) since 1969.

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[32] FBMKLCI = FTSE Bursa Malaysia Kuala Lumpur Composite Index.
[33] In Chapter 1 (Section 1.1), this research has indicated Malaysia as one of the political-driven developing countries in Asia.

Figure 6.2: KLCI Performances between January 2004 and January 2016
Source: Bloomberg, 2016.

The opposition parties won 82 seats (out of 222 seats in parliament) or 36.9% of parliamentary seats, while the BN only managed to secure the remaining 140 seats or 63.1%. As a result, many political analysts described the GE's result as a 'political tsunami' (The Economist, 2008). In the same year, the Permatang Pauh by-election witnessed the return of Anwar Ibrahim[34] (the opposition party leader) to politics after his ten years' incarceration (BBC, 2008b). These two major events in the Malaysian political landscape may have affected investors' confidence leading to reduced financial markets during that particular year, which may have contributed to bad growth performances of PLCs.

All non-fraudulent observations have maintained a consistent positive return on assets trend from 2004 to 2013. SD for non-fraudulent observations is mostly larger than fraudulent observations. This indicates that data points are distant from the mean, while a small SD indicates that the data points are close to the mean (Field, 2013).

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[34] Anwar Ibrahim was a former Malaysian Deputy Prime Minister before being accused for sexual misconduct and corruption charges in 1998. Since then, Malaysian political landscape became instable as Anwar Ibrahim's supporters leaved BN as formed a new party known as 'People Justice Party'.

Thus, the results suggest that non-fraudulent sampling nits have a larger variation of return on assets (distribution between the lowest and highest values) than fraudulent observations. In other words, return on assets for non-fraudulent observations is more spread from the mean, indicating that some these observations have an extremely high ROA than other non-fraudulent observations.

The second proxy variable on growth measures changes in sales (Δ Sales), which are focusing on the percentage increase or decrease in sales between the two time periods for each year as follows:

(Current Sales – Previous Sales) / Previous Sales x 100 = Changes in Sales Growth (%)

The analysis begins with comparing mean and SD on the sales volume for each year for both fraudulent and non-fraudulent observations as shown in Table 6.4.

Table 6.4: Mean and Standard Deviation for Sales Volume

Year	Fraudulent Observations		Non-Fraudulent Observations	
	Mean (RM' 000)	SD (RM' 000)	Mean (RM' 000)	SD (RM' 000)
2004	1,346,031	1,585,043	800,054	1,463,502
2005	823,046	1,282,026	914,456	1,639,224
2006	1,244,989	2,356,295	897,482	1,503,543
2007	676,958	1,015,468	932,237	1,597,408
2008	136,764	109,331	1,038,434	1,708,238
2009	3,449,248	3,439,204	882,178	1,490,476
2010	1,565,842	1,727,923	1,064,675	1,776,045
2011	30,313	0	1,219,715	2,037,842
2012	231,762	0	1,305,634	2,293,307
2013	291,511	0	1,283,006	2,164,022

Generally, mean and SD for non-fraudulent observations is higher than fraudulent observations except for 2004, 2006, 2009 and 2010. The result indicates that non-fraudulent observations have higher sales volume than fraudulent observations. Based on the sales volume, this research compares the changes in sales. Table 6.5 displays the results.

221

Table 6.5: Mean and Standard Deviation for the Changes in Sales (Δ Sales)

Year	Fraudulent Observations		Non-Fraudulent Observations	
	Mean (%)	SD (%)	Mean (%)	SD (%)
2004	12.31	7.32	11.50	13.79
2005	14.28	18.37	15.29	36.53
2006	23.26	42.59	14.65	57.68
2007	-19.32	40.76	9.03	34.83
2008	8.65	16.54	13.21	57.86
2009	20.84	135.38	4.59	35.71
2010	5.34	38.79	20.53	103.11
2011	0.67	0	35.92	279.72
2012	0.43	0	11.44	32.29
2013	12.77	0	11.05	51.09

Generally, mean for non-fraudulent observations is higher than fraudulent observations except for 2004, 2006 and 2009. The result indicates that non-fraudulent observations have higher changes in sales than fraudulent observations. In contrast to H1a, several fraudulent observations show a decrease trend on the changes in sales, particularly in 2007, 2008, 2010, 2011 and 2012. Negative changes in 2007 indicate that management in particular fraudulent observations were suffering from a bad performance in sales as compared to previous years.

On the other hand, most of non-fraudulent observations have maintained a consistent trend for the changes in sales from 2004 to 2013. Additionally, SD for non-fraudulent observations is mostly larger than fraudulent observations except for 2007 and 2009. Therefore, the changes in sales for non-fraudulent observations are more spread from the mean, indicating that some these observations have the extremely high changes than other non-fraudulent observations as shown in 2010 and 2011.

Based on the results on the asset growth (return on assets) and sales growth (changes in sales), this research makes a tentative conclusion that there is a possibility that growth is not significantly indicative of the likelihood of FFR among Malaysian PLCs. The results suggests that even non-fraudulent PLCs have a rapid growth although these PLCs are not involved in FFR activities.

6.2   PLCs' Leverage (LEV)

PLCs' leverage is a proxy variable used to test Sub-Hypothesis 1b in order to measure the relationship between pressure and the likelihood of FFR among Malaysian PLCs. Sub-Hypothesis 1b predicts "high leverage in Malaysian PLCs indicates a higher tendency towards the likelihood of FFR." This research predicts a high-debt structure in some of the Malaysian PLCs may increase the likelihood of FFR. The prediction is made based on the assumption that fraudulent Malaysian PLCs may shift financial risk from equity owners and management to debt owners to cope with high financial pressure. As such, this research employs the long-term debt-to-equity ratio to measure PLCs' leverage as shown below:

$$\text{Leverage} = \text{Total Long-term Debt} / \text{Total Equity}$$

Table 6.6 displays a comparison by mean and SD for each year for both fraudulent and non-fraudulent observations.

Table 6.6: Mean and Standard Deviation for Leverage (LEV)

Year	Fraudulent Observations		Non-Fraudulent Observations	
	Mean	SD	Mean	SD
2004	0.56	0.24	1.24	4.43
2005	4.17	5.18	1.31	4.49
2006	1.52	1.17	1.30	4.43
2007	4.70	6.87	0.97	1.35
2008	2.08	2.40	1.06	1.78
2009	1.73	0.88	1.21	3.70
2010	1.69	1.57	1.27	3.93
2011	1.68	0.00	0.84	2.63
2012	2.24	0.00	0.41	5.09
2013	3.10	0.00	1.11	3.99

Generally, mean and SD for fraudulent observations is higher than non-fraudulent observations between 2004 and 2013. The result indicates that fraudulent observations have higher leverage than non-fraudulent observations. Fraudulent observations have higher leverage than non-fraudulent observations in almost all fraud years, except for 2004.

The statistics seem to be consistent with Person (1995), who claimed that fraudulent companies have higher financial leverage than non-fraudulent companies. The results suggest that fraudulent observations might shift PLCs' financial risk from equity owners to debt owners in order to cope with high financial pressure.

However, SD for non-fraudulent observations is mostly larger than fraudulent observations, except for the year 2005, 2007 and 2008. The results suggest that non-fraudulent observations have larger variations of leverage than fraudulent observations in most years. A detailed examination on these variations indicated that several non-fraudulent PLCs from construction industry had a negative leverage. These PLCs could have believed that a negative leverage would become a profitable venture with tax deductions when the properties were eventually sold for a capital gain (Schmidt, 2013).

Furthermore, Christie (1982) suggested that the negative elasticity of variance with respect to value of equity is found to be attributable to a negative financial leverage. This is because under some circumstances, the equity value could decrease monotonically, and eventually become negative leverage (Kraus & Litzenberger, 1973). Thus, in the context of this research, negative leverage could have resulted from the fallen property prices and negative equities. Nevertheless, the presence of negative leverage in the observation suggests the uniqueness of this research within the Malaysian context. Based on the results, this research makes a tentative conclusion that there is a possibility that leverage is significantly indicative of the likelihood of FFR among Malaysian PLCs.

6.3   Composition of Board of Directors (COMBODs)

Composition of Board of Directors is a proxy variable used to test Sub-Hypothesis 2a in order to measure opportunity and the likelihood of FFR among Malaysian PLCs. Sub-Hypothesis 2a predicts "lower percentage of outside members (Independent Non-Executive Directors) in Board of Directors (BODs) indicates a higher tendency towards the likelihood of FFR". This research predicts one of the reasons for FFR is caused by fewer numbers of outside members (in this research are represented by Independent Non-Executive Directors) in the composition of Board of Directors. This situation will provide opportunity to inside members (in this research are referred to as 'Executive Directors') to dominate or manipulate Malaysian PLCs' major decisions, which can eventually lead to FFR.

The decision of choosing 33.3% in the composition of Board of Directors as a benchmark for this differentiation is made based on minimum requirement for Independent Directors set by Bursa Malaysia. However, this requirement was set in 2010 in conjuction with recommendations made by The Malaysian Code on Corporate Governance. As such, the descriptive statistics indicate that some observations are still under this threshold. Table 6.7 displays the summary of frequency for the composition of Board of Directors.

Table 6.7: Summary of Frequency for Composition of Board of Directors (COMBODs)

Category for COMBODs	Fraudulent Observations		Non-Fraudulent Observations	
	Frequency (N)	Valid Percentage (%)	Frequency (N)	Valid Percentage (%)
PLCs with more than 33.3% of Independent Non-Executive Directors	27	60.0	1,414	90.9
PLCs with less than 33.3% of Independent Non-Executive Directors	18	40.0	141	9.1
Total:	**45**	**100**	**1,555**	**100**

Table 6.7 indicates that 27 fraudulent observations or 60.0% have more than 33.3% of Independent Non-Executive Directors in their composition of Board of Directors in the fraud years. On the other hand, 18 fraudulent observations or 40.0% have less than 33.3% of Independent Non-Executive Directors in the fraud years. Meanwhile, 1,414 non-fraudulent observations or 90.9% have more than 33.3% of Independent Non-Executive Directors in their composition of Board of Directors, leaving 141 non-fraudulent observations or 9.1% have less than 33.3% of Independent Non-Executive Directors.

The results suggests that fraudulent observations that appoint less than 33.3% of Independent Non-Executive Directors in their composition of Board of Directors are 30.9% higher than non-fraudulent observations (40.0% - 9.1%). These results corroborate the notion of previous research studies, which suggested that fraudulent PLCs have fewer outside members in their composition of Board of Directors as compared to non-fraudulent PLCs (Beasley, 1996; Dechow *et al*., 1996; Beasley *et al*., 2000; Dunn, 2004). Table 6.8 specifies this finding by year.

Table 6.8: Frequency for Composition of Board of Directors (COMBODs) by Year

Year	Fraudulent Observations		Non-Fraudulent Observations	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
2004	3	6.7	22	1.4
2005	4	8.9	17	1.1
2006	3	6.7	18	1.2
2007	1	2.2	18	1.2
2008	3	6.7	13	0.8
2009	2	4.4	15	1.0
2010	1	2.2	14	0.9
2011	1	2.2	8	0.5
2012	0	0.0	10	0.6
2013	0	0.0	6	0.4
Total:	18	40.0	141	9.1

Table 6.8 suggests that there is a relatively low percentage among fraudulent observations for having less than 33.3% of Independent Non-Executive Directors in their composition of Board of Directors in each of the fraud year.

The highest frequency is recorded in 2005 (4 fraudulent observations or 8.9%). Nevertheless, percentage for fraudulent observations that have less than 33.3% of Independent Non-Executive Directors in their composition of Board of Directors is higher than non-fraudulent observations in every year. As explained earlier, the χ^2 test is employed to test associations between FFR and categorical variables. In principle, the test is conducted based on the following formula:

$$\chi^2 = \sum \frac{(\text{Observed Frequency} - \text{Expected Frequency})^2}{\text{Expected Frequency}}$$

Based on example tables, distributions of χ^2 statistic is calculated with (r-1) (c-1) degrees of freedom, where r represents the number of rows in the two-way table and c represents the number of columns (Laerd, 2013). This research is interested in p-value, in which a significant p-value (< 0.01) suggests that associations between FFR and these variables are present. The p-value for the χ^2 test is p (> χ^2), the probability of observing a value at least as extreme as the test statistic for a chi-square distribution (Laerd, 2013). Since all calculations have been computed by IBM SPSS, example table (as shown in Table 6.9) only displays the total values of the composition of Board of Directors (from 2004 to 2013) for fraudulent and non-fraudulent observations, followed by p-value for the χ^2 test.

Table 6.9: Example Table for Composition of Board of Directors (COMBODs)

Category for COMBODs	Fraudulent Observations	Non-Fraudulent Observations	Total
PLCs that have more than 33.3% of Independent Non-Executive Directors	27	1,414	**1,441**
PLCs that have less than 33.3% of Independent Non-Executive Directors	18	141	**159**
Total:	**45**	**1,555**	**1,600**

Table 6.9 indicates that there is a significant relationship between the two variables (χ^2 value = 46.76, p < 0.01). Therefore, it appears that these variables are associated to each other. Based on the the results from contingency table and example table, this research makes a tentative conclusion that there is a possibility that the composition of Board of Directors is significantly indicative of the likelihood of FFR among Malaysian PLCs.

6.4   Turnover of Head of Internal Auditor (ΔHIA)

Turnover of Head of Internal Auditor is another proxy variable used to measure the relationship between opportunity and the likelihood of FFR among Malaysian PLCs. Sub-Hypothesis 2b predicts "high turnover frequency of Head of Internal Auditor (HIA) indicates a higher tendency towards the likelihood of FFR." This research predicts one of the reasons for frequent turnover of HIA in Malaysian PLCs is caused by management decision to change HIA as an action to reduce the detection of FFR activities. Table 6.10 displays the summary of frequency for ΔHIA.

Table 6.10: Frequency for Turnover of Head of Internal Auditor (ΔHIA)

Category for ΔHIA	Fraudulent Observations		Non-Fraudulent Observations	
	Frequency (N)	Valid Percentage (%)	Frequency (N)	Valid Percentage (%)
PLCs without turnover of HIA	22	48.9	1,347	86.6
PLCs with turnover of HIA	23	51.1	208	13.4
Total:	**45**	**100.0**	**1,555**	**100.0**

Table 6.10 indicates that 22 fraudulent observations or 48.9% did not change their HIA in the fraud years. 23 fraudulent observations or 51.1% had changed their HIA in the fraud years.

1,347 non-fraudulent observations or 86.6% did not change their HIA and 208 non-fraudulent observations or 13.4% had changed their HIA between 2004 and 2013. The results suggests fraudulent observations that changed their HIA are 37.7% higher than non-fraudulent observations (51.1% - 13.4%). Meanwhile, Table 6.11 specifies this finding by year. Table 6.11 suggests that there is a relatively low percentage among fraudulent observations that changed their HIA in each of the fraud year. The highest frequency is recorded in 2010 (5 fraudulent observations or 11.1%). Nevertheless, percentage for fraudulent observations that changed their HIA is higher than non-fraudulent observations in almost every year except for 2004.

Table 6.11: Frequency for Turnover of Head of Internal Auditor (ΔHIA) by Year

Year	Fraudulent Observations		Non-Fraudulent Observations	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
2004	0	0	1	0.1
2005	4	8.9	16	1.0
2006	3	6.7	15	1.0
2007	3	6.7	14	0.9
2008	3	6.7	34	2.2
2009	2	4.4	35	2.3
2010	5	11.1	24	1.5
2011	1	2.2	19	1.2
2012	1	2.2	26	1.7
2013	1	2.2	24	1.5
Total:	23	51.1	208	13.4

This research also analyses turnover of HIA for fraudulent observations in the preceding of the fraud years to observe the trend of the turnover. The analysis intends to find the answer whether these fraudulent observations have changed their HIA in a year before the fraudulent took place. If turnover of HIA occurred in a year before the fraud years (preceding years), there is a high possibility that the changes are intentionally made by top management to reduce the detection of FFR activities.

Turnover of HIA in preceding years would create more opportunity for top management to plan their FFR activities systematically. This is because most of newly-appointed HIA would need more time to fully understand all details concerning financial activities in the particular PLC. Turnover of HIA in the fraud years suggests that current HIA who was appointed before or during preceding years was replaced with another HIA. As a result, FFR activities can be concealed easily. Table 6.12 displays the results.

Table 6.12: Comparison for Frequency and Percentage of Turnover of Head of Internal Auditor (ΔHIA) between Fraud Years and Preceding Years

Year	Fraud Years		Preceding Years	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
2003	-	-	1	2.2
2004	0	0.0	4	8.9
2005	4	8.9	3	6.7
2006	3	6.7	3	6.7
2007	3	6.7	3	6.7
2008	3	6.7	2	4.4
2009	2	4.4	4	8.9
2010	5	11.1	1	2.2
2011	1	2.2	1	2.2
2012	1	2.2	1	2.2
2013	1	2.2	-	0.0
Total:	23	51.1	23	51.1

Table 6.12 shows that the frequency and percentage for the turnover of HIA in preceding years is as high as in the fraud years. Coincidently, the frequency and percentage for turnover of HIA before the fraud years is 23 observations and 51.1% respectively. Table 6.12 also indicates that turnover of HIA occurred in each year before the fraud years. The highest frequency is recorded in 2004 and 2009. All fraudulent observations that made the changes in 2005 had also changed HIA a year before that (2004). The statistics are consistent with results obtained by Loebbecke *et al*. (1989) who found that 36% of the fraud cases were perpetrated in the first two years of an auditor's tenure.

Similar trend can be observed in 2006, 2007, 2008, 2009, 2011, 2012 and 2013. Table 6.13 displays the total values of turnover of HIA (from 2004 to 2013) for fraudulent and non-fraudulent observations, followed by p-value for the χ^2 test.

Table 6.13: Example Table for Turnover of Head of Internal Auditor (ΔHIA)

Category for ΔHIA	Fraudulent Observations	Non-Fraudulent Observations	Total
PLCs without turnover of HIA	22	1,347	1,369
PLCs with turnover of HIA	23	208	231
Total:	**45**	**1,555**	**1,600**

Table 6.13 shows that there is a significant relationship between the two variables (χ^2 value = 50.41, $p < 0.01$). Therefore, it appears that these variables are associated to each other. Based on the the results from contingency table and example table, this research makes a tentative conclusion that there is a possibility that turnover of HIA is significantly indicative of the likelihood of FFR among Malaysian PLCs.

6.5 Historical Financial Restatement Times (HFRTs)

Historical financial restatement times are the proxy variable used to test Sub-Hypothesis 3a in order to measure management attitude in Malaysian PLCs towards the likelihood of FFR. Sub-Hypothesis 3a predicts "high historical financial restatement times (HFRTs) indicate a higher tendency towards the likelihood of FFR." Since individual attitude is difficult to be measured by quantitative method, this research predicts frequent historical financial restatement can reflect weaknesses among PLCs' top management and can be considered as management attitude. In the context of this research, all 45 fraudulent observations have been mandated for historical financial restatement by Bursa Malaysia and Securities Commission Malaysia (SC). Thus, Table 6.14 only displays the frequency summary of historical financial restatement times for non-fraudulent observations.

Table 6.14: Frequency Summary for Historical Financial Restatement Times (HFRTs)

Category for HFRTs	Non-fraudulent Observations	
	Frequency (N)	Valid Percentage (%)
PLCs not mandated for HFRTs	1,217	78.3
PLCs mandated for HFRTs	338	21.7
Total:	**1,555**	**100.0**

Table 6.14 indicates that 1,217 non-fraudulent observations or 78.3% were not mandated for historical financial restatement and 338 non-fraudulent observations or 21.7% were mandated for historical financial restatement. The results suggests fraudulent observations that were mandated for historical financial restatement are 78.3% higher than non-fraudulent observations (100% - 21.7%). This huge difference match those observed in earlier research studies (i.e. Moriarty & Livingston, 2001; Aier *et al*., 2005;) that emphasised on the increasing trend of accounting restatements.

Meanwhile, Table 6.15 specifies this finding by year. Table 6.15 suggests that there is a relatively high percentage among fraudulent observations that were mandated for historical financial restatement in the fraud years, especially from 2004 to 2010. The highest frequency is recorded in 2006 (9 fraudulent observations or 20.0%). These percentages are higher than non-fraudulent observations in every year.

Table 6.15: Frequency for Historical Financial Restatement Times (HFRTs) by Year

Year	Fraudulent Observations		Non-Fraudulent Observations	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
2004	4	8.9	37	2.3
2005	5	11.1	30	1.9
2006	9	20.0	31	2.0
2007	8	17.9	43	2.8
2008	6	13.3	29	1.9
2009	5	11.1	23	1.5
2010	5	11.1	58	3.7
2011	1	2.2	33	2.1
2012	1	2.2	23	1.5
2013	1	2.2	31	2.0
Total:	**45**	**100**	**338**	**21.7**

Table 6.16 displays the total values of historical financial restatement (from 2004 to 2013) for fraudulent and non-fraudulent observations, followed by p-value for the χ^2 test.

Table 6.16: Example Table for Historical Financial Restatement Times (HFRTs)

Category for HFRTs	Fraudulent Observations	Non-Fraudulent Observations	Total
PLCs not mandated for HFRTs	0	1,217	1,217
PLCs mandated for HFRTs	45	338	383
Total:	**45**	**1,555**	**1,600**

Table 6.16 shows that there is a significant relationship between the two variables (χ^2 value = 147.13, p < 0.01). Therefore, it appears that these variables are associated to each other. Based on the the results from contingency table and example table, this research makes a tentative conclusion that there is a possibility that historical financial restatement are significantly indicative of the likelihood of FFR among Malaysian PLCs.

6.6 Changes in Accounting Policies (ΔACCPOL)

Changes in accounting policies are the proxy variable used to test Sub-Hypothesis 3b in order to measure rationalisation and the likelihood of FFR among Malaysian PLCs. Sub-Hypothesis 3b predicts "frequent changes in PLCs' accounting policies indicate a higher tendency towards the likelihood of FFR." This research predicts frequent changes in accounting policies can rationalise FFR actions through variation of accounting policies since these changes are allowed by accounting standards. Table 6.17 shows the summary of frequency for the changes in accounting policies.

Table 6.17: Summary of Frequency on Changes in Accounting Policies (ΔACCPOL)

Category for ΔACCPOL	Fraudulent Observations		Non-fraudulent Observations	
	Frequency (N)	Valid Percentage (%)	Frequency (N)	Valid Percentage (%)
PLCs without ΔACCPOL	9	20.0	1,198	77.0
PLCs with ΔACCPOL	36	80.0	357	23.0
Total:	**45**	**100**	**1,555**	**100**

Table 6.17 indicates that 36 fraudulent observations or 80% have changed their accounting policies in the fraud years. Only 9 fraudulent observations or 20% did not change their accounting policies. In contrast, 1,198 non-fraudulent observations or 77% did not change their accounting policies, leaving 357 non-fraudulent observations or 23% that have changed the accounting policies. The results suggests that fraudulent observations, which changed their accounting policies are 57% higher than non-fraudulent observations (80% - 23%).

One of the reasons for this huge difference is because changing the accounting policies is legally allowable. This claim is in agreement with Healy (1985) who mentioned that changing the accounting policies involves the selection of accounting procedures and estimations, which are allowable under generally accepted accounting principles (GAAP). Table 6.18 specifies this finding by year.

Table 6.18: Frequency for Changes in Accounting Policies (ΔACCPOL) by Year

Year	Fraudulent Observations		Non-Fraudulent Observations	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
2004	4	8.9	64	4.1
2005	4	8.9	10	0.6
2006	6	13.3	23	1.5
2007	7	15.6	95	6.1
2008	6	13.3	20	1.3
2009	4	8.9	8	0.5
2010	3	6.7	61	4.0
2011	1	2.2	30	2.0
2012	0	0.0	24	1.5
2013	1	2.2	22	1.4
Total:	**36**	**80**	**357**	**23**

Table 6.18 suggests that there is a relatively high percentage among fraudulent observations that have changed accounting policies in the fraud years, especially from 2004 to 2010. The highest frequency is recorded in 2007 (7 fraudulent observations or 15.6%). These percentages are higher than non-fraudulent observations in almost every year but 2012. Table 6.19 displays the total values of the changes in accounting policies (from 2004 to 2013) for fraudulent and non-fraudulent observations, followed by p-value from the χ^2 test.

Table 6.19: Example Table for Changes in Accounting Policies (ΔACCPOL)

Category for ΔACCPOL	Fraudulent Observations	Non- Fraudulent Observations	Total
PLCs without ΔACCPOL	9	1,198	1,207
PLCs with ΔACCPOL	36	357	393
Total:	**45**	**1,555**	**1,600**

Table 6.19 shows that there is a significant relationship between the two variables (χ^2 value = 76.80, p < 0.01). Therefore, it appears that these variables are associated to each other. Based on the the results from contingency table and example table, this research makes a tentative conclusion that there is a possibility that frequent changes in accounting policies is significantly indicative of the likelihood of FFR among Malaysian PLCs.

6.7 Undeclared Policies on Doubtful Debt and Accounts Receivable (UNDPOL)

Undeclared policies on doubtful debt and accounts receivable is a proxy variable used to test Sub-Hypothesis 4a in order to measure capability/competence and the likelihood of FFR among Malaysian PLCs. Sub-Hypothesis 4a predicts "undeclared policies on doubtful debts and account receivable indicate a higher tendency towards the likelihood of FFR."

This research predicts undeclared policies on doubtful debt and accounts receivable as one of the subjective judgements that can lead to the likelihood of FFR among Malaysian PLCs. Table 6.20 shows the summary of frequency for undeclared policies on doubtful debt and accounts receivable.

Table 6.20: Summary of Frequency for Undeclared Policies on Doubtful Debt and Accounts Receivable (UNDPOL)

Category for UNDPOL	Fraudulent Observations		Non-fraudulent Observations	
	Frequency (N)	Valid Percentage (%)	Frequency (N)	Valid Percentage (%)
PLCs that declare policies on doubtful debts & accounts receivable	44	97.8	1,553	99.9
PLCs that do not declare policies on doubtful debts & accounts receivable	1	2.2	2	0.1
Total:	**45**	**100**	**1,555**	**100**

Table 6.20 indicates that almost all fraudulent observations or 97.8% have declared policies on doubtful debts and account receivables in the fraud years, leaving only 1 PLC or 2.2% that have not made the declaration. Similarly, 1,553 non-fraudulent observations or 99.9% have declared policies on doubtful debts and account receivables, leaving only 2 observations or 0.1% that have not made the declaration. The results suggests an insignificant difference of 2.1% on undeclared policies on doubtful debt and accounts receivable between fraudulent and non-fraudulent observations (2.2% - 0.1%). The specific finding by year is not tabulated since there is a very small percentage of undeclared policies on doubtful debt and accounts receivable for both fraudulent and non-fraudulent observations.

Meanwhile, Table 6.21 displays the total values of undeclared policies on doubtful debt and accounts receivable (from 2004 to 2013) for fraudulent and non-fraudulent observations, followed by p-value for the χ^2 test.

Table 6.21: Example Table for Undeclared Policies on Doubtful Debt and Accounts Receivable (UNDPOL)

Category for UNDPOL	Fraudulent Observations	Non-Fraudulent Observations	Total
PLCs that declare policies on doubtful debts & accounts receivable	44	1,553	1,597
PLCs that do not declare policies on doubtful debts & accounts receivable	1	2	3
Total:	**45**	**1,555**	**1,600**

Table 6.21 shows that there is a significant relationship between the two variables (χ^2 value = 10.24, $p < 0.01$). Therefore, it appears that these variables are associated to each other. Based on the the results from contingency table and example table, this research makes a tentative conclusion that there is a possibility that undeclared policies on doubtful debt and accounts receivable is significantly indicative of the likelihood of FFR among Malaysian PLCs.

6.8 No Access to Special Purpose Vehicles' Financial Reports (SPVACC)

No access to special purpose vehicles' financial reports is another proxy variable used to measure capability/competence and the likelihood of FFR among Malaysian PLCs. Sub-Hypothesis 4b predicts "no access to SPVs' financial reports indicates a higher tendency towards the likelihood of FFR." This research predicts fraudulent PLCs are more likely to hide their excessive liabilities and doubtful transactions (including FFR activities) through the establishment of separate financial reports in SPVs. Observations on 1,600 annual reports suggests that most of Malaysian PLCs have formed SPVs in order to manage one-off projects or programmes. In fact, the establishment of SPVs is seemed to be common practices among Malaysian PLCs. Table 6.22 shows the summary of frequency for SPVACC.

Table 6.22: Summary of Frequency for No Access to Special Purpose Vehicles' Financial Reports (SPVACC)

Category for SPVACC	Fraudulent Observations		Non-fraudulent Observations	
	Frequency (N)	Valid Percentage (%)	Frequency (N)	Valid Percentage (%)
PLCs that do not limit public access to SPVs' financial reports	3	6.7	38	2.4
PLCs that limit public access to SPVs' financial reports	42	93.3	1,517	97.6
Total:	45	100	1,555	100

Table 6.22 indicates that most of fraudulent and non-fraudulent observations did not provide access to their SPVs' financial reports (42 fraudulent observations or 93.3%; and 1,517 non-fraudulent observations or 97.6%). Only 3 fraudulent observations (or 6.7%) and 38 non-fraudulent observations (2.4%) had provided access to SPVs' financial reports. The results suggests an insignificant difference of 4.3% between fraudulent and non-fraudulent observations that did not provide access to SPVs' financial reports (97.6% - 93.3%). Table 6.23 specifies this finding by year.

Table 6.23: Frequency for No Access to Special Purpose Vehicles' Financial Reports (SPVACC) by Year

Year	Fraudulent Observations		Non-Fraudulent Observations	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
2004	4	8.9	154	9.9
2005	5	11.1	150	9.6
2006	8	17.8	149	9.6
2007	8	17.8	148	9.5
2008	6	13.3	149	9.6
2009	5	11.1	150	9.7
2010	3	6.7	151	9.7
2011	1	2.2	155	10.0
2012	1	2.2	155	10.0
2013	1	2.2	156	10.0
Total:	42	93.3	1,517	97.6

Table 6.23 suggests that there is a relatively high percentage among fraudulent observations that did not provide access to their SPVs' financial reports in the fraud years, especially from 2004 to 2010. The highest frequency is recorded in 2006 and 2007 (8 fraudulent observations or 17.8% respectively).

Similarly, non-fraudulent observations have shown a consistent pattern in not providing access to their SPVs' financial reports between 2004 and 2013. The results also suggests that the difference between fraudulent and non-fraudulent observations is almost identical. Figure 6.11 illustrates the percentage between fraudulent and non-fraudulent observations.

Meanwhile, Table 6.24 displays the total values of access to SPVs' financial reports (from 2004 to 2013) for fraudulent and non-fraudulent observations, followed by p-value for the χ^2 test. Table 6.24 shows that the relationship between the two variables is not significant (χ^2 value = 3.124, p > 0.01). Therefore, it appears that these variables are not associated to each other.

Table 6.24: Example Table for No Access to Special Purpose Vehicles' Financial Reports (SPVACC)

Category for SPVACC	Fraudulent Observations	Non-Fraudulent Observations	Total
PLCs that do not limit public access to SPVs' financial reports	3	38	41
PLCs that limit public access to SPVs' financial reports	42	1,517	1,559
Total:	**45**	**1,555**	**1,600**

Based on the results from contingency table and example table, this research makes a tentative conclusion that there is a possibility that no access to SPVs' financial reports is not significantly indicative of the likelihood of FFR among Malaysian PLCs.

6.9   Chief Executive Officer Duality (CEODUAL)

Chief Executive Officer duality is a proxy variable used to test Sub-Hypothesis 5a in order to measure arrogance and the likelihood of FFR among Malaysian PLCs. Sub-Hypothesis 5a predicts "Chief Executive Officer (CEO) duality indicates a higher tendency towards the likelihood of FFR."

This research predicts a person who accumulates title as the CEO and Chairman of BODs in the same Malaysian PLC (also known as 'CEO duality') may exhibit arrogance. Hence, the CEO tends to dominate major decisions, which eventually lead to FFR. Table 6.25 shows the summary of frequency for CEO duality.

Table 6.25: Summary of Frequency on Chief Executive Officer Duality (CEODUAL)

Category for CEODUAL	Fraudulent Observations		Non-fraudulent Observations	
	Frequency (N)	Valid Percentage (%)	Frequency (N)	Valid Percentage (%)
PLCs that do not practise CEO duality	36	80.0	1,493	96.0
PLCs that practise CEO duality	9	20.0	62	4.0
Total:	**45**	**100**	**1,555**	**100**

Table 6.25 indicates that 36 fraudulent observations or 80% did not practise CEO duality in the fraud years, while 9 fraudulent observations or 20% practised CEO duality. Meanwhile, 1,493 non-fraudulent observations or 96% did not practise CEO duality and 62 non-fraudulent observations or 4.0% practise CEO duality between 2004 and 2013. The results suggests that fraudulent observations with CEO duality are 16% higher than non-fraudulent observations (20% - 4%). Table 6.26 specifies this finding by year.

Table 6.26: Frequency for Chief Executive Officer Duality (CEODUAL) by Year

Year	Fraudulent Observations		Non-Fraudulent Observations	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
2004	1	2.2	4	0.3
2005	0	0.0	8	0.6
2006	2	4.5	6	0.3
2007	1	2.2	7	0.4
2008	1	2.2	7	0.4
2009	1	2.2	8	0.6
2010	2	4.5	7	0.4
2011	1	2.2	7	0.4
2012	0	0.0	4	0.3
2013	0	0.0	4	0.3
Total:	**9**	**20**	**62**	**4**

Table 6.26 suggests that there is a fair percentage among fraudulent observations with CEO duality, especially in the fraud years. The highest frequency is recorded in 2006 and 2010 (4.5% respectively). Meanwhile, Table 6.27 displays the total values of CEO duality (from 2004 to 2013) for fraudulent and non-fraudulent observations, followed by p-value for the χ^2 test.

Table 6.27: Example Table for Chief Executive Officer Duality (CEODUAL)

Category for CEODUAL	Fraudulent Observations	Non-Fraudulent Observations	Total
PLCs that do not practise CEO duality	36	1,493	1,529
PLCs that practise CEO duality	9	62	71
Total:	**45**	**1,555**	**1,600**

Table 6.27 shows that there is a significant relationship between the two variables (χ^2 value = 26.44, p < 0.01). Therefore, it appears that these variables are associated to each other. Based on the the results from contingency table and example table, this research makes a tentative conclusion that there is a possibility that CEO duality is significantly indicative of the likelihood of FFR among Malaysian PLCs.

6.10   CEO and/or Chairman of BODs who is also a Politician (POLCEO)

PLCs that appoint their CEO and/or Chairman of BODs who is also a politician are another proxy variable used to measure arrogance and the likelihood of FFR among Malaysian PLCs. Sub-Hypothesis 5b predicts "A Chief Executive Officer (CEO) and/or Chairman of BODs in a Malaysian PLC who is also a politician indicates a higher tendency towards the likelihood of FFR". This research predicts a CEO and/or Chairman of BODs in Malaysian PLC who is also a politician may cultivate the element of arrogance (in term of attitude of superiority and entitlement) through a combination of politics' interest and power.

Hence, he or she tends to dominate major decisions in the particular PLC, which eventually leads to FFR. Table 6.28 displays the summary of frequency for CEO and/or Chairman of BODs who is also a politician.

Table 6.28: Summary of Frequency on PLCs that Appoint Their CEO and/or Chairman of BODs Who is also a Politician (POLCEO)

Category for POLCEO	Fraudulent Observations		Non-fraudulent Sampling Units	
	Frequency (N)	Valid Percentage (%)	Frequency (N)	Valid Percentage (%)
A CEO and/or Chairman of BODs who is not a politician	40	89.0	1,362	87.6
A CEO and/or Chairman of BODs who is also a politician	5	11.0	193	12.4
Total:	**45**	**100**	**1,555**	**100**

Table 6.28 indicates that CEO and/or Chairman of BODs from 40 fraudulent observations or 89% were not politicians in the fraud years, leaving CEO and/or Chairman of BODs from 5 fraudulent observations or 11% who were also politicians. Meanwhile, CEO and/or Chairman of BODs from 1,362 non-fraudulent observations or 87.6% were not politicians and CEO and/or Chairman of BODs from 193 non-fraudulent observations or 12.4% were politicians. The results suggests a difference of 1.4% between fraudulent and non-fraudulent observations (12.4% - 11.0%). Table 6.29 specifies this finding by year.

Table 6.29: Summary of Frequency for PLCs that Appoint their CEO and/or Chairman of BODs Who is also a Politician (POLCEO) by Year

Year	Fraudulent Observations		Non-Fraudulent Observations	
	Frequency (N)	Percentage (%)	Frequency (N)	Percentage (%)
2004	1	2.2	18	1.2
2005	1	2.2	19	1.2
2006	0	0.0	19	1.2
2007	1	2.2	19	1.2
2008	0	0.0	20	1.3
2009	1	2.2	20	1.3
2010	0	0.0	19	1.2
2011	0	0.0	19	1.2
2012	1	2.2	19	1.2
2013	0	0.0	21	1.4
Total:	**5**	**11**	**193**	**12.4**

Table 6.29 suggests that there is a relatively low percentage for CEO and/or Chairman of BODs who is also a politician between fraudulent and non-fraudulent observations. In contrast with H5b, the percentages for CEO and/or Chairman of BODs who is also a politician in non-fraudulent observations are 1.4% higher than non-fraudulent observations in average. Meanwhile, Table 6.30 displays the total values of CEO and/or Chairman of BODs who is also a politician (from 2004 to 2013) for fraudulent and non-fraudulent observations, followed by p-value for the χ^2 test.

Table 6.30: Example Table for PLCs that Appoint Their CEO and/or Chairman of BODs Who is also a Politician (POLCEO)

Category for POLCEO	Fraudulent Observations	Non-Fraudulent Observations	Total
A CEO and/or Chairman of BODs who is not a politician	40	1,362	1,402
A CEO and/or Chairman of BODs who is also a politician	5	193	198
Total:	**45**	**1,555**	**1,600**

Table 6.30 shows that the relationship between the two variables is not significant (χ^2 value = .068, p > 0.01). Therefore, it appears that these variables are not associated to each other. Based on the the results from contingency table and example table, this research makes a tentative conclusion that there is a possibility that CEO and/or Chairman of BODs who is also a politician is not significantly indicative of the likelihood of FFR among Malaysian PLCs.

6.11 Number of CEOs' Pictures in Annual Reports (CEOPIC)

Number of CEOs' pictures in annual reports is another proxy variable used to measure arrogance and the likelihood of FFR among Malaysian PLCs. This research predicts number of CEOs' pictures in annual reports could be interpreted as documented evidences to show that CEOs in Malaysian PLCs prefer to gain publicity and treat themselves as celebrities (Crowe, 2011).

However, this research also considers the possibility that some CEOs in fraudulent Malaysian PLCs prefer to maintain low profiles in order to hide their FFR activities from being publicly exposed and detected. As such, Sub-Hypothesis 5c views both sides of these perspectives. Sub-Hypothesis 5c predicts "frequent number of Chief Executive Officers (CEOs') pictures in annual reports indicates the more arrogant a CEO is and a higher tendency towards the likelihood of FFR; or lesser number of CEOs' pictures in annual reports indicates a higher tendency for the CEOs to hide their FFR activities". Table 6.31 displays a comparison by mean and SD for each year for both fraudulent and non-fraudulent observations.

Table 6.31: Mean and Standard Deviation for the Number of CEOs' Pictures in Annual Reports (CEOPIC)

Year	Fraudulent Observations		Non-Fraudulent Observations	
	Mean	SD	Mean	SD
2004	1.00	1.41	8.98	8.98
2005	3.00	5.66	9.23	8.81
2006	4.00	3.81	9.78	9.53
2007	3.63	3.42	9.54	8.38
2008	2.00	3.16	9.51	8.60
2009	3.60	5.37	9.67	8.41
2010	5.40	8.79	9.89	9.16
2011	0.00	0.00	9.12	8.24
2012	0.00	0.00	9.89	9.17
2013	1.00	0.00	9.68	8.99

Generally, mean and SD for fraudulent observations is lower than non-fraudulent observations between 2004 and 2013. The results indicate that non-fraudulent observations have higher number of CEOs' pictures in annual reports than fraudulent observations. The number of CEOs' pictures in annual reports for fraudulent observations is lower than non-fraudulent observations. The results suggests that the number of CEOs' pictures in annual reports does not reflect arrogant among CEOs, particularly to gain publicity and treat themselves as celebrities. In contrast, SD for non-fraudulent observations is mostly larger than fraudulent observations. The results suggest that non-fraudulent observations have larger variation of the number of CEOs' pictures in annual reports than fraudulent observations in most years.

In other words, the number of CEOs' pictures in annual reports for non-fraudulent observations is more spread from the mean, indicating that some of these observations have higher number of CEOs' pictures than other non-fraudulent observations. However, several fraudulent observations also have a large variation in the number of CEOs' pictures in annual reports, especially in 2010. Therefore, this research makes a tentative conclusion that there is a possibility that number of CEOs' pictures in annual reports is significantly indicative of the likelihood of FFR among Malaysian PLCs with regards to the CEOs' tendency to maintain low profiles and hide their FFR activities.

6.12 Insufficient Corporate Governance Courses for Executive and Non-Executive Directors (INEDU)

Ratio on corporate governance courses for Executive and Non-Executive Directors as compared to the total number of BODs is a proxy variable used in Sub-Hypothesis 6a in order to measure ignorance among Executive and Non-Executive Directors and the likelihood of FFR among Malaysian PLCs. Sub-Hypothesis 6a predicts "insufficient corporate governance courses for Executive and Non-Executive Directors indicate a higher tendency towards the likelihood of FFR". This research predicts insufficient corporate governance courses for Executive and Non-Executive Directors in Malaysian PLCs as one of the reasons for the lack of sufficient knowledge and skills in performing a thorough check on financial reports. These weaknesses have given an advantage to fraudsters to manipulate financial reports, which eventually lead to FFR. Table 6.32 displays a comparison by mean and SD for each year for both fraudulent and non-fraudulent observations.

Table 6.32: Mean and Standard Deviation for the Ratio of Corporate Governance Courses for Executive & Non-Executive Directors as Compared to the Total Number of BODs (INEDU)

Year	Fraudulent Observations		Non-Fraudulent Observations	
	Mean	SD	Mean	SD
2004	0.14	0.03	1.47	1.25
2005	0.93	1.72	1.58	1.37
2006	1.07	1.37	1.56	1.22
2007	0.34	0.36	1.59	1.17
2008	0.33	0.38	1.69	1.19
2009	1.13	1.12	1.75	1.19
2010	0.84	1.13	1.84	1.25
2011	1.33	0.00	1.80	1.26
2012	0.14	0.00	1.81	1.28
2013	3.50	0.00	1.79	1.19

Generally, mean and SD for fraudulent observations is lower than non-fraudulent observations between 2004 and 2013. The result indicates that Executive and Non-Executive Directors from non-fraudulent observations had attended more corporate governance courses than those Directors from fraudulent observations. In supporting H6a, insufficient corporate governance courses among Executive and Non-Executive Directors in fraudulent observations seem to be one of the reasons of FFR.

On the other hand, Executive and Non-executive Directors in non-fraudulent observations had attended more corporate governance courses. SD for non-fraudulent observations is mostly larger than fraudulent observations, except for 2005. The results suggest that non-fraudulent observations have larger variation of ratio on corporate governance courses for Executive & Non-Executive Directors than fraudulent observations in most years.

However, several fraudulent observations also have a large variation in ratio on corporate governance courses for Executive & Non-Executive Directors, especially in 2005, 2006, 2009 and 2010. Therefore, this research makes a tentative conclusion that there is a possibility that the ratio on corporate governance courses for Executive and Non-Executive Directors as compared to the total number of BODs is significantly indicative of the likelihood of FFR among Malaysian PLCs.

6.13 Days Taken to Submit Annual Financial Reports as at Financial Year-End (REMDAYs)

Days taken to submit annual financial reports as at financial year-end are another proxy variable used to measure ignorance and the likelihood of FFR among Malaysian PLCs. Sub-Hypothesis 6b predicts that "delays in submitting annual financial reports as at financial year-end indicate a higher tendency towards the likelihood of FFR". This research predicts fraudulent PLCs need more time to amend suspicious transactions and/or doubtful accounts before submitting financial reports. As a result, these PLCs are perceived to intentionally use ignorance as their excuses for the delays.

Chapter 5 (Section 5.4.2) associated ignorance with 'never aware', 'did not perceive' and 'forgot' (Schwartz, 2001). Chapter 5 also mentioned that Bursa Malaysia requires Malaysian PLCs to submit their annual financial reports within four months after financial year-end (Bursa Malaysia, 2015). Therefore, observations that submitted annual financial reports after the due date (after four months of financial year-end) are marked as negative. The negative values represent number of days for the late submission. Table 6.33 displays a comparison by mean and SD for each year for both fraudulent and non-fraudulent observations.

Table 6.33: Mean and Standard Deviation for Days Taken to Submit Annual Reports as at Financial Year-End (REMDAYs)

Year	Fraudulent Observations		Non-Fraudulent Observations	
	Mean	SD	Mean	SD
2004	24.50	32.87	14.87	13.91
2005	-8.00	57.23	14.94	13.16
2006	18.56	36.27	15.40	16.38
2007	-10.88	71.76	12.61	12.27
2008	-23.17	77.03	14.37	13.94
2009	-6.20	47.80	14.16	13.22
2010	14.80	36.82	11.37	10.76
2011	2.00	0.00	11.14	11.90
2012	-71.00	0.00	12.94	11.99
2013	14.00	0.00	10.99	10.97

Generally, mean and SD for fraudulent observations is higher than non-fraudulent observations, especially in 2004, 2006, 2010 and 2013. The result indicates that fraudulent observations in these years had submitted annual financial reports earlier than non-fraudulent observations as at financial year-end. However, there are also several fraudulent observations that made late submissions, which is after the due date.

In supporting H6b, several fraudulent observations in 2005, 2007, 2008, 2009 and 2012 had submitted annual financial reports after the due date (late submission). The the results suggests that these observations might need more time to amend doubtful suspicious transactions and/or doubtful accounts before submitting annual financial reports. On the other hand, all non-fraudulent observations had submitted annual financial reports before the due date.

SD for fraudulent observations is mostly larger than non-fraudulent observations, except for 2011, 2012 and 2013. The results suggest that fraudulent observations have larger variation of the days taken to submit annual financial reports as at financial year-end than fraudulent observations in most years. In other words, the days for fraudulent observations is more spread from the mean, indicating that some of these observations have higher days than other fraudulent observations. Therefore, this research makes a tentative conclusion that there is a possibility that days taken to submit annual financial reports as at financial year-end is significantly indicative of the likelihood of FFR among Malaysian PLCs.

6.14   Executive Directors' Remunerations (EXREMU)

Chapter 5 (Section 5.9.3) addressed greed as part of the individuals' attitude and a component of incentive based on interviewees' perspectives. Thus, this research predicts there is a possibility for greed to be one of the suitable fraud-risk factors in the Malaysian context. The element of greed is perceived to be seen in Executive Directors' remunerations which includes (1) basic salary; (3) Directors' fee; (3) allowance; and (4) benefit-in-kind such as PLCs' shares. As mentioned in Chapter 5 (Section 5.4.3), this research only measures remunerations for Executive Directors because Non-Executive Directors are being paid by a fixed sum and not allowed to receive remuneration by commission or a percentage of revenue (KPMG, 2013).

As such, Sub-Hypothesis 7a predicts "Executive Directors' remunerations indicate a higher tendency towards the likelihood of FFR". This research employs actual amounts of Executive Directors' remunerations as one of the proxy variables for this hypothesis. A direct observation on the actual amount of Executive Directors' remunerations will allow this research to compare actual allocation for Executive Directors' remunerations between fraudulent and non-fraudulent observations. This comparison is crucial in providing an empirical evidence whether fraudulent observations had allocated higher amount than non-fraudulent observations. Table 6.34 displays the finding.

Table 6.34: Mean and Standard Deviation for Actual Amount of Executive Directors' Remunerations [EXREMU(ACTUAL)]

Year	Fraudulent Observations		Non-Fraudulent Observations	
	Mean (RM '000)	SD (RM '000)	Mean (RM '000)	SD (RM '000)
2004	3,817	2,922	3,012	2,996
2005	2,200	2,547	3,207	3,100
2006	2,454	2,247	4,117	9,777
2007	3,340	5,013	3,393	3,135
2008	1,369	926	3,557	3,358
2009	2,484	2,546	3,600	3,439
2010	3,022	2,682	3,741	3,562
2011	1,251	0	4,101	3,697
2012	6,706	0	4,086	3,720
2013	931	0	4,231	3,788

Generally, mean and SD for non-fraudulent observations is higher than fraudulent observations, except in 2004 and 2012. The result indicates that Executive Directors in non-fraudulent observations have received higher remunerations than Executive Directors in fraudulent observations. SD for non-fraudulent observations is mostly larger than fraudulent observations, except for 2007. The results suggest that non-fraudulent observations have larger variation in the actual amount of Executive Directors' remunerations than fraudulent observations in most years.

In order to observe observations' financial strength in paying Executive Directors' remunerations, this research also calculates a ratio between Executive Directors' remunerations and profits/losses after taxation as another proxy variable for this hypothesis. Table 6.35 displays the comparison by mean and SD for each year for both fraudulent and non-fraudulent observations.

Table 6.35: Mean and Standard Deviation for the Ratio of Executive Directors' Remunerations [EXREMU(RATIO)]

Year	Fraudulent Observations		Non-Fraudulent Observations	
	Mean	SD	Mean	SD
2004	0.06	0.04	0.21	1.38
2005	0.32	0.69	0.24	0.70
2006	0.08	0.07	0.27	0.74
2007	0.23	0.37	0.23	0.82
2008	1.84	4.35	0.27	1.46
2009	0.04	0.05	0.57	1.91
2010	-0.27	0.57	0.66	4.46
2011	0.58	0.00	0.17	0.48
2012	-0.02	0.00	0.16	0.52
2013	-0.41	0.00	0.22	0.67

Generally, mean and SD for non-fraudulent observations is higher than fraudulent observations, especially in 2004, 2006, 2009, 2010, 2012 and 2013. In contrast with H7a, several fraudulent observations had a negative ratio in 2010, 2012 and 2013. The the results suggests that fraudulent observations had to pay remunerations to their Executive Directors despites suffering from losses after taxation.

In contrast, non-fraudulent observations had a positive and consistent ratio between Executive Directors' remunerations and profits/losses after taxation. Additionally, SD for non-fraudulent observations is mostly larger than fraudulent observations, except for 2008. The results suggest that non-fraudulent observations have larger variation of ratio between Executive Directors' remunerations and profits/losses after taxation than fraudulent observations in most years. In other words, the ratio for non-fraudulent observations is more spread from the mean, indicating that some these observations have higher ratio than other non-fraudulent observations. Based on these analyses, this research makes a tentative conclusion that there is a possibility that Executive Directors' remunerations are not significantly indicative of the likelihood of FFR among Malaysian PLCs.

6.15 Test of Normality

Theoretically, most of empirical researchers would prefer symmetrical data distributions for quantitative analysis. However, in reality, most of research data are not equally (or symmetrically) distributed (Field, 2013). Similarly, data in this research are not confirmed to be equally distributed. Therefore, the test of normality using Kolmogorov-Smirnov and Shapiro-Wilk is conducted. Table 6.36 displays the result.

Generally, Shapiro-Wilk test is a specific test for normality, whereas the method used by Kolmogorov-Smirnov test is more general, but less powerful (Field, 2013). The Shapiro-Wilk test involves arraying the sample values by size and measuring fit against expected means, variances and covariances (Field, 2013). These multiple comparisons against normality gives the test more power than the Kolmogorov-Smirnov test, which is one way in which they may differ (Field, 2013).

251

Table 6.36: Test of Normality

Proxy Variables	Significance	
	Kolmogorov-Smirnov	Shapiro-Wilk
GROWTH (ROA)	0.000	0.000
GROWTH (Δ Sales)	0.000	0.000
LEV	0.000	0.000
COMBODs	0.000	0.000
ΔHIA	0.000	0.000
HFRTs	0.000	0.000
ΔACCPOL	0.000	0.000
UNDPOL	0.000	0.000
SPVACC	0.000	0.000
CEODUAL	0.000	0.000
POLCEO	0.000	0.000
CEOPIC	0.000	0.000
INEDU	0.000	0.000
REMDAYs	0.000	0.000
EXREMU (ACTUAL)	0.000	0.000
EXREMU (RATIO)	0.000	0.000

In contrast, the Kolmogorov-Smirnov test for normality is derived from a general approach for assessing goodness of fit by comparing the expected cumulative distribution against the empirical cumulative distribution (Field, 2013). However, this research employs both tests in order to get a valid result of normality. In principle, significance value less than 0.05 (sig. value < 0.05) indicates a deviation from normality (Field, 2013). Both tests indicate that all proxy variables have a significance value of 0.000, which is less than 0.05. As such, this research infers that data from research samples are not normally distributed. The next section explains Wilcoxon Sign Rank Test and Median Nonparametric Test for ratio variables.

6.16 Wilcoxon Sign Rank Test, Median Nonparametric Test and Independent t-tests for Ratio Variables

Since data from research samples are not normally distributed, Wilcoxon sign rank test (Wilcoxon, 1945) and Median nonparametric test are utilised to reconfirm tentative conclusions for ratio variables. The results are compared with independent t-tests between fraudulent and non-fraudulent observations.

As shown in Table 6.37, most of the ratio variables are significant at p-values less than 0.01 and 0.10 except for growth (changes in sales).

Table 6.37: Means, Medians and Results of Wilcoxon, Median Tests and Independent t-tests for Ratio Variables

The Fraud-Risk Factors			Fraud N=45	Non-Fraud N=1,555	Wilcoxon Test (z-value) Median Test (sig.)	t-statistics	Tentative Conclusion
H1: Incentive/Pressure							
H1a	GROWTH (ROA)	Mean	0.08	0.11	-3.562	3.482	Significant
		Median	0.03	0.08	0.000***		
	GROWTH (Δ Sales)	Mean	21.98	14.37	-1.008	-0.496	Not Significant
		Median	8.82	3.61	0.313		
H1b	LEV	Mean	2.47	1.07	-4.357	-2.454	Significant
		Median	1.61	0.68	0.000***		
H5: Arrogance							
H5c	CEOPIC	Mean	3.16	9.53	-6.007	4.831	Significant
		Median	1.00	8.00	0.000***		
H6: Ignorance							
H6a	INEDU	Mean	0.76	1.69	-5.997	4.950	Significant
		Median	0.17	1.57	0.000***		
H6b	REMDAYs	Mean	-0.29	13.26	-1.742	5.768	Significant
		Median	7.00	10.00	0.082*		
H7: Greed							
H7a	EXREMU (Actual '000)	Mean	2,210	3,720	-3.127	2.253	Significant
		Median	1,241	2,111	0.002***		
	EXREMU (Ratio)	Mean	0.32	0.31	-1.742	-0.062	Significant
		Median	0.04	0.05	0.082*		

*, *** = Correlation is significant at p-value < 0.10 and 0.01 respectively.

Similarly, independent t-tests show that there are significant differences between fraudulent and non-fraudulent observations for most ratio variables, except for growth (changes in sales). These significant differences indicate the possibility of several ratio variables from this research to be found significantly indicative of the likelihood of FFR in the Malaysian context.

6.17 Correlation Coefficients

Correlation determines the strength of a relationship between two or more variables (Field, 2013). Correlation coefficient ('r') is used as an indicator for correlation. In a perfect relationship, the value of 'r' is either '+1' or '-1'. The value of '+1' indicates a perfect positive relationship, while the value of '-1' indicates a perfect negative relationship. The value of '0' appears if there is no relationship between the variables. However, in reality, all of the 'r' value range between '+1' and '-1'. Thus, Cohen (1988, 1992) suggests a guideline to determine the strength of the relationship using 'r' as shown in Table 6.38.

Table 6.38: Guideline to Determine the Strength of Relationship between the Two Variables

'r'	Measurement of Strength	Description
+/-0.50	Strong	The effect accounts for 25% of the total variance
+/-0.30	Moderate	The effect accounts for 9% of the total variance
+/-0.10	Weak	The effect explains 1% of the total variance

Source: Adapted from Cohen, 1988, 1992.

In the context of this research, sixteen proxy variables [i.e. GROWTH (ROA and Δ Sales), LEV, COMBODs, ΔHIA, HFRTs, ΔACCPOL, UNDPOL, SPVACC, CEODUAL, POLCEO, CEOPIC, INEDU, REMDAYs and EXREMU (Actual and Ratio)] are employed for the purpose of hypotheses testing in predicting the likelihood of FFR among Malaysian PLCs. However, this research only utilises coefficient correlations on ratio variables [i.e. GROWTH (ROA and Δ Sales), LEV, CEOPIC, INEDU, REMDAYs and EXREMU (ACTUAL and RATIO)]. This is because coefficient correlations can be reasonably utilised to observe the relationships between FFR and ratio variables as these variables contain continuous and meaningful numerical values.

Unlike ratio variables, categorical variables do not contain continuous and meaningful values rather than '0' and '1'. For this reason, categorical variables are unable to provide meaningful numerical values rather than transforming eight proxy variables (i.e. COMBODs, ΔHIA, HFRTs, ΔACCPOL, UNDPOL, SPVACC, CEODUAL and POLCEO) into a measurable data set for the purpose of quantitative analysis. Therefore, significant values derived from coefficient correlations are merely not appropriate to represent the relationship between FFR and categorical variables. As such, the χ^2 test is more appropriate to indicate the association with FFR as the χ^2 value is driving statistical significance for categorical variables.

The test of normality in Section 6.15 has confirmed data from the research samples are not symmetrically nor normally distributed. Therefore, Spearman-rank correlation coefficients (Spearman, 1910) are used for non-parametric statistic of ratio variables. Table 6.39 presents the the results.

Table 6.39: Correlation Matrix of Ratio Variables

	FFR	GROWTH		LEV	CEO PIC	IN EDU	REM DAYs	EXREMU	
		ROA	Δ Sales					Actual	Ratio
FFR	1.000								
GROWTH (ROA)	-.089***	1.000							
	.000								
GROWTH (Δ Sales)	.025	-.014	1.000						
	.314	.572							
LEV	.109***	-.199***	-.003	1.000					
	.000	.000	.902						
CEOPIC	-.150***	.182***	.057**	-.072***	1.000				
	.000	.000	.023	.004					
INEDU	-.150***	.073***	.033	-.027	.371***	1.000			
	.000	.004	.190	.284	.000				
REMDAYs	-.044*	.161***	-.020	-.133***	.149***	.019	1.000		
	.082	.000	.420	.000	.000	.442			
EXREMU (ACTUAL)	-.078***	.064	.046*	.071***	.231***	.155***	.062**	1.000	
	.002	.010	.065	.005	.000	.000	.012		
EXREMU (RATIO)	-.034	.031	.002	.031	.209***	.173***	-.105***	.208***	1.000
	.174	.210	.942	.218	.000	.000	.000	.000	

*, **, *** = Correlations are significant at p-value < 0.10, 0.05 and 0.01 respectively.

For each ratio variable, Spearman-rank correlation coefficients are shown in the first line and p-value is shown in the second line. The p-values indicate whether correlations between FFR and ratio variables are statistically significant (Field, 2013). Six ratio variables are correlated with the DV (FFR). Five variables are significantly correlated at p-value < 0.01. The significant values indicate that there are relationships between the DV and these variables at 99% confidence interval. These variables are growth (return on assets), leverage, number of CEOs' pictures in Malaysian PLCs' annual reports, insufficient corporate governance cources among Executive Directors and the actual amount of Executive Directors' remunerations. One variable is correlated at p-value < 0.10 (i.e. days taken to submit annual financial reports as at financial year-end).

These results seem to be similar with the results of Lou and Wang (2009) when they found most of independent variables were significantly related to fraud. However, most of these variables demonstrate negative correlations with the DV, but leverage. A negative correlation suggests an inverse relationship between the DV and these proxy variables. In other words, as these proxy variables increase, the likelihood of FFR (DV) would decrease and vice versa. Meanwhile, two ratio variables are not correlated with the DV [i.e. growth (changes in sales) and the ratio between Executive Directors' remunerations and profits/losses after taxation]. The results suggest that there is no relationship between the DV and these variables. Additionally, most of the ratio variables are correlated with each other. However, this research only concentrates on the relationships between the DV and ratio variables.

6.18   Analysis on Specification of Model

Having discussed results from descriptive statistics and coefficient correlations, the next step is to determine suitable fraud-risk factors in predicting the likelihood of FFR in the Malaysian context. In principle, regression analysis is used to determine causality-effect relationships by predicting the DV from explanatory variables (Field, 2013). Specifically, multiple regression analysis seems to be the right analysis as this research employs fourteen explanatory variables to determine the outcome for DV (FFR). However, it is essential to identify an appropriate multiple regression model that suits data characteristics in this research. This is in line with a claim made by Menard (2010: 105) who mentioned "even when we have a reasonably well-formulated theory, the question remains whether there may be problems in the data that make our examination of the statistical significance and strength of relationship, either for the model as a whole or for individual variables, questionable."

As such, Menard (2010: 105) raised several basic questions that should be asked in choosing the right model. These questions are:

"(1) Are the variables in the model appropriate? Do we need to add variables to the model, or should we consider removing variables from the model or combining some variables in the model?;

(2) Is the form of the model appropriate? Are there nonlinear or non-additive elements that need to be added or removed, or, more remotely, do we need to change assumptions about distribution of errors in the model?; and

(3) Are the cases in the data appropriate for the analysis? In particular, do we need to consider removing some cases, or adjusting the model better account for some observations in the data?"

Therefore, analysis of specification of model is used to facilitate this research in identifying an appropriate model for regression analysis. The analysis in conducted according to several underlying assumptions for regression analysis. According to Berry (1993), underlying assumptions must be satisfied in order to draw conclusions about a population based on a regression analysis. Thus, this research outlines six underlying assumptions as suggested by Berry (1993). Each assumption is discussed in the next sections.

6.18.1 Variable Types

In standard regression (multiple regression), all explanatory variables must be quantitative or categorical (with two categories), and the DV must be quantitative and continuous. Additionally, it is assumed that all values for DV are independent. In other words, each value for DV comes from a separate entity. As mentioned in introductory paragraph of this chapter, this research employs eight ratio variables and eight categorical variables with two categories (coded as '0' and '1'). However, the DV for this research is dichotomous ('0' for non-FFR and '1' for FFR), which is contradicting DV's characteristic for multiple regressions (should be continuous variables). Therefore, DV's characteristic for this research has violated the assumption on variables types for standard regression.

The most commonly used approaches in predicting dichotomous DV are the logit or probit model (Menard, 1995). Generally, a logic model can be interpreted as modelling log odds (Lewis-Beck, 1980). Such modelling is usually used to analyse complex multiviariate contingency tables (Agresti & Finlay, 1997). The the results from logit model covers a wide range of estimation by allowing the transformation of a dichotomous DV to a continuous variable.

258

Additionally, a logit model provides an easily interpreted the results by giving consistent, efficient and normal parameter estimations (Agresti & Finlay, 1997). Unlike logit model, a probit model utilises probabilities of an emerged cumulative distribution function in explaining the behaviour of a dichotomous DV (Lewis-Beck, 1980). This function has resulted into a main different between logit and probit in which a logic model has slightly flatter tails (i.e. the probit curve approaches the axes more quickly than the logit curve).

Additionally, a logit model allows the probability estimation on the occurrence of FFR by predicting a dichotomous outcome from a set of explanatory variables (fraud-risk factors). Therefore, like other research studies on fraud and FFR (see Beasley, 1996; Summers & Sweeney, 1998; Spathis, 2002; Lou & Wang, 2009; Skousen *et al*., 2009; Aghghaleh *et al*., 2014), this research uses the principles of logit model for logistic regression analysis.

Nevertheless, each value of the DV is derived from separate entities, consisting 45 fraudulent observations and 1,555 non-fraudulent observations. Since the DV is dichotomous, some variables in this research do not make many of key assumptions for multiple regressions, particularly regarding normality distributed errors (Section 6.18.5) and homoscedasticity (Section 6.18.6). As such, this research only explains these assumptions briefly.

6.18.2 Multicollinearity

Multicollinearity occurs when two or more variables are closely linearly related (Lewis-Beck, 1980; Berry, 1993). In essence, the explanatory variables should not be highly correlated (Berry, 1993; Field, 2013). Multicollinearity can be checked with tolerance and variance inflation factor (VIF) statistics.

Tolerance value less than 0.1 indicates a serious collinearity problem (Menard, 1995), while VIF greater than ten also indicates a serious collinearity problem (Myers, 1990). Table 6.40 presents the values for tolerance and VIF[35].

Table 6.40: Tolerance and Variance Inflation Factor (VIF) for the Research

Explanatory Variables (Represented by Proxy Variables)	Collinearity Statistics	
	Tolerance	VIF
GROWTH (ROA)	.910	1.098
GROWTH (Δ Sales)	.990	1.011
LEV	.941	1.063
COMBODs	.928	1.077
HIA	.983	1.017
HFRTs	.854	1.171
ACCPOL	.900	1.111
UNDPOL	.977	1.024
SPVACC	.954	1.048
CEODUAL	.928	1.078
POLCEO	.856	1.168
CEOPIC	.809	1.236
INEDU	.893	1.120
REMDAYs	.979	1.022
EXREMU (ACTUAL)	.961	1.041
EXREMU (RATIO)	.976	1.025

All tolerance values are more than 0.1 and all VIF values are less than ten. Therefore, it can be concluded that all explanatory variables in this research are not violating multicollinearity's assumptions.

6.18.3 Independent Errors

In independent error, the residual terms should be uncorrelated (or independent) for any two observations (Lewis-Beck, 1980; Berry, 1993). The phenomenon is sometimes described as a lack of autocorrelation (Lewis-Beck, 1980; Berry, 1993). Thus, Durbin-Watson test (1951) is used to determine whether adjacent residuals are uncorrelated. A value greater than two indicates a negative correlation between adjacent residuals and suggests problematic correlations. Therefore, the Durbin-Watson value should be less than two to indicate a positive relationship and independent error. As shown in Table 6.41, the Durbin-Watson value is 0.346, which is less than two.

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[35] Tolerance and VIF values are derived from the estimated results. These values are displayed in this section to maintain the consistency of multiple regression assumptions.

Table 6.41: the Model Summary

Model	Std. Error of the Estimate	Durbin-Watson
1	.149	.346

As such, data in this research is not violating independent errors' assumption.

6.18.4 Linearity

There is a linear relationship between any continuous predictors (explanatory variables) and the logit of the outcome variable (DV). The assumption can be tested by looking at the interaction term between the explanatory variables and its log transformation (Hosmer & Lemeshow, 1989). As shown in Figure 6.3, the residual of vertical axis against the standardised predictor variables are linearly related to form a relationship close to the straight line.
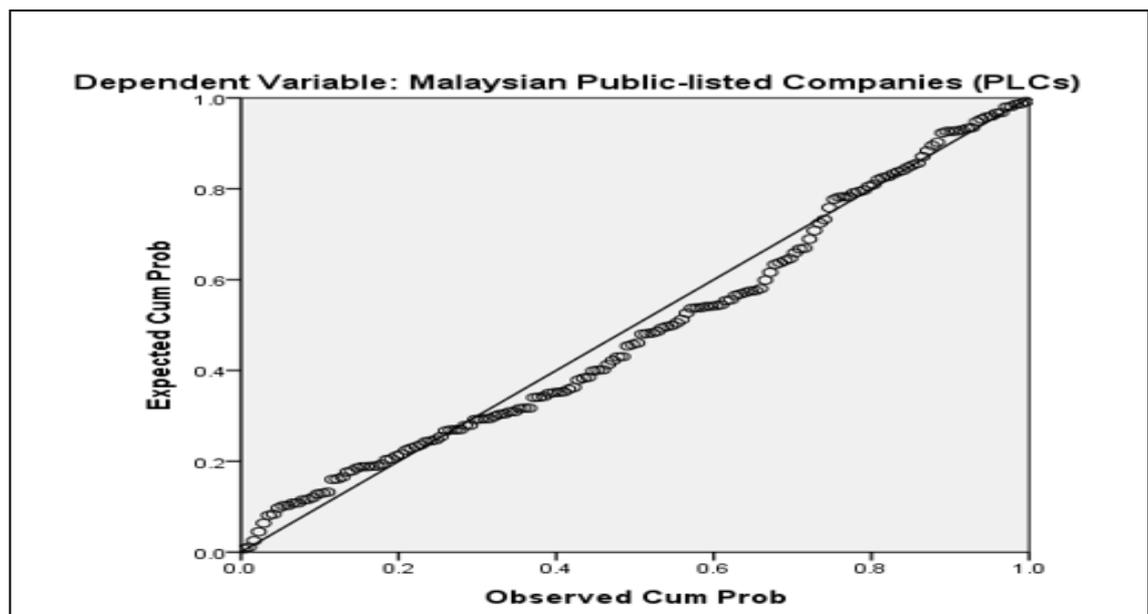
Figure 6.3: Normal P-P Plot of Regression Standardised Residual.

A residual is the difference between the actual and predicted value of DV (Field, 2013). Therefore, there is a linear relationship between the DV and all explanatory variables in this research.

6.18.5 Normality Distributed Errors

It is assumed that the residuals in the model are random, normally distributed variables with a mean of '0' (Agresti & Finlay, 2009). This assumption means that the differences between the model and the observed data are most frequently zero or very close to zero. However, this assumption is not applicable for this research as the outcome variable is dichotomous.

6.18.6 Homoscedasticity

At each level of the explanatory variables, the variance of the residual terms should be constant. The residuals at each level of the explanatory variables should have the same variance (homoscedasticity). However, this assumption is not applicable for this research as the outcome variable is dichotomous.

6.18.7 Conclusion for Analysis on Specification of Model

Based on the results derived from analysis on specification of model, it is clear that this research will use binomial logistic regression analysis to determine suitable fraud-risk factors in predicting the likelihood of FFR among Malaysian PLCs. The term 'binomial' refers to two possibilities of outcome for categorical the resultss, which are FFR (coded as '1') or non-FFR (coded as '0'). This conclusion is drawn based on variables characteristics that match some underlying assumptions for binomial logistic regression analysis. These assumptions are (1) variable types; (2) multicollinearity; (3) independent errors; and (4) linearity (Lewis-Beck, 1980; Berry, 1993; Field, 2013).

6.19   Conclusions

Based on empirical results from descriptive statistics, this chapter has provided detailed statistical characteristics on fourteen explanatory variables, which are represented by sixteen proxy variables. Statistical characteristics pertaining to these explanatory variables are imperative as the preparation for the second part of quantitative analysis, which is binomial logistic regression analysis.

In order to demonstrate an adequate representation pertaining to descriptive statistics, this chapter has also provided additional test on explanatory variables such as the test of normality, Wilcoxon Sign Rank Test and Median Nonparametric Test. In addition, correlation coefficients between the DV (FFR) and explanatory variables (the fraud-risk factors) are also conducted. The strength of relationships between the DV and explanatory variables are being illustrated in three CMs accordingly. At the end of this chapter, analysis of specification of model is conducted to determine appropriate logistic regression analysis for this research.

CHAPTER 7: DETERMINANTS OF FRAUDULENT FINANCIAL REPORTING AMONG MALAYSIAN PLCs

Based on the literature gap pertaining to research studies on fraudulent financial reporting (FFR) and the fraud-risk factors from the Fraud Models (i.e. the Fraud Triangle Model, the Fraud Diamond Model and Crowe's Fraud Pentagon Model), this research has constructed five research questions (RQs) and seven sub-research questions (SRQs). These RQs and SRQs intend to identify fraud-risk factors important in predicting the likelihood of FFR among Malaysian Public-Listed Companies (PLCs). Chapter 6 has thoroughly analysed statistical characteristics for explanatory variables, which are represented by suitable proxy variables. At the end of Chapter 6, an analysis on specification of model is conducted to determine an appropriate regression analysis that suits data characteristics for this research. Based on examinations on variable types, multicollinearity, independent errors, linearity, normality distributed errors and homoscedasticity, this research has confirmed binomial logistic regression analysis as the appropriate method of analysis.

Therefore, the main objective of this chapter is to find the answers for five RQs and seven SRQs based on empirical results from binomial logistic regression analysis.[36] These hypotheses and sub-hypotheses will be statistically tested in this chapter to determine causal-effect relationships between dependent variable (DV), which is the likelihood of FFR and explanatory variables (the fraud-risk factors). Suitable fraud-risk factors could have emerged (independently or collectively) from the Fraud Models; or the additional fraud-risk factors that were discovered from the interviews (i.e. ignorance and greed).

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[36] This research uses Stata to conduct empirical investigations involving panel data analysis, which produces statistical results on causal-effect relationships between FFR and explanatory variables based on binomial logistic regression analysis.

Alternatively, suitable fraud-risk factors could have also emerged from the combination of the Fraud Models and additional fraud-risk factors, which will eventually suggest a new fraud model in the Malaysian context. In short, this chapter completes the research process, which is defined as "a set of activities in which social scientists engage to answer questions, examine ideas, or test theories" (Frankfort-Nachmias and Leon-Guerrero, 2009:3). Figure 7.1 illustrates the summary of the research process.
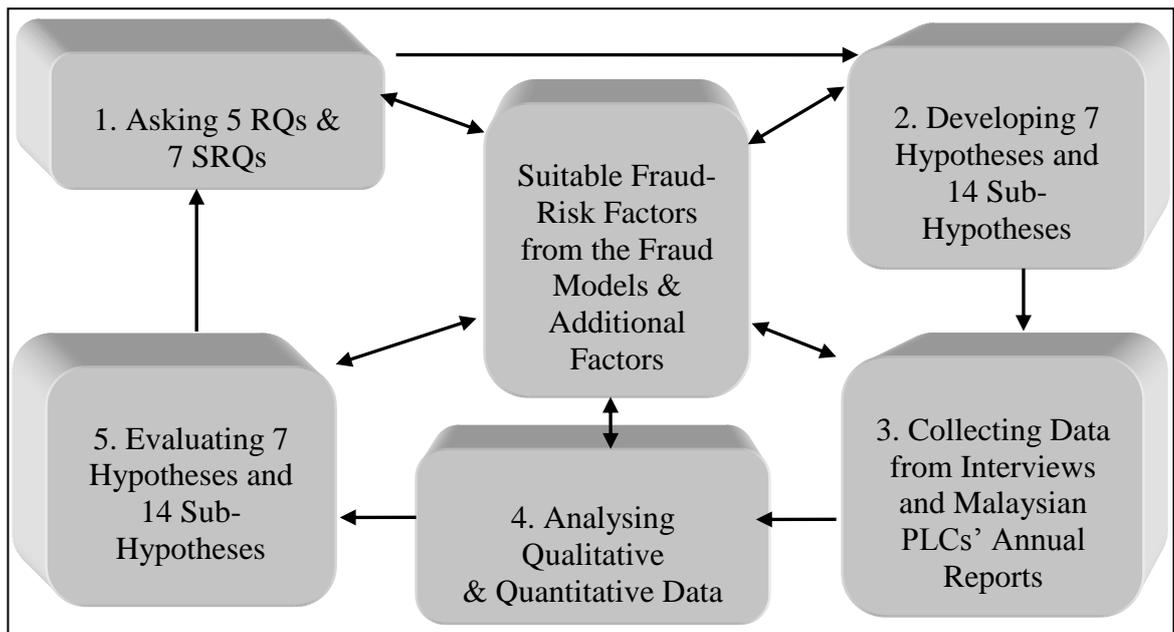
Figure 7.1: The Research Process.
Source: Adapted from Frankfort-Nachmias & Leon-Guerrero, 2009: 3.

This chapter is organised as follows. Section 7.1 introduces panel data models in brief. Section 7.2 discusses empirical results on logistic fixed-effects (FE) models and random-effects (RE) models. Section 7.3 justifies the choice of appropriate models for this research. Section 7.4 explains the joint tests for RE models in deciding suitable explanatory variables. Section 7.5 specifies lagged values on explanatory variables. Section 7.6 justifies the choices of appropriate models for lagged models. Section 7.7 explains joint tests for lagged models in deciding suitable explanatory variables. Section 7.8 summarises overall evaluations and concludes the chapter.
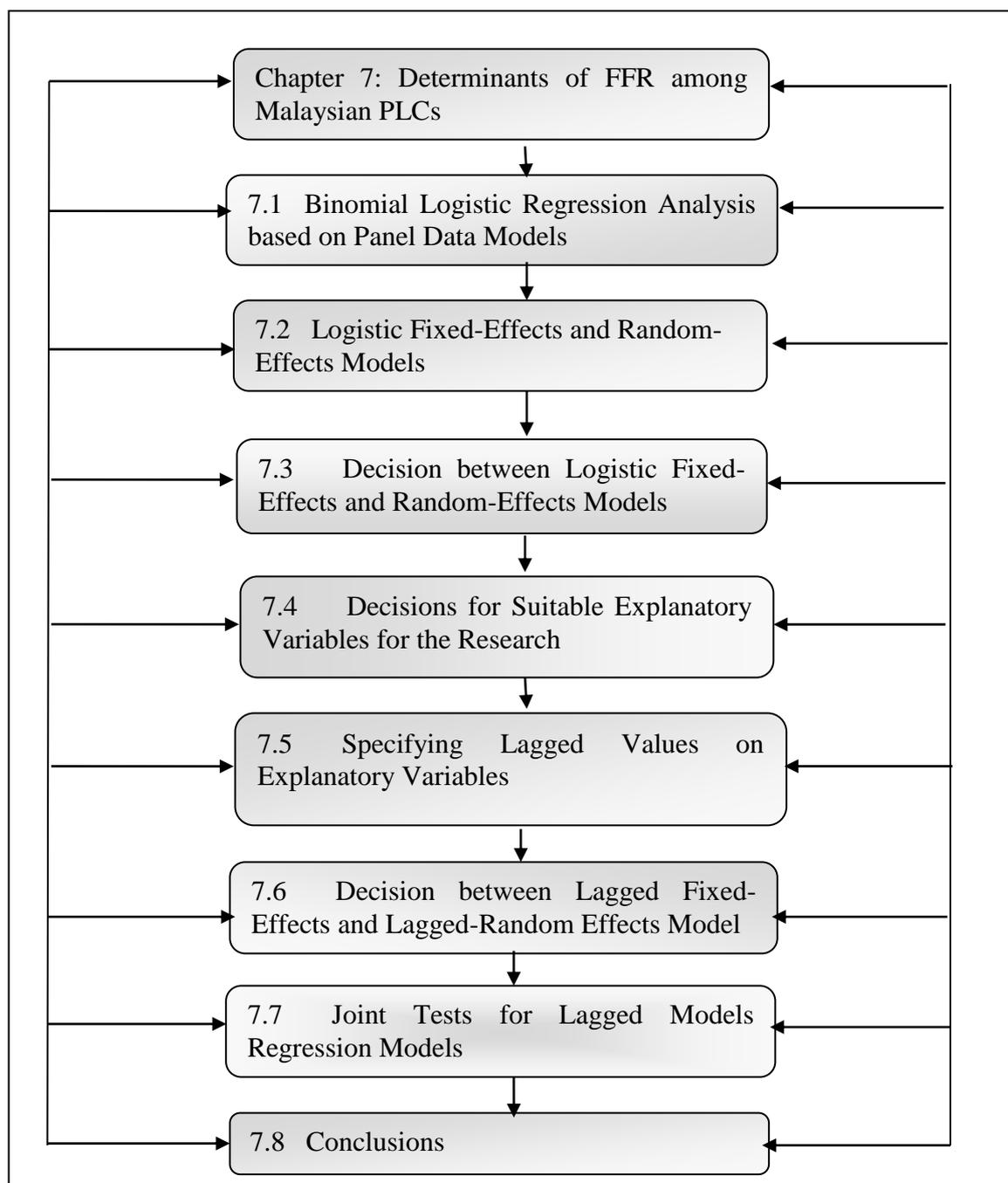
Figure 7.2: Structure of Chapter 7.

7.1   Binomial Logistic Regression Analysis based on Panel Data Models

In order to identify suitable determinants of FFR in the Malaysian context, this research

uses panel data models to explore both quantity (i) and time (t) dimension for 1,600

observations based on sixteen explanatory variables across ten years period (from 2004

to 2013).

Panel data models are suitable for "identifying and measuring effects that are simply not detectable in pure cross-section or pure time-series data" (Baltagi, 2013: 8). This scenario fits the nature of the data set for this research in measuring causal-effect relationships between the DV (i.e. the likelihood of fraudulent financial reporting - FFR) and explanatory variables (i.e. fraud-risk factors) over cross-sectional time-series data.

7.2   Logistic Fixed-Effects and Random-Effects Models

From the perspective of panel data analysis, there is a fundamental question whether to choose fixed-effects (FE) or random-effects (RE) models because both models have advantages and disadvantages. Therefore, this research analyses both FE and RE models to obtain a realistic comparison between these two models. This research is aware of year dummies and industry dummies that can be added into FE models and RE models respectively. According to Wooldridge (2010), the logit models[37] of binomial logistic regression has a sufficient statistic (total response) that can be used for conditioning. 'xtlogit', 'fe' and 'xtpoisson'. Adding dummy variables to other estimators (i.e. year and industry dummies) may not produce the benefits of the estimators, such as a better control over endogeneity biases, since the logit models would still capture the individual effects (Wooldridge, 2010). As such, this research does not utilise these dummies. Moreover, similar research studies on panel data models did not utilise these dummies (see Witt *et al*., 1999; Entorf & Spengler, 2000; Al-Najjar & Taylor, 2008).

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[37] In Chapter 6 (Section 6.18.1), this research has justified the choice of logit models over probit models for binomial logistic regression analysis of panel data models.

Generally, each proxy and explanatory variable is analysed according to the sequence of fraud-risk factors from the Fraud Models (i.e. the Fraud Triangle Model, the Fraud Diamond Model and Crowe's Fraud Pentagon Model) and additional factors discovered from the interviews (i.e. ignorance and greed). As such, these proxy and explanatory variables are organised in 4 models (Model 1 to Model 4). Retrospectively, Table 7.1 summarises several abbreviations used to address these proxy variables.

Table 7.1: Abbreviations of Proxy Variables for the Research

Abbreviations	Descriptions
GROWTH (ROA)	Growth (Return on Assets)
GROWTH (Δ Sales)	Growth (Changes in Sales)
LEV	Leverage
COMBODs	Composition of Board of Directors (BODs)
ΔHIA	Turnover of Head of Internal Auditor (HIA)
HFRTs	Historical Financial Restatements Times
ΔACCPOL	Changes in accounting policies
UNDPOL	Undeclared Policies on Doubtful Debts and Accounts Receivable
SPVACC	No Access to Special Purpose Vehicles (SPVs') Financial Reports
CEODUAL	Chief Executive Officer (CEO) Duality
POLCEO	A CEO and/or Chairman of BODs who is also a Politician
CEOPIC	Number of CEO's pictures in Malaysian PLCs' annual reports
INEDU	Insufficient corporate governance courses for Executive and Non-Executive Directors
REMDAYs	Days Taken to Submit Annual Financial Reports as at Financial Year-End
EXREMU(ACTUAL)	Actual Amounts of Executive Directors' Remunerations
EXREMU(RATIO)	Ratio between Executive Directors' Remunerations and Profits/Losses after Taxation

Comparison between logistic FE models and RE models is discussed simultaneously. For each model, the binomial logistic regression analysis begins with logistic FE models and followed by logistic RE models.

7.2.1. Model 1

Model 1 incorporates explanatory variables from the Fraud Triangle Model. Thus, seven proxy variables [i.e. GROWTH (ROA), GROWTH (Δ Sales), LEV, COMBODs, ΔHIA, HFRTs and ΔACCPOL] representing five fraud-risk factors (i.e. incentive, pressure, opportunity, attitude and rationalisation) are included in the model. Based on previous empirical research results on causal-effect relationships between FFR and the fraud-risk factors from the Fraud Triangle Model (see Lou & Wang, 2011; Aghghaleh *et al*., 2014; Dalnial *et al*., 2014), this research predicts leverage, turnover of HIA and historical financial restatements times to be significantly indicative the likelihood of FFR. Table 7.2 presents the results of logistic FE model.

Table 7.2: Logistic Fixed-Effects for Model 1

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	**Explanatory Variables**	**Hypotheses**	**Coef.**	**Std. Err. (SE)**	**z-score**
Incentive	GROWTH (ROA)	H1a	+ 1.222	1.473	0.83
	GROWTH (Δ Sales)	H1a	- 0.002	0.005	0.33
Pressure	LEV	H1b	+ 0.035	0.063	0.55
Opportunity	COMBODs	H2a	+ 1.377**	0.692	1.99
	ΔHIA	H2b	+ 2.813***	0.717	3.92
Attitude/	HFRTs	H3a	+ 17.698	1385.554	0.01
Rationalisation	ΔACCPOL	H3b	+ 2.638***	0.835	3.16

, * = Significant at p-value < 0.05 and 0.01 respectively.

Three explanatory variables are positively significant at the 1% and 5% significant levels. Turnover of HIA displays the highest significant result with the DV (sig. = 0.000). In contrast to previous empirical research studies conducted by Lou & Wang (2009), Aghghaleh *et al*. (2014), Dalnial *et al*. (2014), this the results suggests that leverage and historical financial restatements times are not significant.

However, the results suggests that composition of BODs and changes in accounting policies are significant. Historical financial restatements times display the highest coefficient (coef. = 17.698) and standard error (SE) which suggest the highest measure of dispersion (or variability) in predicting the likelihood of FFR. In contrast, growth (changes in sales) displays the lowest SE, although the explanatory variable is not significant and demonstrates an inverse effect with the DV.

Meanwhile, Table 7.3 presents the results of logistic RE models.

Table 7.3: Logistic Random-Effects for Model 1

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	Explanatory Variables	Hypotheses	Coef.	Std. Err. (SE)	z-score
Incentive	GROWTH (ROA)	H1a	- 2.003*	1.072	1.87
	GROWTH (Δ Sales)	H1a	- 0.004	0.005	0.91
Pressure	LEV	H1b	+ 0.011	0.056	0.20
Opportunity	COMBODs	H2a	+ 1.437**	0.554	2.59
	ΔHIA	H2b	+ 1.874***	0.439	4.27
Attitude/	HFRTs	H3a	+ 1.724***	0.431	4.00
Rationalisation	ΔACCPOL	H3b	+ 1.621***	0.411	3.95

*, **, *** = Significant at p-value < 0.10, 0.05 and 0.01 respectively.

Five explanatory variables are significant. Composition of BODs, turnover of HIA, historical financial restatements times and changes in accounting policies are positively significant at the 1% and 5 % significant level, while growth (return on assets) is negatively significant at the 10% significant level. The significant results of turnover of HIA and historical financial restatements times are similar with the results found by Lou & Wang (2009), Aghghaleh *et al*. (2014) and Dalnial *et al*. (2014).

However, in contrast to previous empirical results (see Lou & Wang, 2009; Aghghaleh *et al*., 2014; Dalnial *et al*., 2014), leverage is not significant. Instead, the RE Models suggest changes in accounting policies as the significant explanatory variable.

Turnover of HIA, historical financial restatements times and changes in accounting policies display similar highest significant values (sig. = 0.000). Among these significant variables, turnover of HIA displays the strongest relationship with the DV (coefficient = 1.874) as compared to historical financial restatements times (coefficient = 1.724) and changes in accounting policies (coefficient = 1.621).

Meanwhile, growth (return on assets) displays the highest coefficient and SE. Similar with the FE models, growth (changes in sales) displays the lowest SE, although the explanatory variable is not significant and demonstrates an inverse effect. The results from both models suggest that growth is not statistically significant to indicate the likelihood of FFR among Malaysian PLCs. These results are similar to Lou and Wang (2009) who found that growth is not significant with FFR. These results also demonstrate the vast majority of managers in high-growth PLCs do not commit fraud emphasised by some researchers (see Loebbecke & Willingham 1988; Loebbecke *et al.* 1989; Bell *et al.* 1991; Beasley 1996; Bell & Carcello, 2000; Lou & Wang, 2009).

However, Manurung and Hadian (2013) found that growth (return on assets) had a positive relationship with fraudulent financial statement. These different empirical results in respect of growth could have resulted from using different sample size and the periods for data sampling. For example, Manurung and Hadian (2013) only examined 35 Indonesian PLCs for a 2-year period (i.e. 2012 and 2013), while Lou and Wang (2009) examined 123 Taiwanese PLCs for an 11 year-period (1996 to 2006). Conversely, this research examines 160 PLCs for a 10 years period (2004 to 2013).

Unlike Carcello and Palmrose (1994), Lys and Watts (1994), Dechow *et al.* (1996), Albrecht and Albrecht (2002) and Lou and Wang (2009), this research has found that the incidence of fraud (including FFR) is not influenced by financial pressures (i.e. leverage).

The insignificant results of leverage in both models are somewhat consistent with previous research, and hence the result is anticipated. Similar results have been reported in Indonesia when Manurung and Hadian (2013) reported that leverage is not significant with financial statement fraud. The results signify proximity to debt covenant limits does not necessarily affect the occurrence of FFR as claimed by Carter and Stover (1991) and Latham and Jacobs (2000a, 2000b). Data sampling for this research was undertaken when similar economic condition occurred in Malaysia to those in Indonesia and could have contributed towards these similar results. Although Manurung and Hadian (2013) only utilised two years data sampling (i.e. 2012 and 2013), the economic recession's recovery process was still going on at that time. This similarity suggests that most of Malaysian and Indonesian PLCs were using high-debts to restructure their performance.

However, the significant results of composition of BODs for both models are inconsistent with the results of Beasley (1996) who found that the incident of financial statement fraud was negatively related to the proportion of the outside directors on the BODs. Less outside directors on the composition of BODs (i.e. Independent Non-Executive Directors) indicate the possibility of a weak internal control environment among Malaysian PLCs, which create opportunity for top management to carry out FFR as claimed by Loebbecke *et al.* (1989) and Bell *et al.* (1991). Although Independent Non-Executive Directors were appointed, there is a belief that most of the members of BODs prefer to appoint someone who are close to them (i.e. colleagues or friends) as the Independent Non-Executive Directors in Malaysian PLCs.

These appointments are necessary, although it is natural for most influential members of the BODs to be the inside members (Fama, 1980; Fama & Jensen, 1983). In this context, the integrity and capability of Independent Non-Executive Directors can be questioned because their appointments do not reflect relevant knowledge and experience. To confirm, Haniffa and Hudaib (2006: 1056) claimed that "most Non-Executive Directors are not selected due to their expertise and experience, but more often for political reasons, to legitimise business activities and for contacts and contracts."

Likewise, Abdul-Rahman and Mohamed-Ali (2006) also mentioned that the majority of Independent Non-Executive Directors in Malaysian PLCs are relatively lacking in knowledge of the PLCs' affairs. This is not surprising as Independent Non-Executive Directors are not directly involved in day-to-day operations of the PLCs. Most of them came from various professional backgrounds (i.e. politicians, civil servants and engineers) and are occupied with other activities, hence they are more reliant on information from PLCs' top management. As a result, the BODs are unable to perform efficient roles in detecting FFR.

Based on the above discussions, it is believed that Bursa Malaysia and SC have little knowledge of the processes of BODs' appointments, particularly those that involve Independent Non-Executive Directors. Although Bursa Malaysia (Bursa Malaysia, 2015c) has set a minimum composition of 1/3 (or 33.33%) for Independent Directors from total COMBODs, this research found that there is lack of information describing how differing levels of BODs composition affect the nature of BODs' decisions.

The significant results for the turnover of HIA from both models are similar with Lou and Wang (2009). Likewise, the results are consistent with those of Sorenson *et al.* (1983) who suggest that a client may even change auditors (including the HIA and internal auditors) to reduce the likelihood of detection of financial statement fraud.

The results could be attributed to HIA independency (see Cotton, 2002; Ronen, 2002; Kopel, 2003a, 2003b; Lai, 2003; Dontoh *et al.*, 2004; Kinney *et al.* 2004; McMillan, 2004; Rezaee, 2005). Turnover of HIA could potentially be one of the easiest mechanisms for fraudulent Malaysian PLCs to minimise the risk of FFR detection as suggested by Sorenson *et al.* (1983). Thus, this research provides empirical evidence of poor internal control among Malaysian PLCs as one of the most prominent factors contributing to fraud cases in Malaysia (KPMG, 2014).

As compared to external auditors, issues on removal or resignation of internal auditors are not specifically addressed by Bursa Malaysia. This is because internal auditors are considered as PLCs' employees. Thus, as the employer, PLCs' top management has absolute rights to remove or terminate their internal auditors, including the HIAs. This situation suggests some limitations for internal auditors to perform their duties effectively. HIAs can be terminated if the audit results are not consistent with PLC's good image. Likewise, an experienced HIA would be more vigilant and competent to conduct thorough auditing procedures. In this circumstance, the top management would prefer a new HIA. A new HIA is likely to be more gullible and easier to be manipulated. On the other hand, the HIA might cooperate and/or tolerate with the top management who intended to commit FFR. In this scenario, he/she would intentionally allow internal audit oversight on suspicious transactions that lead to FFR.

The significant result of historical financial restatement times in logistic RE models supports the facts that historical financial restatement among fraudulent PLCs are not new in Malaysia. The result is consistent with Lou and Wang (2009) who found that higher frequency of financial restatement indicates lower reliability of financial reports and reflects management integrity. Thus, this result provides a valuable indication of financial reports' reliability and management integrity among fraudulent Malaysian PLCs that were mandated for financial restatement by Bursa Malaysia. The significant result of historical financial restatement times also supports the research's claim that fraudulent PLCs tend to manipulate financial reports within GAAP with an intention that Bursa Malaysia and SC would not be able to detect any unusual or inappropriate financial transactions. By doing so, if Bursa Malaysia or SC is able to detect any suspicious transaction, these PLCs would only be mandated for financial restatement, rather than be accused for FFR.

The significant results of changes in accounting policies from both models support the notion that changes in accounting policies can rationalise FFR activities among Malaysian PLCs as long as within GAAP. In other words, the changes in accounting policies are one of the legal approaches for fraudulent PLC to disguise FFR actions since Bursa Malaysia does not mandate a specific time for Malaysian PLCs to change their accounting policies. Nontheless, this research also believes that some PLCs would apply changes in estimation techniques rather than the accounting policies to avoid any suspicious transaction. This is because changes in accounting policies requires a prior-year adjustment, while changes in estimation do not. By doing so, these PLCs could acquire estimated monetary amounts of the financial reports.

7.2.2 Model 2

Model 2 incorporates explanatory variables from the Fraud Diamond Model. Thus, nine proxy variables [i.e. GROWTH (ROA), GROWTH (Δ Sales), LEV, COMBODs, ΔHIA, HFRTs, ΔACCPOL, UNDPOL and SPVACC] representing six fraud-risk factors (i.e. incentive, pressure, opportunity, attitude, rationalisation and capability/competence) are included in the model. Unlike the Fraud Triangle Model, there is no empirical research that examines causal-effect relationship between FFR and the fraud-risk factors from the Fraud Diamond Model found at the time of this research. Although Omar and Din (2010) employed the fraud-risk factors from the Fraud Diamond Model, they did not examine capability/competence to predict the likelihood of FFR among Malaysian PLCs. Instead, they examined the perceptions of Malaysian auditors on the importance and existence of financial fraud red flags in organisations as a fraud detection tool. Therefore, the addition of capability/competence as additional fraud-risk factors of the Fraud Triangle Model might suggest different results from Model 1. Table 7.4 presents the results of logistic FE models.

Table 7.4: Logistic Fixed-Effects for Model 2

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	**Explanatory Variables**	**Hypotheses**	**Coef.**	**Std. Err. (SE)**	**z-score**
Incentive	GROWTH (ROA)	H1a	- 0.193	2.074	0.09
	GROWTH (Δ Sales)	H1a	- 0.001	0.005	0.21
Pressure	LEV	H1b	+ 0.020	0.063	0.32
Opportunity	COMBODs	H2a	+ 1.216*	0.732	1.66
	ΔHIA	H2b	+ 2.862***	0.732	3.91
Attitude/ Rationalisation	HFRTs	H3a	+ 17.766	1363.91	0.01
	ΔACCPOL	H3b	+ 2.729***	0.857	3.19
Capability/ Competence	UNDPOL	H4a	+ 14.945	6227.478	0.00
	SPVACC	H4b	+ 3.358	2.382	1.41

*, *** = Significant at p-value < 0.10 and 0.01 respectively.

Consistent with Model 1 of the FE models, similar explanatory variables are positively significant at the 1% and 10% significant levels in Model 2 (i.e. composition of BODs, turnover of HIA and changes in accounting policies). The inclusion of 'undeclared policies on doubtful debts and accounts receivable' and 'no access to SPVs' financial reports' of capability/competence does not change the equation as in Model 1. Turnover of HIA displays the highest significant result with the DV (sig. = 0.000). Historical financial restatement times display the highest coefficient (coef. = 17.766), while undeclared policies on doubtful debts and account receivables displays the highest SE. Similarly, growth (changes in sales) also displays the lowest SE as in Model 1, although the explanatory variable is not significant and demonstrates an inverse effect with the DV.

Table 7.5 presents the results of logistic RE models.

Table 7.5: Logistic Random-Effects for Model 2

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	Explanatory Variables	Hypotheses	Coef.	Std. Err. (SE)	z-score
Incentive	GROWTH (ROA)	H1a	- 0.841	0.988	0.85
	GROWTH (Δ Sales)	H1a	- 0.004	0.050	0.83
Pressure	LEV	H1b	+ 0.025	0.414	0.61
Opportunity	COMBODs	H2a	+ 1.461**	0.505	2.89
	ΔHIA	H2b	+ 1.838***	0.444	4.14
Attitude/ Rationalisation	HFRTs	H3a	+ 2.199***	0.478	4.60
	ΔACCPOL	H3b	+ 1.867***	0.447	4.17
Capability/ Competence	UNDPOL	H4a	+ 2.562	2.321	1.10
	SPVACC	H4b	- 7.176***	0.747	9.61

, * = Significant at p-value < 0.05 and 0.01 respectively.

Five explanatory variables are significant at the 1% and 5% significant levels. Similar with Model 1 of logistic RE models, composition of BODs, turnover of HIA, historical financial restatement times and changes in accounting policies are positively significant. However, Model 2 has led growth (return on assets) to be insignificant and has changed no access to SPVs' financial reports to be negatively significant. Turnover of HIA, historical financial restatement times, changes in accounting policies and no access to SPVs' financial reports display similar highest significant values (sig. = 0.000).

Historical financial restatement times display the strongest relationship (coefficient = 2.199) as compared to the changes in accounting policies (coefficient = 1.867) and turnover of HIA (coefficient = 1.838), while no access to SPVs' financial reports displays the strongest inverse relationship (coefficient = -7.176). Meanwhile, similar with logistic FE models, undeclared policies on doubtful debts and accounts receivable displays the highest SE. Similarly, growth (changes in sales) also displays the lowest SE as in logistic FE models and in Model 1 of logistic RE models.

The insignificant results of undeclared policies on doubtful debts and accounts receivable from both models are in contrast to several research studies. Although explanations for account receivable are typically based on subjective judgements (see Person, 1995; Summers & Sweeney, 1998) and hence, are becoming tools for financial statement manipulation (Summers & Sweeney, 1998), this research indicates the opposite result. The results are unable to support the contention that management may manipulate accounts receivable in many possible ways (Feroz *et al*., 1991; Green, 1991; Stice, 1991; Schilit, 1993; Persons, 1995).

The results also differ from some research studies that link capability/competence with manipulation of certain financial variables in financial reports (see Loebbecke *et al*., 1989; Wright & Ashton, 1989; Green, 1991; Schilit, 1993). This is because the majority of Malaysian PLCs had indeed declared policies on doubtful debt and account receivable in financial reports. This research believes that the insignificant results are resulted from effective monitoring mechanisms by Bursa Malaysia. In Chapter 5 (Section 5.2.1), this research highlighted that Bursa Malaysia considers undeclared policies on doubtful debts and accounts receivable as one of the serious FFR cases, hence specific attentions were given in this area. As a result, Malaysian PLCs were fully aware of the importance to declare policies on doubtful doubt and account receivable in financial reports.

Meanwhile, no access to SPVs' financial report is insignificant in logistic FE models, but significant in logistic RE models. However, the significant value is negative, which suggest an inverse causal-effect relationship between this proxy variable and the DV. This research found that most of Malaysian PLCs (i.e. fraudulent and non-fraudulent PLCs) did not provide access to special purpose vehicles (SPVs') accounts. This is because SPVs' financial reports are not a mandatory requirement for Malaysian PLCs' public disclosure. Information from SPVs' financial reports could be diverted into PLCs' subsidiaries accounts. As a result, it is difficult to detect actual transactions from SPVs' financial reports among Malaysian PLCs.

7.2.3 Model 3

Model 3 incorporates explanatory variables from Crowe's Fraud Pentagon Model. Thus, twelve proxy variables [i.e. GROWTH (ROA), GROWTH (Δ Sales), LEV, COMBODs, ΔHIA, HFRTs, ΔACCPOL, UNDPOL, SPVACC, CEODUAL, POLCEO and CEOPIC] representing seven fraud-risk factors (i.e. incentive, pressure, opportunity, attitude, rationalisation, capability/competence and arrogance) are included in the model.

Similar with Model 2, there is no empirical research that examines the causal-effect relationship between FFR and the fraud-risk factors from Crowe's Fraud Pentagon Model was found at the time of this research. Therefore, the addition of capability/competence and arrogance as additional fraud-risk factors of the Fraud Triangle Model and Fraud Diamond Model might suggest different results from Model 1 and Model 2. Table 7.6 presents the results of logistic FE models.

Table 7.6: Logistic Fixed-Effects for Model 3

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	Explanatory Variables	Hypotheses	Coef.	Std. Err. (SE)	z-score
Incentive	GROWTH (ROA)	H1a	+ 1.230	2.074	0.59
	GROWTH (Δ Sales)	H1a	- 0.002	0.005	0.34
Pressure	LEV	H1b	+ 0.045	0.063	0.72
Opportunity	COMBODs	H2a	+ 1.005	0.808	1.24
	ΔHIA	H2b	+ 3.339***	0.955	3.50
Attitude/ Rationalisation	HFRTs	H3a	+ 17.630	1288.553	0.01
	ΔACCPOL	H3b	+ 2.580***	0.849	3.04
Capability/ Competence	UNDPOL	H4a	+ 14.687	6565.626	0.00
	SPVACC	H4b	+ 4.111*	2.437	1.69
Arrogance	CEODUAL	H5a	+ 2.360	2.093	1.13
	POLCEO	H5b	+ 16.518	3778.659	0.00
	CEOPIC	H5c	+ 0.123	0.088	1.41

*'*** = Significant at p-value < 0.10 & 0.01 respectively.

The inclusion of CEO duality, a CEO and/or Chairman of BODs who is also a politician and the number of CEO's pictures in Malaysian PLCs' annual reports of arrogance has caused composition of BODs to be insignificant in Model 3, although the explanatory variable was previously significant in Model 1 and Model 2 of logistic FE models. However, this model indicates no access to SPVs' financial reports to be positively significant along with turnover of HIA and changes in accounting policies at the 1% and 10% significant level. In addition, turnover of HIA displays the highest significant result with the DV (sig. = 0.000).

Meanwhile, historical financial restatements times and undeclared policies on doubtful debts and account receivables maintain the highest coefficient and SE respectively as in Model 2. Consistent with Model 1 and Model 2, growth (changes in sales) also maintains the lowest SE, although the explanatory variable is not significant and demonstrates an inverse effect with the DV.

Table 7.7 presents the results of logistic RE models.

Table 7.7: Logistic Random-Effects for Model 3

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	Explanatory Variables	Hypotheses	Coef.	Std. Err. (SE)	z-score
Incentive	GROWTH (ROA)	H1a	+ 0.879	0.883	0.99
	GROWTH (Δ Sales)	H1a	- 0.004	0.005	0.78
Pressure	LEV	H1b	- 0.016	0.032	0.50
Opportunity	COMBODs	H2a	+ 0.872*	0.454	1.92
	ΔHIA	H2b	+ 2.018***	0.428	4.71
Attitude/ Rationalisation	HFRTs	H3a	+ 1.859***	0.470	3.96
	ΔACCPOL	H3b	+ 1.921***	0.441	4.36
Capability/ Competence	UNDPOL	H4a	+ 1.681	2.791	0.60
	SPVACC	H4b	- 5.172***	0.583	8.87
Arrogance	CEODUAL	H5a	- 1.067*	0.648	1.65
	POLCEO	H5b	+ 1.598**	0.694	2.30
	CEOPIC	H5c	- 0.308***	0.053	5.87

*',*** = Significant at p-value < 0.10, 0.05 & 0.01 respectively.**

Eight explanatory variables are significant in Model 3 at the 1%, 5% and 10% significant levels. The inclusion of CEO duality, a CEO and/or Chairman of BODs who is also a politician and the number of CEO's pictures in Malaysian PLCs' annual reports has not only remained all significant explanatory variables from Model 2, but has also added all three explanatory variables representing arrogance to be significant. However, three explanatory variables are negatively significant (i.e. no access to SPVs' financial reports, CEO duality and number of CEO's pictures in Malaysian PLCs' annual reports), leaving the rest significant variables to be positively significant. Turnover of HIA, historical financial restatements times, changes in accounting policies and number of CEO's pictures in Malaysian PLCs' annual reports display similar highest significant values (sig. = 0.000).

Additionally, turnover of HIA also displays the strongest relationship (coefficient = 2.018) as compared to changes in accounting policies (coefficient = 1.921) and historical financial restatements times (coefficient = 1.859). Meanwhile, no access to SPVs' financial reports displays the strongest inverse relationship (coefficient = -5.172), followed by CEO duality (coefficient = -1.067). Undeclared policies on doubtful debts and account receivables maintains the highest SE as in Model 2. Similarly, growth (changes in sales) maintains the lowest SE as in Model 1 and Model 2 of logistic RE models.

CEO duality is insignificant in logistic FE models, but significant in logistic RE models. Nevertheless, the negative significant value suggests an inverse causal-effect relationship between this proxy variable and the DV. These results are in contrast with a few research (see Loebbecke *et al*., 1989; Beasley, 1996; Beasley *et al*., 1999; Abbott *et al*., 2000; Dunn, 2004; Skousen *et al*., 2009) who suggested that CEO duality is in a position to dominate decision-making that may provide opportunity to commit fraud.

However, these results are consistent with Abdullah (2004), who found that CEO duality is not related to Malaysian PLCs' performance. In Chapter 5 (Section 5.3.1), this research has predicted that CEO duality would possibly not indicative of the likelihood of FFR among Malaysian PLCs. This is because SC (2015) has required any member of BODs to declare their direct and indirect interest in relation to the BODs. The requirement seems to be effective, since the majority of Malaysian PLCs did not practise CEO duality. Consequently, it is believed that it may be too obvious for a Malaysian PLC to practise CEO duality nowadays because CEO duality may suggest an inappropriate practice to shareholders. Additionally, CEO duality can neutralise the effectiveness of corporate governance practices by promoting a unitary leadership as suggested by Rezaee (2005).

Meanwhile, a CEO and/or Chairman of BODs who is also a politician is insignificant in logistic FE models, but positively significant in logistic RE models. The positive significant result suggests that a CEO and/or a Chairman of BODs in Malaysian PLC who is also a politician may lead to a culture of arrogance (in term of attitude of superiority and entitlement) through a combination of political interest and power. These results have strengthen the claim that there is a relationship between politics and power in organisations (see Mulder, 1977; Pfeffer, 1981; Mintzberg, 1983; Pettigrew, 1992; Dawson, 1994; 2001; Buchanan & Badham, 1999; Hasnan *et al*., 2008; Dalnial *et al*, 2014; Ahmad Khair *et al*., 2015). More importantly, the results have also supported a few research studies that connect Malaysian politicians with the misused of power in several Malaysian PLCs (see Hasnan *et al*., 2008; Dalnial *et al*, 2014; Ahmad Khair *et al*., 2015).

These results show that some PLCs in Malaysia are not entirely free from political influences. The involvement of politicians in these PLCs has resulted in ineffective corporate governance, which can eventually lead to FFR scandals. This is possibly because a politician needs to cultivate votes for political survival. This could lead a PLC to commit FFR in a situation in which this PLC has to make an investment decision that has political implications. As a result, the CEO and/or Chairman of BODs would use his/her power to support such an investment that might not be in the shareholders' best interests. This situation shows that arrogance could be also caused by political pressures (see Murdock, 2008; Kassem & Higson, 2012). As a result, a CEO and/or Chairman of BODs who is also a politician allows the abuse of political power to protect the CEO and/or Chairman of BODs' arrogance, which eventually suggests that FFR is likely to occur.

Similar to CEO duality, number of CEO's pictures in Malaysian PLCs' annual reports is insignificant in logistic FE models, but negatively significant in logistic RE models. The negative significant result supports another perspective of arrogance, which predicts lesser number of CEOs' pictures in annual reports indicates higher tendency for the CEOs to maintain low profiles and to hide their arrogance, thus their FFR activities. This imply an element of secrecy among the Malaysian CEOs in committing FFR. According to Marriage (2013), secrecy of ownership and control is a key mechanism that allows money laundering and keeps money untaxed. Based on this claim, this research believes that 'secrecy of ownership and control' can be applied to CEOs' power in deciding the exposure of the number of CEOs' pictures in annual reports. In this situation, some CEOs prefer to embrace secrecy element as the key mechanism for FFR activities.

The element of secrecy is unsurprisingly making sense in the Malaysian context, since the Asian culture is typically synonymous with secrecy. As suggested by Hope *et al.* (2008), there is extensive research suggesting that national cultural values influence managerial decisions (see Hofstede, 1980; Gray, 1988; Salter & Niswander, 1995; Ralston *et al.*, 1997; Stulz & Williamson, 2003; Hope, 2003; House *et al.*, 2004; Guiso *et al.*, 2006). Based on secretive measure, Hope *et al.* (2008) found that Malaysia was among the countries with most secretive of accounting disclosures (114), along with Korea (127), Indonesia (112), Thailand (108), Philippines (106) and Japan (100). Negative significant results on CEOPIC seem to support the finding by Hope *et al.* (2008) in conjunction with national culture and secrecy.

The use of the number of CEOs' pictures in annual reports to hide FFR activities can also be associated with the use of encryption to hide criminal activity as claimed by Denning and Baugh Jr. (1999). Encryption is a powerful tool that provides an advantage to criminals to conceal their crime activities (Denning & Baugh Jr., 1999). Thus makes it difficult for law enforcement agencies to obtain solid evidence for a conviction (Denning & Baugh Jr., 1999). Likewise, this proxy variable could be seen as the 'encryption' for FFR activities. As explained in Chapter 5 (Section 5.4.1), instead of functioning as PLCs' 'business cards' (Mock, 1992), annual reports could also provide material evidence for FFR investigations. As such, some CEOs might believe that too much exposure of their pictures in annual reports could potentially imply the symbol of arrogance among the shareholders and may attract public's attentions. Therefore, by minimising the number of their pictures in annual reports, these CEOs could limit their appearances and maintain low profiles to commit FFR without being publicly exposed and detected.

7.2.4   Model 4

Model 4 incorporates all explanatory variables from the Fraud Models, as well as additional fraud-risk factors derived from the interviews. Thus, sixteen proxy variables [i.e. GROWTH (ROA), GROWTH (Δ Sales), LEV, COMBODs, ΔHIA, HFRTs, ΔACCPOL, UNDPOL, SPVACC, CEODUAL, POLCEO, CEOPIC, INEDU, REMDAYs, EXREMU (ACTUAL) and EXREMU (RATIO)] are included in the model. These proxy variables represent nine explanatory variables (i.e. incentive, pressure, opportunity, attitude, rationalisation, capability/competence, arrogance, ignorance and greed).

Similar with Model 2 and Model 3, there is no empirical research that examines causal-effect relationship between FFR and all these fraud-risk factors was found at the time of this research. Therefore, the addition of capability/competence, arrogance, ignorance and greed as additional fraud-risk factors of the Fraud Triangle Model might suggest different results from Model 1, Model 2 and Model 3. Table 7.8 presents the results of logistic FE models.

The inclusion of all factors has caused undeclared policies on doubtful debts and account receivables to be insignificant in Model 4, although the explanatory variable was significant in Model 3. However, turnover of HIA and changes in accounting policies remain to be positively significant at the 1% significant level. Additionally, turnover of HIA also displays the highest significant result (sig. = 0.001).

Table 7.8: Logistic Fixed-Effects for Model 4

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	Explanatory Variables	Hypotheses	Coef.	Std. Err. (SE)	z-score
Incentive	GROWTH (ROA)	H1a	+ 1.291	2.228	0.58
	GROWTH (Δ Sales)	H1a	- 0.000	0.005	0.05
Pressure	LEV	H1b	+ 0.049	0.074	0.67
Opportunity	COMBODs	H2a	+ 0.803	0.853	0.94
	ΔHIA	H2b	+ 3.450***	1.023	3.37
Attitude/ Rationalisation	HFRTs	H3a	+ 19.153	2185.456	0.01
	ΔACCPOL	H3b	+ 2.732***	0.913	2.99
Capability/ Competence	UNDPOL	H4a	+ 15.217	20584.77	0.00
	SPVACC	H4b	+ 3.440	2.564	1.34
Arrogance	CEODUAL	H5a	+ 2.141	2.160	0.99
	POLCEO	H5b	+ 16.909	6553.457	0.00
	CEOPIC	H5c	+ 0.149	0.093	1.60
Ignorance	INEDU	H6a	- 0.186	0.341	0.55
	REMDAYs	H6b	- 0.013	0.011	1.15
Greed	EXREMU (ACTUAL)	H7a	- 1.69e-07[38]	1.77e-07	0.96
	EXREMU (RATIO)	H7a	+ 0.616	0.930	0.66

*** = Significant at p-value < 0.01.

Meanwhile, historical financial restatements times and undeclared policies on doubtful debts and accounts receivable maintain the highest coefficient and SE respectively as in Model 2 and Model 3 of logistic FE models. Consistent with Model 1, Model 2 and Model 3, gowth (changes in sales) also maintains the lowest SE, although the explanatory variable is not significant and demonstrates an inverse effect with the DV. Table 7.9 presents the results of logistic RE models.

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[38] e-07 represents x 10^-7 which resulted in 7 decimal points (i.e. 0.0000169 for H7a)

Table 7.9: Logistic Random-Effects for Model 4

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	Explanatory Variables	Hypotheses	Coef.	Std. Err. (SE)	z-score
Incentive	GROWTH (ROA)	H1a	+ 1.200	0.943	1.27
	GROWTH (Δ Sales)	H1a	- 0.002	0.005	0.39
Pressure	LEV	H1b	- 0.001	0.037	0.03
Opportunity	COMBODs	H2a	+ 0.812*	0.460	1.77
	ΔHIA	H2b	+ 2.233***	0.453	4.93
Attitude/ Rationalisation	HFRTs	H3a	+ 1.824***	0.504	3.62
	ΔACCPOL	H3b	+ 2.041***	0.473	4.31
Capability/ Competence	UNDPOL	H4a	+ 0.885	4.286	0.21
	SPVACC	H4b	- 4.546***	0.607	7.49
Arrogance	CEODUAL	H5a	- 1.376**	0.671	2.05
	POLCEO	H5b	+ 1.790**	0.796	2.25
	CEOPIC	H5c	- 0.182***	0.055	3.33
Ignorance	INEDU	H6a	- 0.843***	0.259	3.25
	REMDAYs	H6b	- 0.013*	0.007	1.92
Greed	EXREMU (ACTUAL)	H7a	- 1.05e-07	0.061	1.55
	EXREMU (RATIO)	H7a	+ 0.095	8.88e-08	1.18

*,**,*** = Significant at p-value < 0.10, 0.05 & 0.01 respectively.

The inclusion of all factors has increased the number of significant explanatory variables in Model 4. Ten explanatory variables are significant in this model at the 1%, 5% and 10% significant levels. However, five explanatory variables are negatively significant (i.e. no access to SPVs' financial reports, CEO duality, number of CEO's pictures in Malaysian PLCs' annual reports, insufficient corporate governance courses for Executive and Non-Executive Directors and days taken to submit annual financial reports as at financial year-end), leaving five other explanatory variables to be positively significant (i.e. composition of BODs, turnover of HIA, historical financial restatements times, changes in accounting policies and a CEO and/or Chairman of BODs who is also a politician).

Turnover of HIA, historical financial restatements times, changes in accounting policies and no access to SPVs' financial reports display similar highest significant values (sig. = 0.000). Turnover of HIA displays the strongest relationship (coefficient = 2.233) as compared to changes in accounting policies (coefficient = 2.041) and historical financial restatements times (coefficient = 1.824). Meanwhile, no access to SPVs' financial reports displays the strongest inverse relationship (coefficient = -4.546), followed by CEO duality (coefficient = -1.376). Similar with Model 2 and Model 3 of logistic RE models, undeclared policies on doubtful debts and accounts receivable displays the highest SE. However, growth (changes in sales) maintains the lowest SE as in Model 1, Model 2 and Model 3 of the RE models.

Insufficient corporate governance courses for Executive and Non-Executive Directors is insignificant in logistic FE models, but significant in logistic RE models. However, the significant value is negative, which suggest an inverse result causal-effect relationship between this proxy variable and the DV. The result suggests that insufficient corporate governance courses among Executive and Non-Executive Directors in Malaysian PLCs does not indicate the higher tendency towards the likelihood of FFR. In this relation, it is believed that potential fraudsters in Malaysian PLCs would always find an effective way to commit FFR, regardless of the level of knowledge that most of Executive and Non-Executive Directors have gained from the corporate governance courses. In fact, these fraudsters would be well-informed on the FFR-detection mechanisms if they were to attend the corporate governance courses in the capacity of Executive and Non-Executive Directors.

Likewise, days taken to submit annual financial reports as at financial year-end is insignificant in logistic FE models, but significant in logistic RE models. However, the significant value is negative, which suggest an inverse result causal-effect relationship between this proxy variable and the DV. In contrast to discussions in Chapter 5 (Section 5.4.2.2), the result suggests that most of Malaysian PLCs did not make late submissions on purpose because they need more time to prepare and amend some of doubtful figures in financial reports. Instead, the late submissions were resulted from other genuine factors such as PLCs' restructuring and internal issues. In these situations, some PLCs might need more than four months after the financial year-end to submit their financial reports as required by Bursa Malaysia (Bursa Malaysia, 2015a).

Meanwhile, the insignificant results for actual amounts of Executive Directors' remunerations and a ratio between Executive Directors' remunerations and profits/losses after taxation in both models suggest that a higher or lower Executive Directors' remunerations is not necessarily indicative of fraudsters committing FFR. One of the reasons could be related to previous discussions for H6a that some of the fraudsters would be well-informed on the FFR-detection mechanisms when they attend corporate governance courses in the capacity of Executive and Non-Executive Directors. Executive Directors' remunerations could be one of the favourite areas for FFR-detection mechanisms because this proxy variable represents monetary rewards. Therefore, it is too common and obvious for most of the auditors and forensic accountants to associate Executive Directors' remunerations with the likelihood of FFR. In this context, most potential fraudsters would not prefer to be associated with their remunerations if they were to commit FFR. In other words, these results also suggest that the likelihood of FFR among Malaysian PLCs can occur regardless the amount of Executive Directors' remunerations.

7.3 Decision between Logistic Fixed-Effects and Random-Effects Models

In order to decide the appropriate model in predicting the likelihood of FFR, this research follows recommendations by Jerry A. Hausman (1978) to run the Hausman Test. Generally, the Null Hypothesis (H_0) and Alternative Hypothesis (H_1) are written as follows:

H_0: Logistic Random-Effects model is appropriate

H_1: Logistic Fixed-Effects model is appropriate

RE models are preferred for the H_0 due to higher efficiency, while under the FE models are at least consistent (James, 1954). If the probability value (p-value) is lower than the chi-square (χ^2) value, this research will reject H_0. In contrast, if the p-value is higher than the χ^2 value, this research will not reject H_0 and accept logistic RE as an appropriate model. Realising the possibility that each of the Fraud Model (Model 1 to Model 4) might be appropriate in either logistic FE or RE models, the Hausman Tests are conducted separately[39]. The results of Hausman Tests are summarised in Table 7.10.

Table 7.10: Summary of the Hausman Tests

Model	Hypotheses	χ^2 value	p-value	Reject or Fail to Reject H_0	Appropriate Model (RE or FE)
Model 1	H1a to H3b	13.22	0.021	Reject H_0	FE Model
Model 2	H4a to H4b	30.52	0.000	Reject H_0	FE Model
Model 3	H5a to H5c	14.78	0.022	Reject H_0	FE Model
Model 4	H6a to H7a	10.29	0.036	Reject H_0	FE Model

The summary suggests that logistic FE models are appropriate for Model 1, Model 2, Model 3 and Model 4. However, the decision of choosing the appropriate models is not solely driven by the results of Hausman Tests, but also must be justified by applicable reasoning.

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[39] Details of the Hausman Tests for contemporary and lagged explanatory variables are enclosed in **Appendix 6**.

According to Schmidt *et al*. (2009), the differences between FE models and RE models have been discussed by many scholars in statistics (see Becker & Schram, 1994; Raudenbush, 1994; Shadish & Haddock 1994; Hedges & Vevea, 1998; Overton, 1998; Hunter & Schmidt, 2000; Field, 2003; Schulze, 2004). The basic distinction between these two models is that the FE model assumes all data share a common effect size, while the RE model assumes that data vary with each other and there is a distribution of true effect sizes (Schmidt *et al*., 2009). Normally, the selection of FE models is made based on the principle that each explanatory variable has its own individual characteristics that may or may not influence the DV. FE models also assume that those time-invariant characteristics are unique to the individual and should not be correlated with other individual characteristics (Baltagi, 2008). Each entity is different, therefore the entity's error term and the constant (which captures individual characteristics) should not be correlated with the others (Baltagi, 2013). FE removes the effect of those time-invariant characteristics, so the net effect of the predictors can be assessed on the outcome variable (Baltagi, 2013).

Unlike FE models, the variation across entities in RE models is assumed to be random and uncorrelated with the explanatory variables included in the model (Greene, 2008). RE models generalise the inferences beyond the sample used in the model (Greene, 2008). If this assumption holds, RE models are more efficient in generalising the the results than the FE models (Diggle *et al*., 2002). Based on this distinction, Borenstein *et al*. (2010) claimed that the vast majority of meta-analyses had chosen RE models as the appropriate choices because the RE models: (1) are more likely to fit the actual sampling distribution; (2) do not impose a restriction of a common effect size; (3) yield the identical results as the FE models in the absence of heterogeneity; and (4) allow the conclusions to be generalised to a wider array of situations.

These reasons are in line with the requirements of this research. The Hausman Tests indicate a decreasing trend for the χ^2 values (except for Model 1). Apart from determining H_0 based on sampling distribution, the χ^2 values are also determining the differences between expected frequencies and observed frequencies (Field, 2013). As such, decreased χ^2 values in Model 2, Model 3 and Model 4 suggest a significant difference between logistic FE models and RE models, which also indicate the existence of significant explanatory variables.

Additionally, the prediction power for logistic RE models is higher than logistic FE models. This evidence is supported by binomial logistic equations for each logistic model. Comparatively, the number of significant explanatory variables in logistic RE models is higher than logistic FE models. This is because logistic RE models are not only suggesting similar significant explanatory variables as in logistic FE Models, but also improving the prediction power by adding more significant explanatory variables. High prediction power is essential to generate meaningful results, which can be generalised in the Malaysian context. Table 7.11 compares these distinctions.

Table 7.11: Distinctions on Significant Explanatory Variables between Logistic FE Models and Logistic RE Models

Model	Logistic FE Models	Logistic RE Models
1	$FFR_{it} = \beta_0 + 2.813(\Delta HIA_{it}) + 2.638(\Delta ACCPOL_{it}) + 1.377(COMBODs_{it}) + \varepsilon_t$	$FFR_{it} = \beta_0 - 2.003[GROWTH(ROA)_{it}] + 1.874(\Delta HIA_{it}) + 1.724(HFRTs_{it}) + 1.621(\Delta ACCPOL_{it}) + 1.437(COMBODs_{it}) + \varepsilon_t$
2	$FFR_{it} = \beta_0 + 2.862(\Delta HIA_{it}) + 2.729(\Delta ACCPOL_{it}) + 1.216(COMBODs_{it}) + \varepsilon_t$	$FFR_{it} = \beta_0 - 7.176(SPVACC_{it}) + 2.199(HFRTs_{it}) + 1.867(\Delta ACCPOL_{it}) + 1.838(\Delta HIA_{it}) + 1.461(COMBODs_{it}) + \varepsilon_t$
3	$FFR_{it} = \beta_0 + 4.111(SPVACC_{it}) + 3.339(\Delta HIA_{it}) + 2.580(\Delta ACCPOL_{it}) + \varepsilon_t$	$FFR_{it} = \beta_0 - 5.172(SPVACC_{it}) + 2.018(\Delta HIA_{it}) + 1.921(\Delta ACCPOL_{it}) + 1.859(HFRTs_{it}) + 1.598(POLCEO_{it}) - 1.067(CEODUAL_{it}) + 0.872(COMBODs_{it}) - 0.308(CEOPIC_{it}) + \varepsilon_t$
4	$FFR_{it} = \beta_0 + 3.450(\Delta HIA_{it}) + 2.732(\Delta ACCPOL_{it}) + \varepsilon_t$	$FFR_{it} = \beta_0 - 4.546(SPVACC_{it}) + 2.233(\Delta HIA_{it}) + 2.041(\Delta ACCPOL_{it}) + 1.824(HFRTs_{it}) + 1.790(POLCEO_{it}) - 1.376(CEODUAL_{it}) - 0.843(INEDU_{it}) + 0.812(COMBODs_{it}) - 0.182(CEOPIC_{it}) - 0.013(REMDAYs_{it}) + \varepsilon_t$

In most of the cases, logistic RE models allow the inclusion of additional explanatory variables by reducing the strength of relationship with the DV. Incidentally, this research would have more explanatory variables from logistic RE Models, which beneficial to decide suitable fraud-risk factors in predicting the likelihood of FFR among Malaysian PLCs. The p-values in most of the models (Model 1, Model 3 and Model 4) are significant at 95% of confidence interval (i.e. p-values = 0.021, 0.022 and 0.036 respectively[40]), in which the critical value is 5% (p-value < 0.05). It can be seen that the p-values are increasing as the analyses move along from Model 1 to Model 3 and Model 4. These increasing trends imply the possibility of increasing critical value from 5% to 10% and reducing confident interval from 95% to 90%.

Figure 7.3 illustrates this possibility based on the Hausman Test result for Model 4. In order to overcome the risk of reducing significant results, this research has decided to accept p-values at the 99% confident interval. In this relation, only Model 2 fulfils this requirement (p-value = 0.000), while Model 1, Model 3 and Model 4 show the inverse results. As such, in contrast to the Hausman Test results, this research fails to reject the H_0.
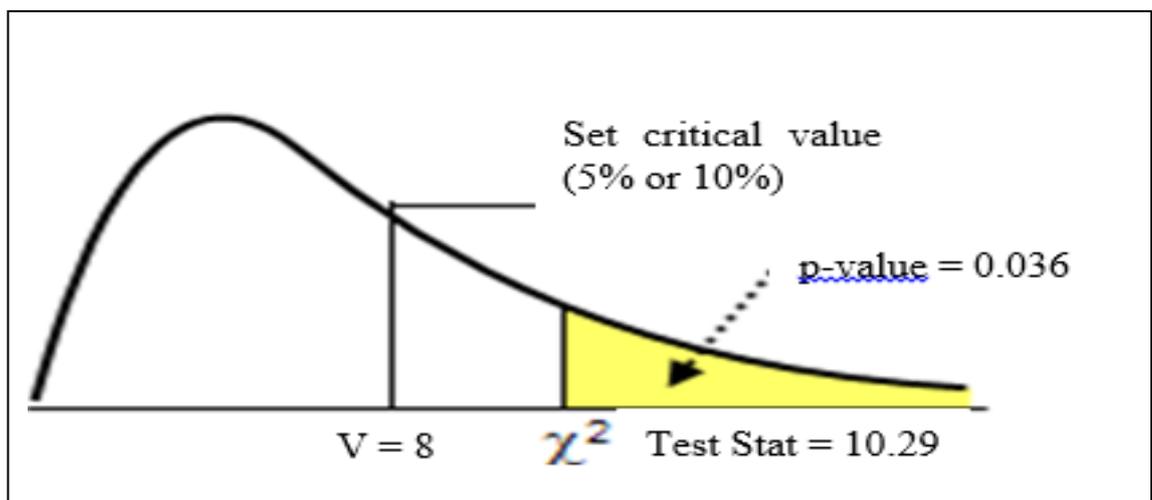
Figure 7.3: Possibility of Increasing Critical Value from 5% to 10%.

Furthermore, unlike logistic RE models, FE models generate high standard error (SE) for several proxy variables (i.e. historical financial restatement times, undeclared policies on doubtful debts and account receivables, and a CEO and/or Chairman of BODs who is also a politician) as shown in Section 7.2. These proxy variables exhibit large residuals and hence, the logistic FE models are unable to yield the identical results. If this research were to utilise the logistic FE models, the high SE would reflect a low precision of estimates for these proxy variables. However, the issue of high SE for the same proxy variables did not occur in logistics RE models.

In short, FE models estimate the population level coefficients, while RE models can account for individual differences (Diggle *et al*., 2002; Schulze, 2004; Borenstein *et al*., 2010). In other words, RE models estimate the mean of a distribution of effects and enable principled application of the idea to a wide variety of situations, including categorical variables, which are applicable for this research. These differences suggest that logistic RE models are more appropriate than logistic FE models within the context of this research.

7.4   Decisions for Suitable Explanatory Variables for the Research

Having justified the choice of logistics RE Models over logistic FE Models, this research has to decide the appropriate explanatory variables from the logistics RE Models. As such, this research follows a recommendation proposed by Menard (2010) to observe the efficiency of model estimation by excluding irrelevant explanatory variables. In this relation, this research uses a step-down hierarchical procedure of the joint tests as recommended by Lautenschlager and Mendoza (1986). This procedure begins with logistics RE Models that contain the most explanatory variables. Table 7.12 presents the results of the joint tests for all models (Model 1, Model 2, Model 3 and Model 4).

Table 7.12: Joint Tests between Model 4, Model 3, Model 2 and Model 1

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	**Explanatory Variables**	**Model 4 Coefficient**	**Model 3 Coefficient**	**Model 2 Coefficient**	**Model 1 Coefficient**
Incentive	GROWTH (ROA)	+1.200	+0.879	- 0.841	- 2.003*
	GROWTH (Δ Sales)	-0.002	-0.004	- 0.004	- 0.004
Pressure	LEV	-0.001	-0.016	+ 0.025	+ 0.011
Opportunity	COMBODs	+0.812*	+0.872*	+ 1.461**	+ 1.437**
	ΔHIA	+2.233***	+2.018***	+ 1.838***	+ 1.874***
Attitude/ Rationalisation	HFRTs	+1.824***	+1.859***	+ 2.199***	+ 1.724***
	ΔACCPOL	+2.041***	+1.921***	+ 1.867***	+ 1.621***
Capability/ Competence	UNDPOL	+0.885	+1.681	+ 2.562	
	SPVACC	-4.546***	-5.172***	- 7.176***	
Arrogance	CEODUAL	-1.376**	-1.067*		
	POLCEO	+1.790**	+1.598**		
	CEOPIC	-0.182***	-0.308***		
Ignorance	INEDU	-0.843***			
	REMDAYs	-0.013*			
Greed	EXREMU (ACTUAL)	-1.05e-07			
	EXREMU (RATIO)	+0.095			

*,**, *** = Significant at p-value < 0.10, 0.05 and 0.01 respectively.

Five explanatory variables (i.e. composition of BODs, turnover of HIA, historical financial restatements times, changes in accounting policies and a CEO and/or Chairman of BODs who is also a politician) are positively significant in all models. Among these variables, turnover of HIA, historical financial restatements times and changes in accounting policies are highly significant in all models at the 1% significant level. As explained in Chapter 5 (Section 5.4.1), one of the perspectives measured in H5c involves the possibility that some CEOs in fraudulent Malaysian PLCs prefer to maintain low profiles in order to hide their FFR activities from being publicly exposed and detected. As a result, this research also includes the number of CEO's pictures in Malaysian PLCs' annual reports as significantly indicative of likelihood of FFR.

Meanwhile, no access to SPVs' financial reports is negatively significant in Model 1, Model 2 and Model 3, while CEO duality is negatively significant in Model 3 and Model 4. Growth (return on assets) is negatively significant in Model 1. Likewise, explanatory variables for ignorance (i.e. insufficient corporate governance courses for Executive and Non-Executive Directors and days taken to submit annual financial reports as at financial year-end) are also significant. However, both explanatory variables demonstrate inverse relationships. Based on this test, this research makes a tentative conclusion that composition of BODs, turnover of HIA, historical financial restatements times, changes in accounting policies, a CEO and/or Chairman of BODs who is also a politician and the number of CEO's pictures in Malaysian PLCs' annual reports are significantly indicative of the likelihood of FFR.

7.5   Specifying Lagged Values on Explanatory Variables

Apart from employing contemporary explanatory variables, which are based on the years in which FFR was detected, this research also considers a recommendation by Finkel (1995) to specify lagged values on explanatory variables in predicting the causal-effect relationship. Lagged explanatory variables are a common strategy used in response to endogeneity concerns in observational data (Finkel, 1995). Endogeneity can happen when relevant explanatory variables (including different periods) are omitted from the model (Bellemare *et al*., 2015).

In Chapter 5 (Section 5.1.2.2), this research has discussed that Bursa Malaysia does not control changes of HIA among Malaysian PLCs as HIA is considered as PLC's employee. Similarly, Malaysian PLCs are allowed to change their accounting policies, as long as the changes are within Generally Accepted Accounting Principles (GAAP).

This principle is also applicable in appointing or replacing Independent Non-Executive Directors on the Board of Directors. Subjective justifications for changing the HIA and accounting policies, as well as appointing or replacing Independent Non-Executive Directors, suggest that there is a room for Malaysian PLCs' top management to plan FFR systematically.

Practically, if a Malaysian PLC intends to commit FFR on the next year, there is a possibility that the current HIA or Independent Non-Executive Directors (who are obviously not involved in FFR activities) could anticipate any suspicious transactions or doubtful accounts. Therefore, changing the HIA or Independent Non-Executive Directors on a year before the FFR is committed seems to be an effective strategy to cover up FFR activities. Similarly, a fraudulent Malaysian PLC may change the accounting policies that are favourable to cover up FFR activities.

The similar principle could be implemented on other proxy variables. As such, this research also explores the determinant effects of explanatory variables in a year before FFR was occurred (preceding years). Since specifying lagged values would be resulted in generating new values for each of the explanatory variable, it would be appropriate to evaluate the effects of lagged explanatory variables in both logistic FE and RE models before conducting the Hausman Test.

Similar to contemporary explanatory variables (Section 7.2), the analyses would begin with logistic FE models for lagged explanatory variables. However, Model 1, Model 2, Model 3 and Model 4 have indicated insignificant results for all explanatory variables of the logistic FE models. Therefore, details of analysis and discussions for logistic FE models are attached in **Appendix 7**.

7.5.1   Lagged Variables on Model 1

In Model 1, the lagged variables for GROWTH (ROA)L1, GROWTH (SALES)L2, LEVL3, COMBODsL4, ΔHIAL5, HFRTsL6 and ΔACCPOLL7 are chosen to represent five fraud-risk factors (i.e. incentive, pressure, opportunity, attitude and rationalisation) from the Fraud Triangle Model. Table 7.13 presents the results.

Table 7.13: Lagged Explanatory Variables on Logistic Random Effect of Model 1

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	**Lagged Explanatory Variables**	**Hypotheses**	**Coef.**	**Std. Err. (SE)**	**z-score**
Incentive	GROWTH (ROA)L1	H1a	- 2.262**	0.905	2.50
	GROWTH (Δ Sales)L2	H1a	+ 0.000	0.001	0.42
Pressure	LEVL3	H1b	+ 0.007	0.037	0.20
Opportunity	COMBODsL4	H2a	+ 0.068	0.488	0.14
	ΔHIAL5	H2b	- 1.233**	0.548	2.25
Attitude/	HFRTsL6	H3a	- 0.215	0.357	0.60
Rationalisation	ΔACCPOLL7	H3b	- 0.852**	0.418	2.04

** = Significant at p-value < 0.05.

Three explanatory variables are negatively significant at the 5% significant level [i.e. GROWTH (ROA)L1, ΔHIAL5 and ΔACCPOLL7]. The lagged variable for growth (return on assets) has the strongest relationship (coefficient = 2.262) and also displays the highest SE. In contemporary logistic RE models (Section 7.2.1), four explanatory variables (i.e. composition of BODs, turnover of HIA, historical financial restatements times and changes in accounting policies) were found positively significant. However, specifying lagged values on Model 1 has led two explanatory variables to be insignificant (i.e. composition of BODs and historical financial restatements times) and three significant explanatory variables with inverse relationships with the DV [i.e. growth (return on assets), turnover of HIA and changes in accounting policies].

7.5.2 Lagged Variables on Model 2

In Model 2, the lagged variables for GROWTH (ROA)L1, GROWTH(Δ Sales)L2, LEVL3, COMBODsL4, ΔHIAL5, HFRTsL6, ΔACCPOLL7, UNDPOLL8 and SPVACCL9 are chosen to represent six fraud-risk factors (i.e. incentive, pressure, opportunity, attitude, rationalisation and capability/competence) from the Fraud Diamond Model. Table 7.14 presents the results.

Table 7.14: Lagged Explanatory Variables on Logistic Random Effects of Model 2

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	Lagged Explanatory Variables	Hypotheses	Coef.	Std. Err. (SE)	z-score
Incentive	GROWTH (ROA)L1	H1a	- 0.938	0.731	1.28
	GROWTH (Δ Sales)L2	H1a	+ 0.001	0.001	1.09
Pressure	LEVL3	H1b	+ 0.016	0.030	0.55
Opportunity	COMBODsL4	H2a	+ 0.509	0.400	1.28
	ΔHIAL5	H2b	- 1.066**	0.526	2.03
Attitude/ Rationalisation	HFRTsL6	H3a	+ 0.263	0.334	0.79
	ΔACCPOLL7	H3b	- 0.614	0.396	1.55
Capability/ Competence	UNDPOLL8	H4a	- 14.179	3943.66	0.00
	SPVACCL9	H4b	- 3.558***	0.254	14.01

**,*** = Significant at p-value < 0.05 & 0.01 respectively.

Two explanatory variables are negatively significant at the 5% and 1% significant levels (i.e. turnover of HIA and no access to SPVs' financial reports). Although undeclared policies on doubtful debts and accounts receivable has the strongest relationship (coefficient = 14.179) and displays the highest SE, this lagged variable is not significant. In contemporary logistic RE models (Section 7.2.2), four explanatory variables (i.e. composition of BODs, turnover of HIA, historical financial restatements times and changes in accounting policies) were found positively significant.

Specifying lagged values on Model 2 has caused three explanatory variables to be insignificant (i.e. composition of BODs, historical financial restatements times and changes in accounting policies) and two significant explanatory variables with inverse relationships (i.e. turnover of HIA and no access to SPVs' financial reports).

7.5.3 Lagged Variables on Model 3

In Model 3, the lagged variables for GROWTH (ROA)L1, GROWTH (Δ Sales)L2, LEVL3, COMBODsL4, ΔHIAL5, HFRTsL6, ΔACCPOLL7, UNDPOLL8, SPVACCL9, CEODUALL10, POLCEOL11 and CEOPICL12 are chosen to represent seven fraud-risk factors (i.e. incentive, pressure, opportunity, attitude, rationalisation, capability/competence and arrogance) from Crowe's Fraud Pentagon Model. Table 7.15 presents the results.

Table 7.15: Lagged Explanatory Variables on Logistic Random Effects of Model 3

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	Lagged Explanatory Variables	Hypotheses	Coef.	Std. Err. (SE)	z-score
Incentive	GROWTH(ROA)L1	H1a	+0.358	0.740	0.48
	GROWTH (Δ Sales)L2	H1a	+0.001	0.001	0.75
Pressure	LEVL3	H1b	+0.017	0.026	0.64
Opportunity	COMBODsL4	H2a	+0.201	0.371	0.54
	ΔHIAL5	H2b	-0.774	0.523	1.48
Attitude/ Rationalisation	HFRTsL6	H3a	+0.153	0.358	0.43
	ΔACCPOLL7	H3b	-0.380	0.418	0.91
Capability/ Competence	UNDPOLL8	H4a	-21.750	163307.9	0.00
	SPVACCL9	H4b	-2.281***	0.245	9.32
Arrogance	CEODUALL10	H5a	+0.208	0.460	0.45
	POLCEOL11	H5b	-0.273	0.821	0.33
	CEOPICL12	H5c	-0.278***	0.051	5.45

*** = Significant at p-value < 0.01.

Two explanatory variables are negatively significant at the 1% significant level (i.e. no access to SPVs' financial reports and number of CEO's pictures in Malaysian PLCs' annual reports). Similar with Model 2, undeclared policies on doubtful debts and accounts receivable has the strongest relationship (coefficient = 21.750) and the highest SE, but this lagged variable is not significant.

In contemporary logistic RE model, five explanatory variables (i.e. composition of BODs, turnover of HIA, historical financial restatements times, changes in accounting policies and a CEO and/or Chairman of BODs who is also a politician) were found positively significant. Specifying lagged values on Model 2 has caused these explanatory variables to be not significant and two significant explanatory variables with inverse relationships (i.e. no access to SPVs' financial reports and number of CEO's pictures in Malaysian PLCs' annual reports). The number of CEO's pictures in Malaysian PLCs' annual reports shows a consistent inverse significant in both contemporary logistic RE models and lagged models.

7.5.4 Lagged Variables on Model 4

In Model 4, the lagged variables for GROWTH (ROA)L1, GROWTH(Δ Sales)L2, LEVL3, COMBODsL4, ΔHIAL5, HFRTsL6, ΔACCPOLL7, UNDPOLL8, SPVACCL9, CEODUALL10, POLCEOL11, CEOPICL12, INEDUL13, REMDAYsL14, EXREMU(ACTUAL)L15 and EXREMU(RATIO)L16 are chosen to represent nine fraud-risk factors (i.e. incentive, pressure, opportunity, attitude, rationalisation, capability/competence, arrogance, ignorance and greed). Table 7.16 presents the results.

Table 7.16: Lagged Explanatory Variables on Logistic Random Effects of Model 4

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	Lagged Explanatory Variables	Hypotheses	Coef.	Std. Err. (SE)	z-score
Incentive	GROWTH (ROA)L1	H1a	+ 0.148	0.752	0.20
	GROWTH (SALES)L2	H1a	+ 0.000	0.001	0.70
Pressure	LEVL3	H1b	+ 0.015	0.027	0.55
Opportunity	COMBODsL4	H2a	+ 0.154	0.366	0.42
	ΔHIAL5	H2b	- 0.563	0.520	1.08
Attitude/ Rationalisation	HFRTsL6	H3a	+ 0.138	0.362	0.38
	ΔACCPOLL7	H3b	- 0.437	0.423	1.03
Capability/ Competence	UNDPOLL8	H4a	- 23.499	436846.5	0.00
	SPVACCL9	H4b	- 1.977***	0.295	6.70
Arrogance	CEODUALL10	H5a	+ 0.073	0.453	0.16
	POLCEOL11	H5b	- 0.346	0.914	0.38
	CEOPICL12	H5c	- 0.198***	0.052	3.84
Ignorance	INEDUL13	H6a	- 0.651***	0.210	3.11
	REMDAYsL14	H6b	+ 0.008	0.007	1.18
Greed	EXREMU (ACTUAL)L15	H7a	+ 1.65e-09	5.83e-08	0.03
	EXREMU (RATIO)L16	H7a	+ 0.000	0.176	0.00

*** = Significant at p-value < 0.01.

Three explanatory variables are negatively significant at the 1% significant level (i.e. no access to SPVs' financial reports, number of CEO's pictures in Malaysian PLCs' annual reports and insufficient corporate governance courses for Executive and Non-Executive Directors). Similar with Model 2 and Model 3, although undeclared policies on doubtful debts and account receivables has the strongest relationship (coefficient = 23.499) and displays the highest SE, this lagged variable is insignificant.

In logistic RE model, five explanatory variables (i.e. composition of BODs, turnover of HIA, historical financial restatements times, changes in accounting policies and a CEO and/or Chairman of BODs who is also a politician) were found positively significant.

Specifying lagged values on Model 4 has caused these explanatory variables to be insignificant and three significant explanatory variables with inverse relationships with the DV (i.e. no access to SPVs' financial reports, number of CEO's pictures in Malaysian PLCs' annual reports and insufficient corporate governance courses for Executive and Non-Executive Directors).

7.6 Decision between Lagged Fixed-Effects and Lagged-Random Effects Model

Following similar procedures in deciding the appropriate models between logistic FE models and logistic RE models, this research employs the Hausman Test to test the H_0 and H_1. Additionally, since negative test statistic values were generated for Model 1, Model 3 and Model 4, this research also conducts Generalised Suest Tests as recommended by Maddala and Lahiri (1992). Table 7.17 displays these results.

Table 7.17: Summary of Generalised Suest Tests and the Hausman Tests on Lagged Models

Model	Hypotheses	Generalised Suest Tests	the Hausman Tests		Reject or Fail to Reject H_0	Appropriate Lagged Model (RE or FE)
		p-value > z-score; or p-value < z-score	χ^2 value	p-value		
Model 1	H1a to H3b	p-value > z-score	N/A	N/A	Fail to Reject H_0	RE Model
Model 2	H4a to H4b	Not Applicable	16.28	0.001	Reject H_0	FE Model
Model 3	H5a to H5c	p-value > z-score	N/A	N/A	Fail to Reject H_0	RE Model
Model 4	H6a to H7a	p-value > z-score	N/A	N/A	Fail to Reject H_0	RE Model

The summary indicates a mixed result between lagged FE models and lagged RE models. However, generalised Suest Tests, which are applicable to most of the Models (i.e. Model 1, Model 3 and Model 4) have suggested that lagged RE Models are appropriates. In contrast, a single Hausman Test on Model 2 has suggested lagged FE Model to be appropriate.

Although the Hausman Test has suggested that lagged FE model is appropriate for Model 2, this research holds similar theoretical reasoning as described in Section 7.3. Therefore, this research refers to lagged RE models in deciding suitable explanatory variables.

7.7 Joint Tests for Lagged Models

Table 7.18 presents the results of joint tests for Model 1, Model 2, Model 3 and Model 4 using the lagged variables.

Table 7.18: Joint Tests between Model 4, Model 3, Model 2 and Model 1

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	Explanatory Variables	Model 4 Coefficient	Model 3 Coefficient	Model 2 Coefficient	Model 1 Coefficient
Incentive	GROWTH(ROA)L1	+0.148	+0.358	-0.938	-2.262**
	GROWTH (Δ Sales)L2	+0.000	+0.001	+0.001	+0.000
Pressure	LEVL3	+0.015	+0.017	+0.016	+0.007
Opportunity	COMBODsL4	+0.154	+0.201	+0.509	+0.068
	ΔHIAL5	-0.563	-0.774	-1.066**	-1.233**
Attitude/ Rationalisation	HFRTsL6	+0.138	+0.153	+0.263	-0.215
	ΔACCPOLL7	-0.437	-0.380	-0.614	-0.852**
Capability/ Competence	UNDPOLL8	-23.499	-21.750	-14.179	
	SPVACCL9	-1.977***	-2.281***	-3.558***	
Arrogance	CEODUALL10	+0.073	+0.208		
	POLCEOL11	-0.346	-0.273		
	CEOPICL12	-0.198***	-0.278***		
Ignorance	INEDUL13	-0.651***			
	REMDAYsL14	+0.008			
Greed	EXREMU(ACTUAL)L15	+1.65e-09			
	EXREMU(RATIO)L16	+0.000			

,* = Significant at p-value < 0.05 and 0.01 respectively.

None of the lagged variables are significant in all models. Two lagged variables (i.e. no access to SPVs' financial reports and number of CEO's pictures in Malaysian PLCs' annual reports) are significant in Model 3 and Model 4.

One lagged variable (i.e. insufficient corporate governance courses for Executive and Non-Executive Directors) is significant in Model 4. However, the three lagged variables are negatively significant at the 1% significant level. Likewise, turnover of HIA is negatively significant in Model 1 and 2, while no access to SPVs' financial reports is negatively significant in Model 2 and Model 3. Growth (return on assets) and changes in accounting policies are negatively significant in Model 1. Based on these tests, this research makes a tentative conclusion that only the number of CEO's pictures in Malaysian PLCs' annual reports is significantly indicative of the likelihood of FFR among Malaysian PLCs.

7.8   Conclusions

Overall evaluation of specifying lagged explanatory variables in each model are compared with contemporary logistic RE models and summarised in Table 7.19.

Table 7.19: Summary between Contemporary Logistic RE Models and Specifying Lagged Variables

Model	Sub-Hypotheses	Significant Explanatory Variables		Conclusion on Appropriate Models
		Logistic RE Models (Contemporary Variables)	Lagged Models	
Model 1	H1a to H3b	GROWTH (ROA), COMBODs, ΔHIA, HFRTs and ΔACCPOL	GROWTH (ROA)L1, ΔHIAL5 and ΔACCPOLL7	Logistic RE Models
Model 2	H1a to H4b	COMBODs, ΔHIA, HFRTs, ΔACCPOL and SPVACC	ΔHIAL5 and SPVACCL9	Logistic RE Models
Model 3	H1a to H5c	COMBODs, ΔHIA, HFRTs, ACCPOL, SPVACC,CEODUAL, POLCEO and CEOPIC	SPVACCL9 and CEOPICL12	Logistic RE Models
Model 4	H1a to H7a	COMBODs, ΔHIA, HFRTs, ACCPOL, SPVACC,CEODUAL, POLCEO, CEOPIC, INEDU and REMDAYs	SPVACCL9, CEOPICL12 and INEDUL13	Logistic RE Models

It can be summarised that specifying lagged values on explanatory variables has led most explanatory variables that were positively significant in contemporary logistic RE models to be negatively significant or insignificant [i.e. growth (return on assets), composition of BODs, turnover of HIA, historical financial restatements times, changes in accounting policies, CEO duality, a CEO and/or Chairman of BODs who is also a politician, number of CEO's pictures in Malaysian PLCs' annual reports and insufficient corporate governance courses for Executive and Non-Executive Directors]. One possible reasons for these changes is that lagged variables has increased biases results due to omitted variables or measurement error. Specifying lagged values on these variables has changed the original measurement of the observations. Moreover, lagged variables are potentially more responsive to long-term changes in economic conditions or government policies than transitory fluctuations in conditions.

However, it can be inferred that only the number of CEO's pictures in Malaysian PLCs' annual reports is negatively significant at the 1% significant level for both logistic RE models and lagged RE models. Thus, this research concludes that specifying lagged explanatory variables on Model 1, Model 2, Model 3 and Model 4 are not appropriate to predict the likelihood of FFR in the Malaysian context. Consequently, this research concludes that logistic RE models (with contemporary explanatory variables) are appropriate in deciding suitable fraud-risk factors to predict the likelihood of FFR among Malaysian PLCs. Table 7.20 summarises the conclusion for each hypothesis and sub-hypothesis based on the results from Model 4 of logistics RE models. Although, no access to SPVs' financial reports, CEO duality, insufficient corporate governance courses for Executive and Non-Executive Directors and days taken to submit annual financial reports as at financial year-end are also significant, these proxy variables demonstrate negative coefficient values, which suggest inverse causal-effect relationships with the likelihood of FFR.

Table 7.20: Summary of Conclusions for Hypotheses and Sub-Hypotheses of the Research

Hypotheses	Sub-Hypotheses	Empirical Results[41]	Conclusions
H1: Incentive/pressure indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H1a: High growth in Malaysian PLCs indicates a higher tendency towards the likelihood of FFR.	Not Significant [coef = +1.200 (ROA)] [coef = -0.002 (Δ Sales)]	Reject H1a
	H1b: High leverage in Malaysian PLCs indicates a higher tendency towards the likelihood of FFR.	Not Significant (coef = -0.001)	Reject H1b
H2: Opportunity indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H2a: Lower percentage of outside members (Independent Non-Executive Directors) in Board of Directors (BODs) indicates a higher tendency towards the likelihood of FFR.	Significant (coef = +0.812***)[42]	Fail to reject H2a
	H2b: High turnover frequency of Head of Internal Auditor (HIA) indicates a higher tendency towards the likelihood of FFR.	Significant (coef = +2.233***)	Fail to reject H2b
H3: Attitude/rationalisation indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H3a: High historical financial restatements times (HFRTs) indicate a higher tendency towards the likelihood of FFR.	Significant (coef = +1.824***)	Fail to reject H3a
	H3b: Frequent changes in PLCs' accounting policies indicate a higher tendency towards the likelihood of FFR.	Significant (coef = +2.041***)	Fail to reject H3b

[41] Based on the coefficient values (coeff) from Table 7.9 (Model 4 of contemporary logistic RE models) of Chapter 7.
[42] *,**,*** = Significant at p-value < 0.10, 0.05 and 0.01 respectively.

Hypotheses	Sub-Hypotheses	Empirical Results[41]	Conclusions
H4: Capability/competence indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs H4: Capability/competence indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H4a: Undeclared policies on doubtful debts and accounts receivable indicate a higher tendency towards the likelihood of FFR.	Not Significant (coef = +0.885)	Reject H4a
	H4b: No access to Special Purpose Vehicles (SPVs') financial reports indicates a higher tendency towards the likelihood of FFR.	Significant (coef = -4.546***)	Fail to reject H4b
H5: Arrogance indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H5a: Chief Executive Officer (CEO) duality indicates a higher tendency towards the likelihood of FFR.	Significant (coef = -1.376*)	Fail to reject H5a
	H5b: A Chief Executive Officer (CEO) and/or Chairman of BODs in Malaysian PLC who is also a politician indicates a higher tendency towards the likelihood of FFR.	Significant (coef = +1.790**)	Fail to reject H5b
	H5c: Frequent number of Chief Executive Officers (CEOs') pictures in annual reports indicates the more arrogant a CEO is and a higher tendency towards the likelihood of FFR; or lesser number of CEOs' pictures in annual reports indicates a higher tendency for the CEOs to hide their arrogance and FFR activities.	Significant (coef = -0.182***)	Fail to reject H5c (*lesser* number of CEOs' pictures in annual reports indicates higher tendency for the CEOs to hide their arrogance and FFR activities)

Hypotheses	Sub-Hypotheses	Empirical Results[41]	Conclusions
H6: Ignorance indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H6a: Insufficient corporate governance courses for Executive and Non-Executive Directors indicate a higher tendency towards the likelihood of FFR.	Significant (coef = -0.843***)	Fail to reject H6a
	H6b: Delays in submitting annual financial reports as at financial year-end indicate a higher tendency towards the likelihood of FFR.	Significant (coef = -0.013*)	Fail to reject H6b
H7: Greed indicates a higher tendency towards the likelihood of FFR among Malaysian PLCs	H7a: Executive Directors' remunerations indicate a higher tendency towards the likelihood of FFR.	Not Significant [coef = -1.05e-07 (Actual)] [coef = +0.095 (Ratio)]	Reject H7a

Therefore, significant results for these proxy variables are unable to support H4b, H5a, H6a and H6b. However, as explained in Section 7.9 of Chapter 7, this research fails to reject H5c although the number of CEO's pictures in Malaysian PLCs' annual reports is found to be negatively significant. This is because H5c predicts both perspectives of arrogance (either positive or negative significant values).

Based on the above discussions, this research has identified six significant explanatory variables that best fit the Malaysian context in predicting the likelihood of FFR among Malaysian PLCs. These variables are (1) composition of BODs; (2) turnover of HIA; (3) historical financial restatements times; (4) changes in accounting policies; (5) a CEO and/or Chairman of BODs who is also a politician; and (6) number of CEO's pictures in Malaysian PLCs' annual reports are suitable to predict the likelihood of FFR among Malaysian PLCs. Figure 7.4 illustrates these explanatory variables.
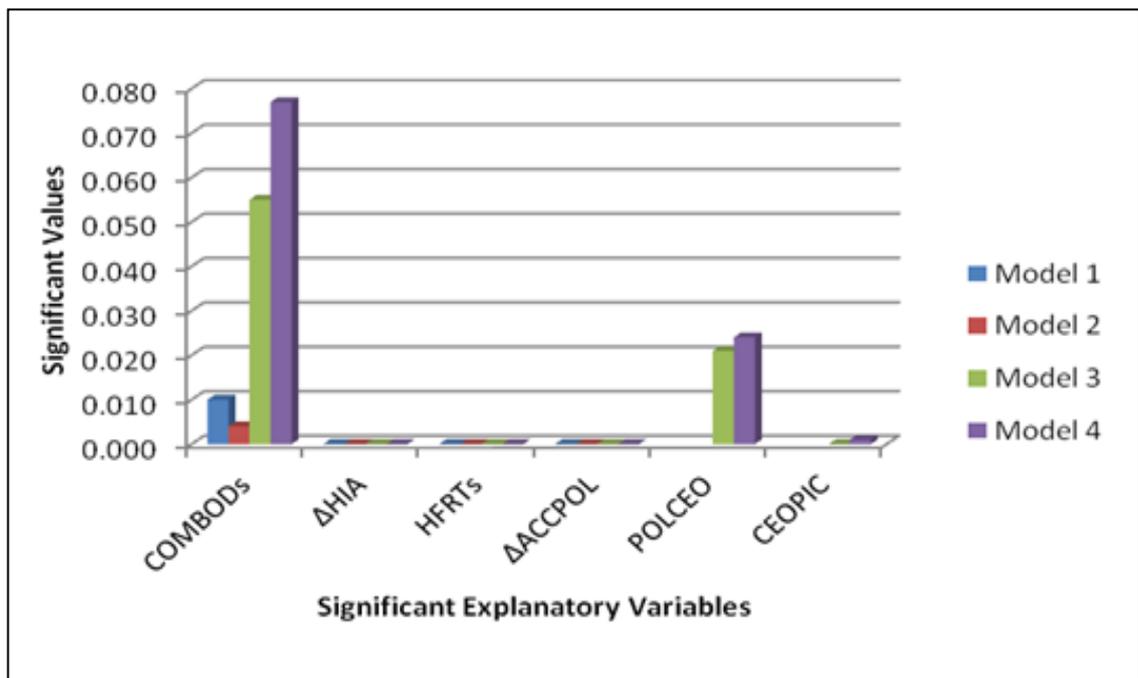
Figure 7.4: Suitable Explanatory Variables for the Research.

Table 7.21 summarises these results.

Table 7.21: Summary of Suitable Explanatory Variables for the Research

Dependent Variable: Fraudulent Financial Reporting (FFR)			
Significant Proxy Variables	**Sub-Hypotheses & Significant Explanatory Variables (the Fraud-Risk Factors)**	**Coefficient Values**	**Significant Values**
Composition of Board of Directors (COMBODs)	H2a (Opportunity) Lower percentage of outside members (Independent Non-Executive Directors) in BODs indicates a higher tendency towards the likelihood of FFR	+0.812	0.077 (10% significant level)
Turnover of Head of Internal Auditor (ΔHIA)	H2b (Opportunity) High turnover frequency of HIA indicates a higher tendency towards the likelihood of FFR	+2.233	0.000 (1% significant level)
Historical Financial Restatement Times (HFRTs)	H3a (Attitude) High HFRTs indicate a higher tendency towards the likelihood of FFR	+1.824	0.000 (1% significant level)
Changes in Accounting Policies (ΔACCPOL)	H3b (Rationalisation) Frequent changes in PLCs' accounting policies indicate a higher tendency towards the likelihood of FFR	+2.041	0.000 (1% significant level)
CEO and/or Chairman of BODs who is also a politician (POLCEO)	H5b (Arrogance) A CEO and/or Chairman of BODs in a Malaysian PLC who is also a politician indicates a higher tendency towards the likelihood of FFR	+1.790	0.024 (5% significant level)
Number of CEOs' pictures in annual reports (CEOPIC)	H5c (Arrogance) Lesser number of CEOs' pictures in annual reports indicates a higher tendency for the CEOs to hide their arrogance and FFR activities.	-0.182	0.001 (1% significant level)

Based on Table 7.21, the causal-effect relationships between suitable explanatory variables and the DV is written in as follows[43]:

$$FFR_{it} = \beta_0 + 2.233\ (\Delta HIA_{it}) + 2.041\ (\Delta ACCPOL_{it}) + 1.824\ (HFRTs_{it}) + 1.790(POLCEO_{it}) + 0.812\ (COMBODs_{it}) - 0.182(CEOPIC_{it}) + \mathcal{E}_t$$

These empirical results suggest the development of a new conceptual model (CM), which indicates three explanatory variables from the Fraud Triangle Model (i.e. opportunity, attitude and rationalisation) and one explanatory variable from Crowe's Fraud Pentagon Model (i.e. arrogance) as significantly indicative of the likelihood of FFR among Malaysian PLCs. Figure 7.5 illustrates the new CM, which is regarded as 'the Fraud Diamond 2' Model.
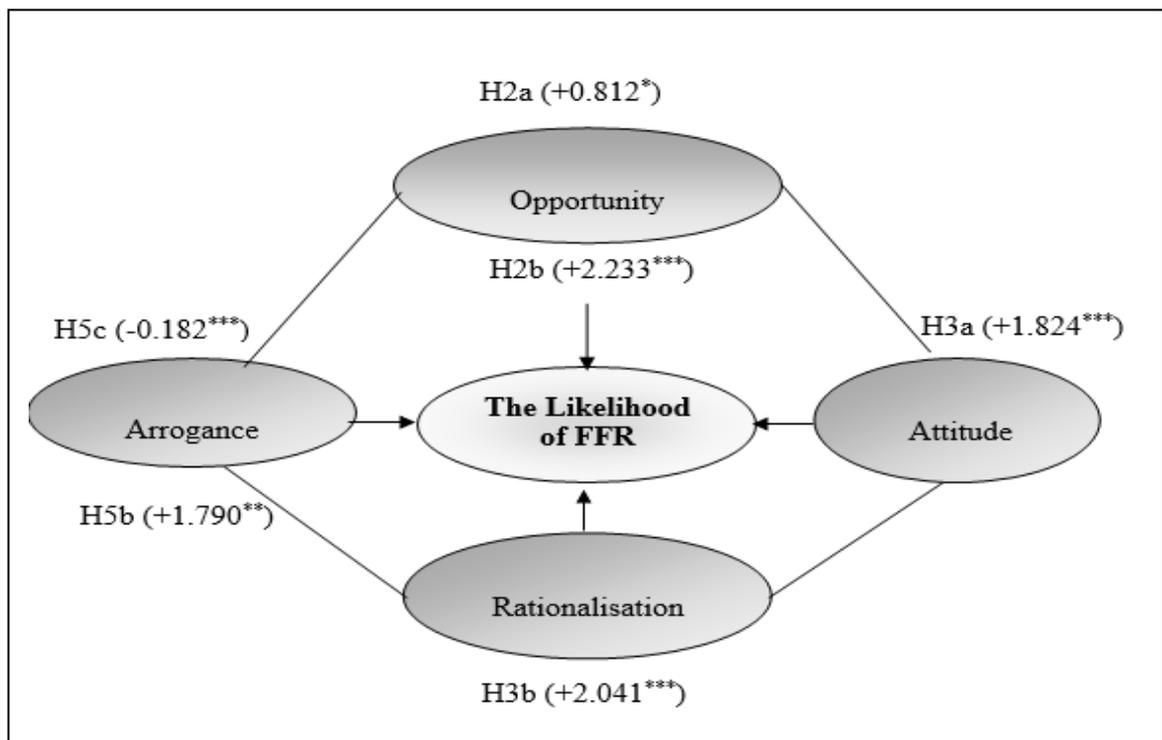
Figure 7.5: Appropriate Conceptual Model for the Research.
*,**,*** = Significant at p-value < 0.10, 0.05 and 0.01 respectively.

In short, this chapter has demonstrated a systematic statistical procedure to provide an adequate representation in deciding suitable determinants of the likelihood of FFR among Malaysian PLCs.

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[43] The sequence is based on the highest coefficient values.

CHAPTER 8: CONCLUSIONS

This research begins with the aim of finding suitable fraud-risk factors that can predict the likelihood of fraudulent financial reporting (FFR) among Malaysian Public-Listed Companies (PLCs). In this chapter, the empirical results from descriptive statistics and binomial logistic regression analyses will be summarised and concluded. This chapter begins with a summary of significant results of the research. Following this, theoretical and practical contributions are discussed. Subsequently, implications of the research, particularly in the Malaysian context are explained. This chapter also discusses several limitations of the research, followed by plausible recommendations for practice and future research studies. This chapter is concluded with some concluding remarks with overall summary of the research. Figure 8.1 illustrates organisation of the chapter.
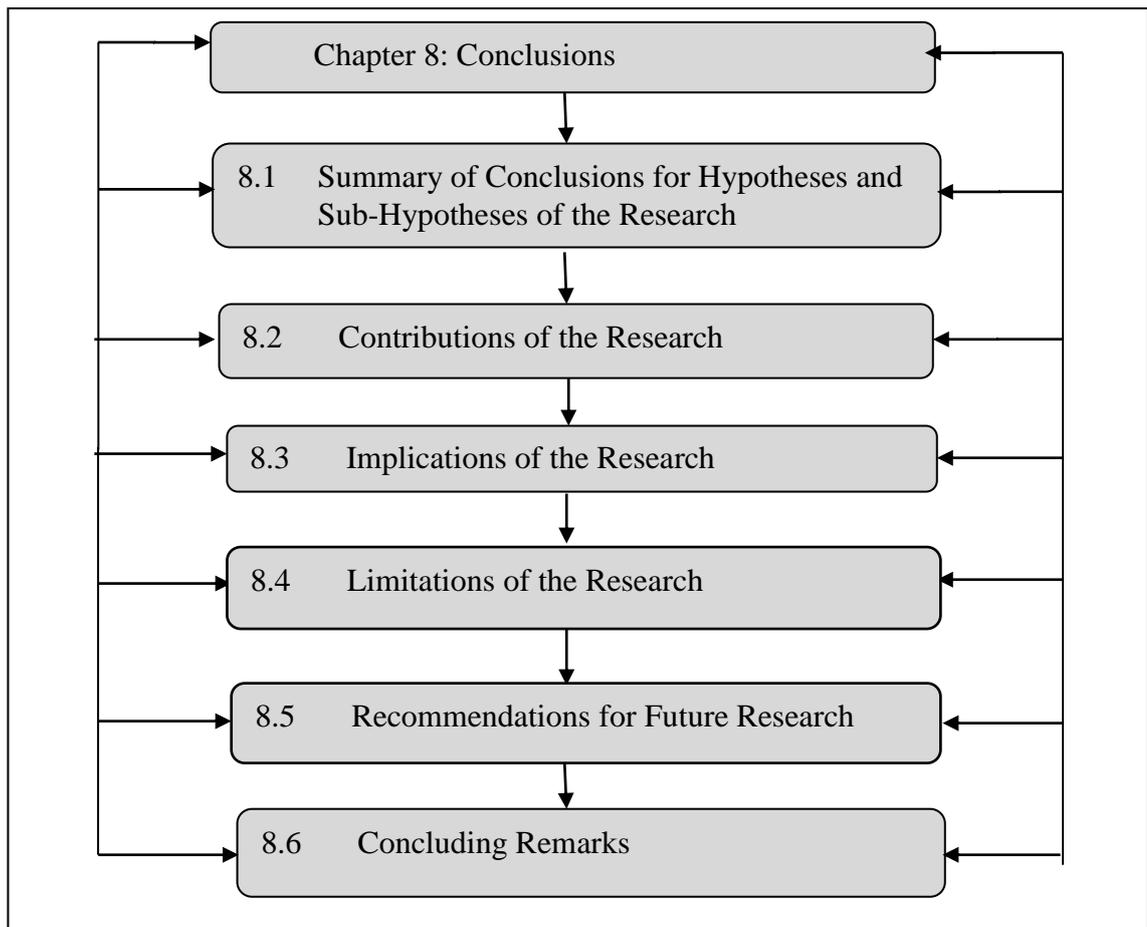
Figure 8.1: Structure of Chapter 8.

8.1 Summary of Conclusions for Hypotheses and Sub-Hypotheses of the Research

Based on five research questions (RQs) and seven sub-research questions (SRQs), this research has developed seven hypotheses and fourteen sub-hypotheses from relevant literature and the interviews.[44] These hypotheses and sub-hypotheses were statistically analysed and tested using quantitative analyses (Chapter 6 and 7). The empirical results have a pivotal role in identifying suitable fraud-risk factors to predict the likelihood of FFR among Malaysian PLCs. In general, the process of this research reflects theoretical reasoning and empirical results with the Malaysian situation. Figure 8.2 illustrates this process based on Kolb's Experiential Learning Cycle (Kolb, 1984).
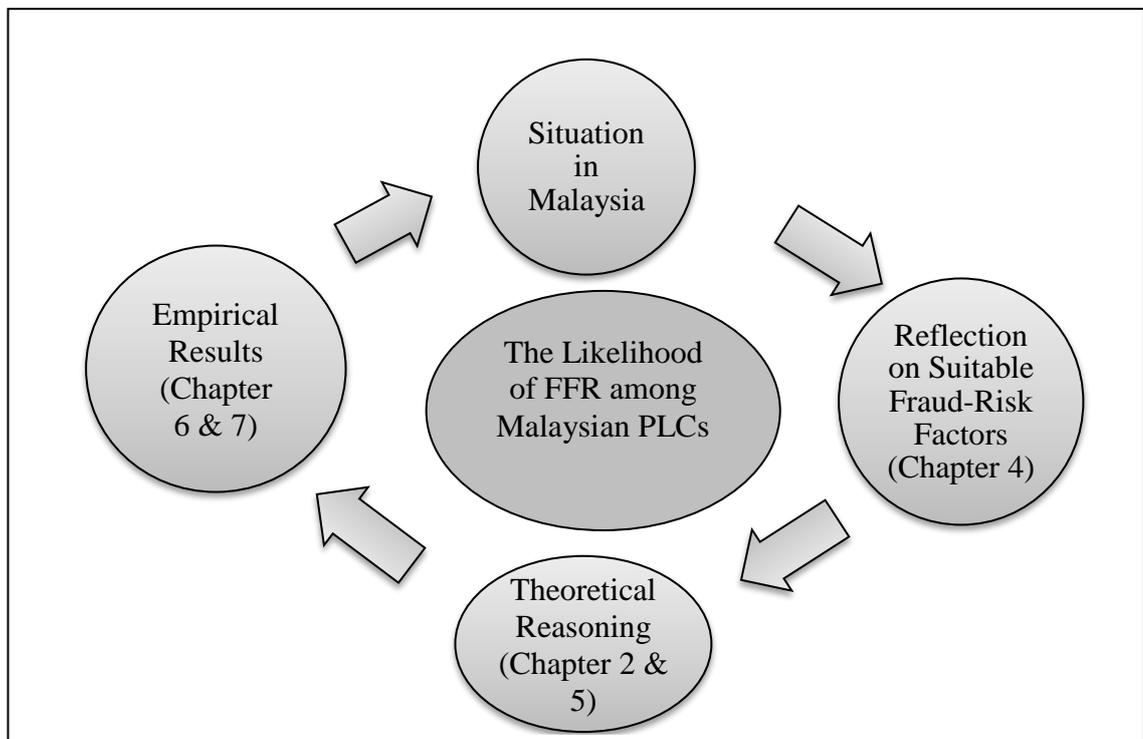
Figure 8.2: Reflection on Empirical Results in the Research.
Source: Adopted from Kolb, 1984.

Table 8.1 summarises the significant results for the research.

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[44] In Chapter 4, the interviews have explored relevant fraud-risk factors in the Malaysian context.

Table 8.1: Summary of Significant Results of the Research

Research Questions (RQs)	Sub-Research Questions (SRQs)	Answers
RQ1: To what extend do the fraud-risk factors from the Fraud Triangle Model (Cressey, 1953) adequate to predict the likelihood of FFR among Malaysian Public-Listed Companies (PLCs)?	SRQ2: To what extend does opportunity adequate to predict the likelihood of FFR among Malaysian PLCs?	Fraud-risk factors mentioned in SRQ2, SRQ3 and SRQ5 are not only adequate to predict the likelihood of FFR in the Malaysian context, but potentially feasible in other countries with similar corporate governance culture, such as Asian countries.
	SRQ3: To what extend does attitude / rationalisation adequate to predict the likelihood of FFR among Malaysian PLCs?	
RQ3: To what extend do the fraud-risk factors from Crowe's Fraud Pentagon Model (Crowe, 2011) adequate to predict the likelihood of FFR among Malaysian PLCs?	SRQ5: To what extend does arrogance adequate to predict the likelihood of FFR among Malaysian PLCs?	
RQ5: Which of these fraud-risk factors are best fit the Malaysian context in predicting the likelihood of FFR among Malaysian PLCs?		**(1) Opportunity;** **(2) Attitude;** **(3) Rationalisation;** **(4) Arrogance**

As discussed in Chapter 1 (Section 1.3), the ultimate objective of this research is nested in RQ5. Based on empirical results, this research concludes that (1) opportunity (represented by composition of Board of Directors and turnover of HIA); (2) attitude (represented by historical financial restatement times); (3) rationalisation (represented by changes in accounting policies); and (4) arrogance (represented by a CEO and/or Chairman of BODs who is also a politician and number of CEO's pictures in Malaysian PLCs' annual reports) are the suitable fraud-risk factors that best fit the Malaysian context. These factors (i.e. opportunity, attitude, rationalisation and arrogance) can be merged into a new fraud model, which is referred to as 'the Fraud Diamond 2' Model[45] as illustrated in Figure 8.3.

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[45] Since Dorminey *et al.* (2012) have suggested a 'New Fraud Diamond' Model as discussed in Chapter 2 (Section 2.1.5.4.4), this new model is referred to as 'the Fraud Diamond 2'.
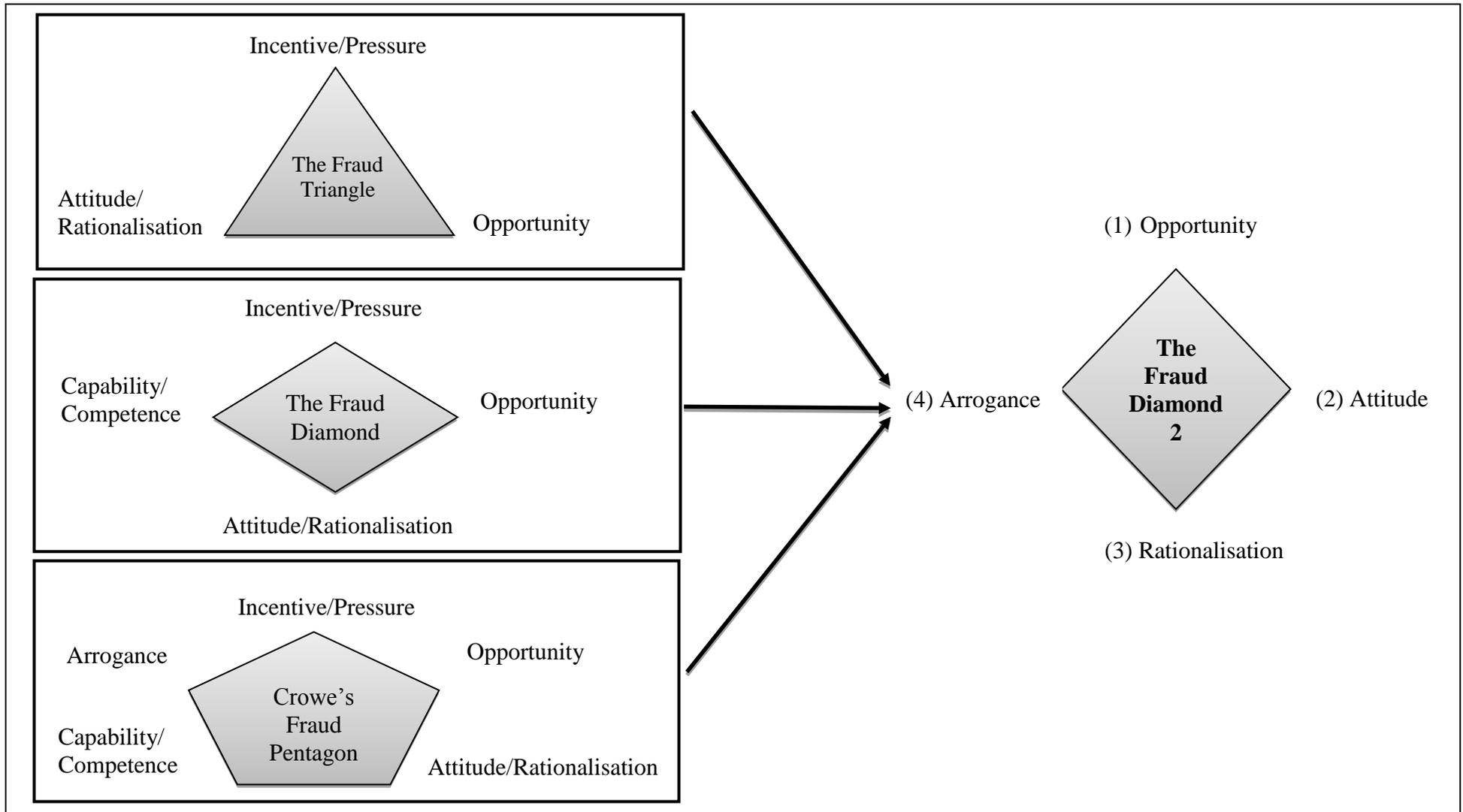
Figure 8.3: The Emergence of 'the Fraud Diamond 2' based on the Suitable Fraud-Risk Factors in the Malaysian Context.

8.2   Contributions of the Research

Significant result on the composition of Board of Directors (BODs) has shown that little knowledge exists on the process of BODs' appointments. This is a major amnesias as BODs' relationships and/or preference will eventually affect the nature of BODs' decisions. Theoretically, most Malaysian PLCs are capable of fulfilling the minimum requirement of 1/3 of outside directors on their COMBODs. However, it is beyond the power of Bursa Malaysia and Securities Commission Malaysia (SC) to scrutinise the 'actual reasons' for their appointment and 'relationships' of the outside directors with Executive Directors. As such, BODs' independency, especially the ouside directors is questionable.

Likewise, significant result on the turnover of Head of Internal Auditor (HIA) supports the argument that most fraudulent PLCs in Malaysia tend to change their HIA before committing FFR. The result suggests that the HIA's agency problem could not be resolved with the existing rules and regulations mandated by Bursa Malaysia and SC. Similar concern has been raised by several researchers (see Cotton, 2002; Kopel, 2003a; Cullinan, 2004; McMillan, 2004; Nixon, 2004; Hudaib & Cooke, 2005; Rezaee, 2005; Zaman *et al.*, 2011; Alleyne *et al.*, 2013). The result indicates that HIA independency is one of the serious issues in Malaysia.

Meanwhile, significant result on historical financial restatement times suggests that manipulation of material transactions among Malaysian PLCs will continuously occur in the coming years. Additionally, unusual or inappropriate transactions such as extreme values (i.e. negative leverage) could be one of the favaorable areas for manipulation.

Significant results on a CEO and/or Chairman of BODs who is also a politician and number of CEO's pictures in Malaysian PLCs' annual reports have suggested a new perspective for theoretical research studies on the Fraud Models, particularly with regards to Crowe's Fraud Pentagon Model. These results have widened theoretical perspectives in considering new contributions of fraud-risk factors to predict the likelihood of FFR. Likewise, the negative significant result of insufficient corporate governance courses for Executive and Non-Executive Directors indicates that unethical Executive and Non-Executive Directors could commit FFR, although they had attended numerous corporate governance courses.

Collectively, the significant results on composition of BODs, a CEO and/or Chairman of BODs who is also a politician and number of CEO's pictures in Malaysian PLCs' annual reports suggest a serious interference of politicians in Malaysian PLCs. The involvement of politicians (i.e. as the CEOs and/or chairmen of BODs) in Malaysian PLCs has resulted in conflict of interest between professionalism and political needs, which may eventually lead to FFR. The results support the research's claim that top-down administrative systems of autocratic management styles and political-driven practices in corporate governance cultures are the main contributors for the involvement of politicians in Malaysian PLCs. Furthermore, these proxy variables are associated with two dominant characters in Malaysian PLCs, which are Independent Non-Executive Directors[46] and the Chief Executive Directors (CEOs).

Consequently, significant results on a CEO and/or Chairman of BODs who is also a politician and number of CEO's pictures in Malaysian PLCs' annual reports suggest that arrogance as one of the suitable fraud-risk factors in the Malaysian context.

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[46] Most of Independent Non-Executive Directors in Malaysian Government-Linked Companies (GLCs) and State-Owned PLCs are politicians.

The result is consistent with Crowe (2011, 2012a, 2012b) who considered current changes in business environment as an important factor that cultivate arrogance among the CEOs. The result seems to be relevant in the Malaysian context, since the country practises a centralised-administration system that adopts a clear separation in control and power, including between the CEOs and the rest of the Executive Directors in Malaysian PLCs.

Meanwhile, empirical results on growth (return on assets), leverage and CEO duality, which were found to be insignificant initiate the possibility that obvious proxy variables may not be relevant in the current business environment. Giving the rapid changes in the business environment between 1950's and 2000's as described by Crowe (2011, 2012a, 2012b), empirical results from this research imply that potential fraudsters are becoming more creative in finding new ways to commit FFR. As a result, potential fraudsters would not manipulate these proxy variables if they have intention to commit FFR.

Ultimately, the Fraud Diamond 2 Model suggests that not all fraud-risk factors from the Fraud Triangle Model (i.e. incentive and pressure) and the Fraud Diamond Model (i.e. capability/competence) are suitable to predict the likelihood of FFR among Malaysian PLCs. This model eliminates three fraud-risk factors (i.e. incentive, pressure and capability/competence) and accepts four fraud-risk factors (i.e. opportunity, attitude, rationalisation and arrogance). Thus, the emergence of the Fraud Diamond 2 Model reflects the changes in current business environment and the different corporate governance culture as found in Malaysia.

8.3   Implications of the Research

The Malaysian Government should look into the implications of current corporate governance's culture to control the involvement of politicians in Malaysian PLCs. It is possible for the Malaysian Government to tolerate the positive sides of Asian corporate governance culture with appropriate management practices towards a vibrant and 'politician-free' working environment. To do this, the Malaysian Government (particularly the Ministry of Finance Incorporated and Federal/State Governments) should revisit the involvement of politicians in Malaysian GLCs and State-Owned PLCs. As the highest executive authority, it is essential for the Malaysian Government to convey a clear message that FFR will not be tolerated, even with the politicians.

Malaysian Institute of Accountant (MIA) and **Malaysian Accounting Standards Board (MASB)** need to conduct further research in considering arrogance as a potential fraud-risk factor in the Malaysian context. Chapter 1 has highlighted that the fraud-risk factors from the Fraud Triangle Model (Cressey, 1953) were recognised in the Statement of Auditing Standards (SAS) 99 and International Standards on Auditing (ISA) 240. Following ISA 240, the application of the standard has been approved by the Malaysian Institute of Accountants (MIA) in July 2005. Since then, the fraud-risk factors from the Fraud Triangle Model have been consistently referred to as the key indicators for fraud and FFR-detection mechanisms. Based on the significant results on a CEO and/or Chairman of BODs who is also a politician and number of CEO's pictures in Malaysian PLCs' annual reports, it is timely to consider these proxy variables into the standards.

Bursa Malaysia and **Securities Commission Malaysia (SC)** should revisit 'Listing Requirements' and related acts or regulations with regard to outside directors' independence (i.e. Independent Non-Executive Directors). In specific, both regulators should review the 1/3 minimum requirement of outside directors in the BODs. This includes the 'real' relationships between the outside directors and the members of BODs in defining 'independence in fact' and 'independence in appearance' (Olazabal & Almer, 2001). At the same time, Bursa Malaysia should increase the basic requirements for the outside directors to attend corporate governance courses in order to minimise outside directors' dependency on PLCs' top management in making major decisions. In this relation, Bursa Malaysia could develop a new syllabus or promote an effective whistle-blower programme.

Similarly, both regulators have to think of new requirements that specifically addresses HIAs' independence, particularly from their employers (i.e. Malaysian PLCs). As discussed in Chapter 5 (Section 5.1.2.2), issues on removal or resignation of internal auditors (including the HIAs) are not mentioned in Listing Requirements, as compared to external auditors. Bursa Malaysia needs to impose a new requirement that allows HIAs to perform their duties more independently and effectively. One of the possible requirements is by refining the role of the Audit Committee in Malaysian PLCs. Audit Committee needs to supervise the performance of HIA and provide reasonable recommendations on the HIA's employment to the BODs. The performance of HIA can be measured by the quality of audit report based on the respective code of ethics (i.e. integrity, objectivity, confidentiality and competency). More importantly, Audit Committee must ensure that there is no interference with the HIA's independence.

In relation to changes in accounting policies, Bursa Malaysia and SC could impose an additional requirement in introducing a minimum period for Malaysian PLCs to change their accounting policies (i.e. between three and five years).[47] If there is a need for the Malaysian PLCs to change the accounting policies before the minimum period, a valid justification should be provided.

Finally, Bursa Malaysia and SC could impose a new regulation for Malaysian PLCs to prepare a risk scorecard (RSC) based on the fraud-risk factors from the Fraud Diamond 2 Model. Each risk factor could be assigned to a respective risk owner (i.e. head of divisions or managers) who will evaluate the likelihood or possibility of FFR. The evaluation score can be between '1' to '5' (very low risk to very high risk). Based on this scorecard, appropriate actions can be undertaken to reduce the risk. The RSC could be included as one of the BODs' meeting agendas and presented by the member of the Audit Committee. Table 8.2 provides an example of the scorecard report.

Table 8.2: An Example of the RSC's Report

No.	Risk Factor	Reference	Risk Owner	Possibility	Impact	Score
1.	Extreme sales GROWTH	XYZ-002	Sales Manager	High	Significant	4

Banks and Financial Institutions should pay an extra attention on material transactions in financial reports that are normally used for the application of bank loans. This attention is mostly applied to Malaysian PLCs that were mandated for financial restatements by Bursa Malaysia, or tend to change their accounting policies frequently. A recent case of 1Malaysia Development Berhad (1MDB) has shown that the State-Owned PLC's business model is heavily dependent on debt, mainly from bank loans and bonds, part of which are guaranteed by the government (The News Straits Times, 2016).

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[47] As discussed in Section 4.6.1 of Chapter 4, most of the interviewees thought that any changes on accounting policies are reasonable if the changes happen between three and five years.

As a result, the Public Accounts Committee (PAC) concluded that 1MDB's financial performance as "unsatisfactory", since the fund's debts ballooned from RM 5 billion (USD 1.28 billion) in 2009 to RM 50 billion (USD 12.79 billion) in January 2016 (The Guardian, 2016). Thus, this research believes that it is possible for fraudulent PLCs to manipulate material transactions in financial reports (i.e. cash flows, net profits, return on investments and asset values) to increase the possibility of getting large loans from bank and financial institutions. Likewise, fraudulent PLCs may hide or amend the actual amount of cash in hand and/or cash in bank with those disclosed in financial reports.

External Auditors should be more vigilant and attentive in auditing Malaysian PLCs' financial reports. External auditors are advised to increase their focus on BODs' activities, including the nature of issues discussed and information presented to the BODs. External auditors should look for unusual material transactions, particularly with regard to historical financial restatements and changes in accounting policies. In conducting an effective audit, external auditors should perform thorough investigations on financial and non-financial information, although this information have been approved by the Audit Committee. As proposed by Arthaud-Day *et al*. (2006), historical financial restatements are more likely to be related to incompetence of the CEOs, BODs and auditors.

Internal Auditors should also concentrate on unusual material transactions. As the PLCs' employees, internal auditors should be able to detect any unusual material transactions based on their knowledge of the PLCs' business activities. Additionally, internal auditors could also concentrate on extreme values reported in financial reports, such as negative leverage or rapid growth. Finally, internal auditors should report potential fraud-risk factors based on the audit results to the Audit Committee.

The Audit Committee is expected to conduct thorough investigations on the potential risk factors. In return, the Audit Committee's members should be given reasonable fees. According to Zaman *et al.* (2011), the effectiveness of Audit Committee has a positive significant effect on audit fees after controlling for BODs characteristics. In other words, the fees for Audit Committee should be increased in ensuring higher audit quality (Zaman *et al.*, 2011). If further investigation is needed (i.e. potential risk factors suggest the involvement of the BODs), the involvement of Malaysian Anti-Corruption Commission (MACC) would be more effective.

Forensic accountants should increase the quality of intelligence resources in combating FFR. A systematic technique is needed to study the pattern and probability of relevant proxy variables that are related to the new fraud-risk factors, such as arrogance. In this relation, forensic accountants can advise Malaysian PLCs to deploy modern data analytic tools, such as FICO Falcon Fraud Manager to detect and monitor the red-flags of FFR. These tools could increase the quality of data mining techniques, time-series analyses and matching algorithms to detect anomalies that may lead to FFR. This is because a resourceful database could be a powerful 'weapon' in combating FFR. Furthermore, the occurrence of FFR is initiated in fraudsters' thought and behaviour. Therefore, FFR-detection mechanisms are strengthen by intelligence-intensive activities based on the combination of human behaviour and material actions. In this relation, forensic accountants who specialise in forensic analytic procedures are seen to be the right profession to increase the ability of predicting the likelihood of FFR. One of the potential areas is 'arrogance' as suggested by the Fraud Diamond 2 Model.

8.4   Limitations of the Research

The results of this research are restricted to a number of limitations. Firstly, this research has acquired statistics of fraudulent observations pertaining to FFR cases that were officially reported by Bursa Malaysia and SC. It is believed that there are other similar FFR cases that might not have been discovered and reported between 2004 and 2013. This situation is in line with a claim made by Spollen (1997) who claimed that there is no way of knowing how many frauds have been committed all over the world, since many go unreported.

Secondly, in order to collect an accurate data sampling based on definition of FFR within the context of this research, three categories of FFR have been specified. These categories are (1) false statements or information; (2) misleading statements; and (3) combination of false statements /information and misleading statements. As a result, this research has identified 45 fraudulent Malaysian PLCs from these categories between 2004 and 2013. If this research defines FFR in a different context[48], the sample size could be larger. Additionally, this research has excluded Malaysian PLCs that belong to finance-based category as these PLCs adopt different accounting policies and financial reporting requirements.

Thirdly, the empirical results derived from binomial logistic regression analysis might have been shared and discussed with similar interviewees to get their feedbacks and observe if the results resonate with the Malaysian context. This research could conduct another interview session to gain interviewees' perspectives.

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[48] This research predicts the likelihood of FFR from two perspectives, which are (1) individual perspective (Executive & Non-Executive Directors in Malaysian PLCs); and (2) organisational perspective (top management in Malaysian PLCs).

Finally, this research could not identify measurable proxy variables for 'determination'. Chapter 4 (Section 4.9.4) has regarded 'determination' as one of the Malaysian specific results based on interviewees' perspectives. At the time of this research was conducted, it was not possible to discover suitable proxy variables for determination, which can be easily measured. Thus, this research suggests that suitable proxy variables for determination should be further researched. The next section suggests recommendations for future research.

8.5 Recommendations for Future Research

Notwithstanding these limitations, this research does suggest relevant recommendations for future research. There are several recommendations derived from this research. Firstly, some hypotheses and sub-hypotheses could be set up in different ways to explore different possibilities from the fraud-risk factors. For example, Sub-Hypotheses 1a and 1b could predict that "low growth in Malaysian PLCs indicates higher tendency towards the likelihood of FFR", or "low leverage in Malaysian PLCs indicates higher tendency towards the likelihood of FFR".

Secondly, specific research in examining extreme values (i.e. negative LEV and rapid GROWTH) from Malaysian PLCs' financial reports can be conducted. This research could suggest other proxy variables related to the fraud-risk factors in predicting the likelihood of FFR. Thirdly, as mentioned in the research's limitations, empirical results from BLR analysis or other quantitative analyses could be reconfirmed by interview results to gain interviewees' perspectives. Based on these perspectives, a connection between measurable and unmeasurable fraud-risk factors could be established.

Fourthly, future research can measure the fraud-risk factors from different perspectives. For example, this research measures incentive and pressure from organisational perspectives. Thus, future research could measure these fraud-risk factors from individual's perspectives. This research believes that empirical results would be different by exchanging these two perspectives (i.e. individual and organisational perspectives). Another future research could be conducted to specifically explore the functions of RSC with regards to the fraud-risk factors. Based on the application of the balanced scorecard (BSC)[49], results on RSC would provide meaningful contributions for a systematic FFR-detection mechanism.

Similarly, more research is needed to provide better understanding on issues related to ΔHIA. Concentration should be directed to HIAs' 'independence in appearance' and 'independence in fact' based on social interactions at micro level, meso level and macro level. Hudaib and Haniffa (2009: 221) view "micro level as 'personal self-reflexivity through ethical reasoning and reputation of individual auditor', meso level as 'organisational culture through range of commercial activities and image management' and macro level as 'political, *de jure*[50], and socio-economic structure' respectively".

Finally, interpretive/critical research could be undertaken to explore physiological aspects of fraudsters' tendency to hide their FFR activities. One of the potential areas is related to internal and external auditors' perceptions on how different composition of Independent Non-Executive Directors (in percentage) influence major decisions of the BODs in Malaysian PLCs. The element of 'independence in fact' and 'independence in appearance' among Independent Non-Executive Directors would be an interesting dimension for interpretive/critical research.

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[49] The BSC is one of the performance measurement tools used by various business entities in relation to strategic planning and management system.

[50] '*De jure*' is a classical Latin term, which means 'of right, by right, according to law'.

Additionally, in-depth interviews with internal and external auditors can be conducted to discover their perspectives on political pressure among Malaysian PLCs.

8.6   Concluding Remarks

FFR-detection mechanisms continue to be one of the key aspects in reducing or preventing FFR cases in Malaysia. The ability to predict the likelihood of FFR among Malaysian PLCs could bring significant benefits to the Malaysian government and related parties, such as Bursa Malaysia, SC, accounting and auditing regulatory bodies and Malaysian PLCs. This is because the fallout from FFR can be devastating, including punitive damages, tarnished corporate reputations, lost revenues, plummeting shareholders' values and inability to attract and retain human capital (KPMG, 2014).

Ultimately, this research has found that different corporate governance cultures between Asian and the western countries have resulted in different fraud-risk factors to predict the likelihood of FFR. Therefore, the Fraud Diamond 2 Model provides four suitable fraud-risk factors in predicting the likelihood of FFR in the Malaysian context. This model suggests opportunity, attitude, rationalisation and arrogance as the significant fraud-risk factors in predicting the likelihood of FFR among Malaysian PLCs. These fraud-risk factors should be given more consideration for future research based on the possibilities that the Fraud Diamond 2 Model is not only suitable in Malaysia, but could be suitable in other Asian countries with similar corporate governance cultures. Figure 8.4 illustrates the Fraud Diamond 2 Model.
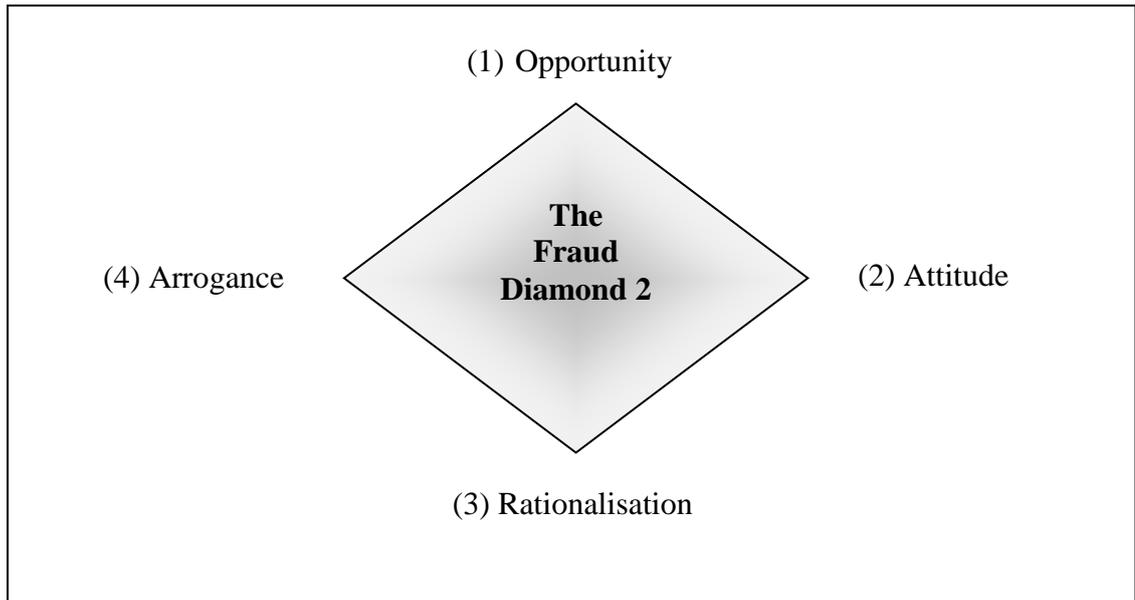
Figure 8.4: The Fraud Diamond 2 Model.

In summary, this research has produced a new fraud model to identify suitable fraud-risk factors in predicting the likelihood of FFR among Malaysian PLCs. This new fraud model also reflects suitable fraud-risk factors in a different corporate governance culture with current business environment. Therefore, the empirical results from this research can be applied not only in Malaysia, but also in other countries that practise similar corporate governance culture such as Indonesia, Brunei and Thailand. Finally, utilising a mixed-method design, this research has found that the combination between qualitative and quantitative methods have resulted in plausible empirical results and conclusions as summarised in Figure 8.5.

RO1: To examine the suitability of the fraud-risk factors from the Fraud Models in predicting the likelihood of FFR among Malaysian PLCs.

RQ1: To what extend do the fraud-risk factors from the Fraud Triangle Model (Cressey, 1953) adequate to predict the likelihood of FFR among Malaysian PLCs? **(H1 to H3)**

RQ2: To what extend do the fraud-risk factors from the Fraud Diamond Model (Wolfe & Hermanson, 2004) adequate to predict the likelihood of FFR among Malaysian PLCs? **(H4)**

RQ3: To what extend do the fraud-risk factors from Crowe's Fraud Pentagon Model (Crowe, 2011) adequate to predict the likelihood of FFR among Malaysian PLCs? **(H5)**

RO2: To examine the suitability of additional fraud-risk factors in predicting the likelihood of FFR among Malaysian PLCs.

RQ4: To what extend do the additional fraud-risk factors adequate to predict the likelihood of FFR among Malaysian PLCs? **(H6 & H7)**

RO3: To identify the suitable fraud-risk factors that best fit the Malaysian context in predicting the likelihood of FFR among Malaysian PLCs.

RQ5: Which of these fraud-risk factors are best fit the Malaysian context in predicting the likelihood of FFR among Malaysian PLCs?

The link between Fraud-Risk Factors in the Fraud Models, Methods and Results

Fraud-Risk Factors:	**Methods:**	**Results (RQ5):**
Incentive, pressure, opportunity, attitude & rationalisation **(RQ1)** Capability/competence **(RQ2)** Arrogance **(RQ3)** Ignorance & greed **(RQ4)**	A mixed-method design (i.e. combination of deductive and inductive approach) Explainable & measurable techniques and procedures (i.e. combination of interviews and quantitative analyses – descriptive statistics & BLR analysis)	Opportunity (COMBODs & ΔHIA), attitude (HFRTs), rationalisation (ΔACCPOL) & arrogance (POLCEO & CEOPIC) A new fraud model (**The Fraud Diamond 2**)

Main implications, Contributions & Conclusion

Theoretical: A new perspective of the Fraud Models (i.e. discovery of relevant fraud-risk factors in current business environment & different corporate governance culture, i.e. Malaysia).

Practical: Additional considerations in FFR-detection mechanisms (i.e. revise politicians' involvement, arrogance as a potential fraud-risk factor, concentration on extreme values, deploy modern data analytic tools) for the Government, regulators (i.e. Bursa Malaysia & SC), forensic accountants & auditors.

The Fraud Diamond 2 Model: Relevant fraud-risk factors in the Malaysian context and interplay between current business environment & Asian corporate governance culture.

Figure 8.5: Overall Summary of the Research.

REFERENCES

Abbot, J. L., Park, Y. & Parker, S. (2000) The Effects of Audit Committee Activity and Independence on Corporate Fraud. *Managerial Finance,* 26(11), 55-67.

Abdel-khalik, A. R. & Ajinkya, B. B. (1979) Empirical Research in Accounting: A Methodological Viewpoint. *American Accounting Association*, 1(1), 114-122.

Abdolmohammadi, M. I. & McQuade, R. J. (2002) *Applied Research in Financial Reporting: Text and Cases,* 2nd edition. McGraw-Hill Irwin.

Abdullah, S. N. (2004) Board Composition, CEO Duality and Performance among Malaysian Listed Companies. *Corporate Governance,* 4(4), 47-61.

Abdullah, S. N., Mohamad-Yusof, N. Z. & Mohamad-Nor, M. N. (2010) Financial Restatement and Corporate Governance among Malaysian Listed Companies. *Managerial Auditing Journal*, 25(6), 526–552.

Abdul-Rahman, R. & Mohamed-Ali, F. H. (2006) Board, Audit Committee, Culture and Earnings Management: Malaysian Evidence. *Managerial Auditing Journal,* 21(7), 783-804.

Abernethy, M A, Chua, W F, Luckett, P. P. & Selto, F.H. (1999) Research in Managerial Accounting: Learning From Others' Experiences. *Accounting and Finance*, 39(1), 1-27.

Accounting Principles Board (1998) The Auditors' Association with Preliminary Announcements, *Bulletin 1998/7*, 16-17.

Aghghaleh, S. F., Iskandar, T. M. & Mohamed, Z. M. (2014) Fraud Risk Factors of Fraud Triangle and the Likelihood of Fraud Occurrence: Evidence from Malaysia. *Information Management & Business Review,* 6(1), 1-7.

Agresti, A., & Finlay, B. (1997) Introduction to Mmultivariate Relationships. *Statistical Methods for the Social Sciences*, 3(1), 356-372.

Agresti, A., & Finlay, B. (2009) *Statistical Methods for the Social Sciences*, 4th edition. Pearson: Prentice Hall.

Ahmad Khair, A.H. (2012) *Locating Fraudulent Accounting Practices in Malaysia: A Foucauldian Perspective*. Unpublished Thesis. University of Essex.

Ahmad Khair, A.H & Hudaib, M. (2012) Steel Accounting: The Genealogy of Fraud in State-owned Business. *Unpublished Articles*.

Ahmad Khair, A. H., Haniffa, R., Hudaib, M. & Karim, M. N. A. (2015) Personalisation of Power, Neoliberalism and the Production of Corruption. *Accounting Forum*, 39(3), 225-235.

Aier, J. K., Comprix, J., Gunlock, M. T. & Lee, D. (2005) The Financial Expertise of CFOs and Accounting Restatements. *Accounting Horizons,* 19(3), 123-135.

Albrecht, C., Turnbull, C., Zhang, Y. & Skousen, C. J. (2010) The Relationship between South Korean Chaebols and Fraud. *Management Research Review,* 33(3), 257-268.

Albrecht, S., Howe, K. & Romney, M. (1984) Deterring Fraud: The Internal Auditor's Perspective. *Institute of Internal Auditors Research Foundation*, 3(3),1-42.

Albrecht, W. S., Wernz, G. & Williams, T. (1995) *Fraud: Bringing Light to the Dark Side of* Business, 1ˢᵗ edition. New York: McGraw-Hill.

Albrecht, W. S., Albrecht, C. & Albrecht, C. C. (2008) Current Trends in Fraud and Its Detection. *Information Security Journal: A Global Perspective,* 17(1), 2-12.

Albrecht, W. S. & Albrecht, C. C. (2002) Root Out Financial Deception. *Journal of Accountancy, New York,* 193(4), 30-36.

Albrecht, W. S., Albrecht, C. C. & Albrecht, C. O. (2004) Fraud and Corporate Executives: Agency, Stewardship and Broken Trust. *Journal of Forensic Accounting,* 5(1), 109-130.

Ali, A. M. (1994) *Accountability in the Audit Profession in Malaysia*, 1ˢᵗ edition. Kuala Lumpur: University of Malaya Press.

Alleyne, P. (2002) Independence of Auditors: In the Deep End? A Barbadian Analysis. *Journal of Eastern Caribbean Studies*, 27(2), 55-79.

Alleyne, P. & Howard, M. (2005) An Exploratory Study of Auditors' Responsibility for Fraud Detection in Barbados. *Managerial Auditing Journal*, 20(3), 284-303.

Alleyne, P., Hudaib, M. & Pike, R. (2013). Towards a Conceptual Model of Whistle-blowing Intentions among External Auditors. *The British Accounting Review*, 45(1), 10-23.

Al-Najjar, B. & Taylor, P. (2008) The relationship between capital structure and ownership structure: New evidence from Jordanian panel data. *Managerial Finance*, 34(12), 919-933.

American Institute of Certified Public Accountants (1997) *Consideration of Fraud in a Financial Statement Audit. Statement on Auditing Standards No. 82*. New York, NY: AICPA.

American Institute of Certified Public Accountant (2002) *AU Section 316: Consideration of Fraud in a Financial Statement Audit (SAS No.99; SAS No.113)*. New York, NY: AICPA.

American Institute of Certified Public Accountant (2013) *AI 240: The Auditor's Responsibility to Consider Fraud in an Audit of Financial Statements*. New York, NY: AICPA.

Armstrong, R.W. & Sweeney, J. (1994) Industry Type, Culture, Mode of Entry and Perceptions of International Marketing Ethics Problems: A Cross-Cultural Comparison. *Journal of Business Ethics*, 13(1): 775-785.

Ansah, S. O., Moyes, G.D., Oyelere, P.B. & Hay, D. (2002) An Empirical Analysis of the Likelihood of Detecting Fraud in New Zealand. *Managerial Auditing Journal,* 17(4), 192-204.

Apostolou, B., Hassell, J. M. & SA, W. (2000) Forensic Expert Classification of Management Fraud Risk Factors. *Journal of Forensic Accounting,* 1(2), 181-191.

Arrington, C. E. & Francis, J. R. (1989) Letting the Chat Out of the Bag: Deconstruction, Privilege and Accounting Research. *Accounting, Organisations and Society*, 14(1), 1-28.

Arthaud-Day, M. L., Certo, S. T., Dalton, C. M. & Dalton, D. R. (2006) A Changing of the Guard: Executive and Director Turnover Following Corporate Financial Restatements. *Academy of Management Journal*, 49(6), 1119-1136.

Artz, G. M. & Stone, K. E. (2006) Analyzing the Impact of Wal-Mart Supercenters on Local Food Store Sales. *American Journal of Agricultural Economics*, 88(5), 1296-1303.

Bagnoli, M. & Watts, S. G. (2001) The Effect of Relative Performance Evaluation on Earnings Management: A Game-theoretic Approach. *Journal of Accounting and Public Policy,* 19(4), 377-397.

Baker, C. R. & Bettner, M. S. (1997) Interpretive and Critical Research in Accounting: A Commentary on Its Absence from Mainstream Accounting Research. *Critical Perspectives on Accounting*, 8(4), 293-310.

Baker, H.K. & Veit, H.T. (1998) A Comparison of Ethics of Investment Professionals: North America Versus Pacific Rim Nations. *Journal of Business Ethics*, 17(8): 917-937.

Baltagi, B. H. (2008) *Econometric Analysis of Panel Data*, Volume 1. John Wiley & Sons.

Baltagi, B.H. (2013) *Econometric Analysis of Panel Data*, 5th edition. Wiley.

Batt, R. (2002). Managing Customer Services: Human Resource Practices, Quit Rates, and Sales Growth. *Academy of Management Journal*, 45(3), 587-597.

Bayou, M. E., & Reinstein, A. (2001) A Systemic View of Fraud Explaining Its Strategies, Anatomy and Process. *Critical Perspectives on Accounting*, 12(4), 383-403.

BBC News (2008a) *Financial Crisis: World Round-up*. BBC News, 3rd Nov. 2008.

BBC (2008b) *Anwar Ibrahim Wins Landslide Vote*. BBC News, 26th Aug. 2008.

BBC News (2014) Serious Fraud Office Starts Tesco Criminal Investigation. *BBC News*, 29th Oct. 2014.

BBC News (2015) 1MDB: The Case That's Riveting Malaysia. *BBC News*, 28th Aug. 2015.

BBC News (2016) Malaysia Prosecutor Clears PM Najib Razak of Corruption. *BBC News*, 26 Jan. 2016.

Beasley, M. S. (1996) An Empirical Analysis of the Relation between the Board of Director Composition and Financial Statement Fraud. *Accounting Review*, 71(4), 443-465.

Beasley, M. S., Carcello, J. V., Hermanson, D. R. & Lapides, P. D. (2000) Fraudulent Financial Reporting: Consideration of Industry Traits and Corporate Governance Mechanisms. *Accounting Horizons,* 14(4), 441-454.

Beasley, S. M., Carcello, J.V. & Hermanson, D.R. (1999) *Fraudulent Financial Reporting: 1987-1997: An Analysis of US Public Companies*. Report, R. (Ed.), COSO.

Becker, B. J. & Schram, C. M. (1994) Examining Explanatory Models through Research Synthesis. In H. Cooper & L. V. Hedges (Eds.), *The Handbook of Research Synthesis,* 357–382.

Bell, T. B. & Carcello, J. V. (2000) A Decision Aid for Assessing the Likelihood of Fraudulent Financial Reporting. *Auditing: A Journal of Practice & Theory,* 19(1), 169-184.

Bell, T. B., Szykowny, S. & Willingham, J. J. (1991) *Assessing the Likelihood of Fraudulent Financial Reporting: A Cascaded Logit Approach*. Working paper, Montvale, NJ: KPMG Peat Marwick.

Bellemare, M. F., Masaki, T. & Pepinsky, T. B. (2015) Lagged Explanatory Variables and the Estimation of Causal Effects. *Munich Personal RePEc Archive*. Available online: http://mpra.ub.uni-muenchen.de/62350/ [Acessed 20/9/2015].

Beneish, M. D. (1997) Detecting GAAP Violation: Implications for Assessing Earnings Management among Firms with Extreme Financial Performance. *Journal of Accounting and Public Policy,* 16(3), 271-309.

Benschop, Y. & Meihuizen, H. E. (2002) Keeping Up Gendered Appearances: Representations of Gender in Financial Annual Reports. *Accounting, Organizations and Society*, 27(7), 611-636.

Berry, W.D. (1993) *Understanding Regression Assumptions*. Sage Publications Ltd.

Bisman, J. (2010) Postpositivism and Accounting Research: A (Personal) Primer on Critical Realism. *Australasian Accounting, Business and Finance Journal*, 4(4), 3-25.

Black, W. K. (2005) "Control Frauds" as Financial Super-predators: How "Pathogens" Make Financial Markets Inefficient. *The Journal of Socio-Economics,* 34(6), 734-755.

Blocher, E. (1992) *the Role of Analytical Procedures in Detecting Management Fraud*. Montvale, NJ: Institute of Management Accountants.

Bloomberg (2016) *Bloomberg Business: Market FBMKLCI: IND*. Available online: http://www.bloomberg.com/quote/FBMKLCI:IND/. [Accessed 09/03/2016].

Bloomberg News (2014) *Malaysian Airline Stock Drops as State Considers Pullout*. Available online: http://www.bloomberg.com/news/2014-05-19/malaysian-air-falls-most-since-1998-amid-bankruptcy-concerns.html/. [Accessed 22/05/2014].

Bohman, J. (2015) *Critical Theory*. The Stanford Encyclopaedia of Philosophy, Edward N. Zalta (ed.). Available online: http://plato.stanford.edu/archives/win2015/entries/critical-theory/. [Accessed 29/04/2016].

Boland, R. J. J. (1993) Accounting and the Interpretive Act *Accounting, Organisations and Society*, 6(1), 125-146.

Bonner, S.E, Hesford, J.W, Van der Stede, W.A. & Young, S.M. (2006) The Most Influential Journals in Academic Accounting. *Accounting, Organizations and Society*, 31(7), 663-685.

Boote, D. N. & Beile, P. (2005) Scholars Before Researchers: On the Centrality of the Dissertation Literature Review in Research Preparation. *Educational Researcher*, 34(6), 3-15.

Bordens, K.S. & Abbott, B B. (1999) *Research Design and Methods: A Process Approach*, 4th edition. Mountain View, Calif: Mayfield Publishing Company.

Borenstein, M., Hedges, L. V., Higgins, J. & Rothstein, H. R. (2010) A Basic Introduction to Fixed-effect and Random-effects Models for Meta-analysis. *Research Synthesis Methods*, 1(2), 97-111.

Boyd, B. K. (1994) Board Control and CEO Compensation. *Strategic Management Journal*, 15(5), 335-344.

Braithwaite, J. (1985) White Collar Crime. *Annual Review of Sociology,* 11(1), 1-25.

Burchell, S., Clubb, C., Hopwood, A. G., Hughes, J. & Nahapiet, J. (1980) The Roles of Accounting in Organizations and Society, *Accounting Organizations and Society*, 5(1), 5-28.

Burchell, S., Clubb, C. & Hopwood, A. G. (1985) Accounting in Its Social Context: Towards a History of Value Added in the United Kingdom. *Accounting Organizations and Society*, 10(4), 381-413.

Buchanan, D. & Badham, R. (1999) Politics and Organizational Change: The Lived Experience. *Human Relations,* 52(5), 609-629.

Bunge, M. (1996) *Finding Philosophy in Social Science*, 1st edition. Yale University Press.

Burgstahler, D. & Dichev, I. (1997) Earnings Management to Avoid Earnings Decreases and Losses. *Journal of Accounting and Economics,* 24(1), 99-126.

Burrell, G. & Morgan, G. (1979) *Sociological Paradigms and Organizational Analysis*, 1st edition. NH: Heineman.

Bursa Malaysia (2014a) *Media Release*. Available online: http://www.bursamalaysia.com/corporate/media-centre/media-releases/#/?year=2014/[Accessed 8/3/2014]).

Bursa Malaysia (2014b) *Misleading Statements – Material Deviation of the Figures Reported between the Announced Unaudited Financial Figures and Audited Financial Figures for the Same Financial Period by the Listed Company*. Bukit Kiara, Kuala Lumpur.

Bursa Malaysia (2015a) *Listing Requirements - Chapter 9: Continuing Disclosure*. Available online: http://www.bursamalaysia.com/market/regulation/rules/listing-requirements/main-market/listing-requirements/ [Accessed 30/3/2015].

Bursa Malaysia (2015b) *Listing Requirements - Chapter 2: General Contents of Statement, Information or Document*. Available online: http://www.bursamalaysia.com/misc/_system/assets/14721/MAIN_Chap2_FSA_clean_11Jul2015.pdf/ [Accessed 15/10/2015].

Bursa Malaysia (2015c) *Listing Requirements - Chapter 15: Corporate Governance*. Available online: http://www.bursamalaysia.com/market/regulation/rules/listing-requirements/main-market/listing-requirements/ [Accessed 30/6/2015].

Bursa Malaysia (2015d) *Listing Requirements - Chapter 1: Definitions and Interpretation*. Available online: http://www.bursamalaysia.com/misc/system/assets/14717/MAIN/Chap1_FSA_clean_11Jul2015.pdf/ [Accessed 15/12/2015].

Bursa Malaysia (2015e) *Enforcement - Enforcement Statistics*. Available online: http://www.bursamalaysia.com/market/regulation/enforcement/enforcement-statistics/ [Accessed 30/4/2015].

Bursa Malaysia (2015f) *Listed Companies – Initial Public Offering: Listing Statistics.* Available online: http://www.bursamalaysia.com/market/listed-companies/initial-public-offerings/listing-statistics/ [Accessed 16/3/2015].

Bursa Malaysia Securities Berhad (2009) *Practice Note 5 – Training for Directors*. Available online: http://www.bursamalaysia.com/misc/regulation_rules_bm_main_pn5.pdf/ [Accessed 5/1/2014].

Cahan, S. F. (1992) The Effect of Antitrust Investigations on Discretionary Accruals: A Refined Test of the Political-cost Hypothesis. *Accounting Review*, 5(2), 77-95.

Calavita, K., Tillman, R. & Pontell, H. N. (1997) The Savings and Loan Debacle, Financial Crime, and the State. *Annual Review of Sociology*, 23(1), 19-38.

Carcello, J.V. & Palmrose, Z.V. (1994) Author Litigation and Modified Reporting on Bankrupt Clients. *Journal of Accountancy Research*; 32 (Suppl), 1–30.

Carey, M. & Stulz, R. M. (2007) *Introduction to the Risks of Financial*. Institutions University of Chicago Press, 1-26.

Carter, R. & Stover, R. (1991) Management Ownership and Firm Value Compensation Policy: Evidence from Converting Savings and Loan Associations. *Finance Management*, 20(4), 80–90.

Chartered Institute of Management Accountants (2009) *Corporate Fraud: Topic Gateway* Series No.57. UK: CIMA.

Chen, K. Y. & Elder, R. J. (2007) *Fraud Risk Factors and the Likelihood of Fraudulent Financial Reporting: Evidence from Statement on Auditing Standards No. 43 in Taiwan*. Working paper.

Chow, C. W. & Rice, S. J. (1982) Qualified Audit Opinions and Auditor Switching. *Accounting Review*, 57(2), 326-335.

Christie, A. A. (1982) The stochastic behavior of common stock variances: Value, leverage and interest rate effects. *Journal of financial Economics*, 10(4), 407-432.

Christie, A. A. (1990) Aggregation of Test Statistics: An Evaluation of the Evidence on Contracting and Size Hypotheses. *Journal of Accounting and Economics*, 12(1), 15-36.

Chua, W. F. (1986) Radical Developments in Accounting Thought. *The Accounting Review,* 61(4), 601-632.

Chua, W. F. (1988) Interpretive Sociology and Management Accounting Research - A Critical Review. *Accounting, Auditing & Accountability Journal*, 1(2), 59-79.

Clinard, M. B. & Quinney, R. (1973) *Criminal Behavior Systems: A Typology*. New York: Holt, Rinehart and Winston.

Clinard, M. B., Quinney, R. & Wildeman, J. (1994) *Criminal Behaviour Systems: A Typology*, 1st edition. Anderson Publishing Co.

Clinard, M. B., Quinney, R. & Wildeman, J. (2010) *Criminal Behavior Systems: A Typology,* 2nd edition. Newnes.

Clore, G. L., Ortony, A. & Foss, M. A. (1987) The Psychological Foundations of the Affective Lexicon." Journal of Personality and Social Psychology, 53(4), 751-766.

Cohen, J. (1988) *Statistical Power Analysis for the Behavioral Sciences*, 2nd edition. Hillsdale, NJ: Erlbaum.

Cohen, J. (1992) A Power Primer. *Psychological Bulletin*, 112(1), 155.

Cohen, L. E. & Felson, M. (1979) Social Change and Crime Rate Trends: A Routine Activity Approach. *American Sociological Review*, 44(4), 588-608.

Collier, P. (1993) Factors Affecting the Formation of Audit Committees in Major UK Listed Companies. *Accounting and Business Research,* 23 (Suppl 1), 421-430.

Collins, H. (2010) *Creative Research: The Theory and Practice of Research for the Creative Industries*, 1st edition. AVA Publications.

Colville, I. (1981) Reconstructing "Behavioural Accounting". *Accounting Organizations and Society*, 3(3), 119-132.

Colville, I. (1982) Accounting Information Systems in a Police Force. *Discussion Paper*. School of Management, University of Bath.

Compact Oxford English Dictionary. (2008), revised edition. Oxford: Oxford University Press.

Companies Commission of Malaysia - SSM. (2014). *Legal Framework: Acts and Regulations*. Available online: http://www.ssm.com.my/en/services_acts_regulations/ [Accessed 12/2/2014].

Cooper, D. J. & Sherer, M. J. (1984) The Value of Corporate Accounting Reports: Arguments for a Political Economy of Accounting, *Accounting Organizations and Society*, 3(3), 207-232.

Cormier, D. & Magnan, M. (1999) Corporate Environmental Disclosure Strategies: Determinants, Costs and Benefits. *Journal of Accounting, Auditing & Finance,* 14 (4), 429-451.

Cotton, D.L. (2002) *Fixing CPA Ethics Can be an Inside Job*. Available online: http://www.washingtonpost.com/ac2/wpdyn/A50649-2002Oct19?Language=printer/ [Accessed 3/4/2014].

Coughlan, A. T. & Schmidt, R. M. (1985) Executive Compensation, Management Turnover, and Firm Performance: An Empirical Investigation. *Journal of Accounting and Economics*, 7(1), 43-66.

Covaleski, M. A. & Dirsmith, M. W. (1990) Dialetic Tension, Double Relexivity and the Everyday Accounting Researcher on Using Qualitative Methods. *Accounting, Organisations and Society,* 15(6), 543-573.

Credit Suisse. (2012) Malaysia's Budget Preview: Politically Driven, Fiscally Challenged? *Research, E.*

Cressey, D. R. (1953) *Other People's Money: A Study in the Social Psychology of Embezzlement*. Glencoe: The Free Press.

Cressey, D. R. (1973) *Other People's Money*, 1st edition. Montclair: Patterson Smith.

Creswell, J. W. (2003) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 2nd edition. London: Sage Publications Ltd.

Creswell, J. W. (2007) *Qualitative Inquiry & Research Design*, 2nd edition. London: Sage Publications Ltd.

Creswell, J. W. (2009a) Editorial: Mapping the Field of Mixed Methods Research. *Journal of Mixed Methods Research*, 3(2), 95-108.

Creswell, J. W. (2009b) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 3rd edition. London: Sage Publications Ltd.

Creswell, J. W. & Plano-Clark, V. L. (2011) *Designing and Conducting Mixed-Method Research,* 2nd edition. London: Sage Publications Ltd.

Crowe, H. (2011) *Why the Fraud Triangle is No Longer Enough*. IN Horwath, Crowe LLP.

Crowe, H. (2012a) *a Violation of Trust: Fraud Risk in Not-for-Profit Organizations*. IN Horwath, Crowe LLP.

Crowe, H. (2012b) *the Crook and the Crook Catcher: the Battle against Fraud and Corruption*. IN Horwath, Crowe LLP.

Cullinan, C. (2004) Enron as a Symptom of Audit Process Breakdown: Can the Sarbanes-Oxley Act Cure the Disease? *Critical Perspectives on Accounting*, 15(3), 853–64.

Daboub, A. J., Rasheed, A.M.A., Priem, L.R. & Gray, D. (1995) Top Management Team Characteristics and Corporate Illegal Activity. *Academy of Management Review,* 20(1).

Dalnial, H., Kamaluddin, A., Sanusi, Z. M. & Khairuddin, K. S. (2014) Detecting Fraudulent Financial Reporting through Financial Statement Analysis. *Journal of Advanced Management* Science, 2(1), 17-22.

Dandira, M. (2011) Executive Directors' Contracts: Poor Performance Rewarded. *Business Strategy Series*, 12(3), 156-163.

Daniel, N. D., Denis, D. J. & Naveen, L. (2008) Do Firms Manage Earnings to Meet Dividend Thresholds? *Journal of Accounting and Economics,* 45(1), 2-26.

Daroca, F. P. & Holder, W.W. (1985) The Use of Analytical Procedures in Review and Audit Engagements. *Auditing: A Journal of Practice and Theory,* 4(2), 80-92.

Dawson, S. (1994) Workers' Compensation in Pennsylvania: The Effects of Delayed Contested Cases. *J Health Soc Policy,* 6(1), 87-100.

Dawson, S. (2001) Fraud: Defusing the Corporate Bomb. *Executive Business Brief,* 6(5), 14-15.

Dechow, P. M., Sloan, R. G. & Sweeney, A. P. (1996) Causes and Consequences of Earnings Manipulation: An Analysis of Firms Subject to Enforcement Actions by the SEC. *Contemporary Accounting Research,* 13(1), 1-36.

Deci, E. L. (1971) Effects of Externally Mediated Rewards on Intrinsic Motivation. *Journal of Personality and Social Psychology*, 18(1), 105–115.

Deci, E. L. (1975) *Intrinsic Motivation*, 1st edition. New York: Plenum.

Deci, E. L. & Ryan, R. M. (1985) The General Causality Orientations Scale: Self-Determination in Personality. *Journal of Research in Personality,* 19(2), 109-134.

Deci, E. L. & Ryan, R. M. (2002) *Handbook of Self-Determination,* 1st edition. New York: The University of Rochester Press.

Dellaportas, S. (2013) Conversations with Inmate Accountants: Motivation, Opportunity and the Fraud Triangle. *Accounting Forum,* 37(1), 29-39.

Delmar, F. (2006) Measuring Growth: Methodological Considerations and Empirical Results. *Entrepreneurship and the Growth of Firms*, 1(1), 62-84.

Denning, D. E. & Baugh Jr, W. E. (1999) Hiding Crimes in Cyberspace. *Information, Communication & Society*, 2(3), 251-276.

Department of Statistics Malaysia. (2016) *Social & Demography – Time Series: Population Statistics*. Availabe online: https://www.statistics.gov.my/dosm/uploads/files/3_Time%20Series/Malaysia_Time_Series_2015/22Perangkaan_Penduduk.pdf/ [Accessed 1/5/2016].

Dhaliwal, D., Salamon, G. & Smith, E. (1982) The Effect of Owner Versus Management Control on the Choice of Accounting Methods. *Journal of Accounting and Economics,* 4(1), 41-53.

Diggle, P. J., Heagerty, P., Liang, K-Y. & Zeger, S. L. (2002) *Analysis of Longitudinal Data*, 2nd edition. Oxford University Press, 169–171.

Dirsmith, M. W., Covaleski, M. A. & McAllister, J. (1985) Of Paradigms and Metaphors in Auditing Thought. *Contemporary Accounting Research*, 2(1), 46-68.

Dontoh A., Ronen J. & Sarath, B. (2004) *Financial Statements Insurance*. Working paper. New York University.

Dooley, D. V. (2002) Financial Fraud: Accounting Theory and Practice. *Fordham Journal of Corporate & Financial Law*, 8(1), S53.

Dopuch, N., Holthausen, R. & Leftwich, R. (1987) Predicting Audit Qualifications with Financial and Market Variables. *The Accounting Review*, 62(1), 431-454.

Dopuch, N. & Pincus, M. (1988) Evidence on the Choice of Inventory Accounting Methods: LIFO versus FIFO. *Journal of Accounting Research*, 4(1), 28-59.

Dorminey, J. W., Fleming, A. S., Kranacher, M. & Riley, R. (2010) Beyond the Fraud Triangle: Enhancing Deterrence of Economic Crimes. *The CPA Journal,* 80(7), 17-24.

Dorminey, J.W., Fleming, A. S., Kranacher, M.J. & Riley, R. A. (2012) The Evolution of Fraud Theory. *Issues in Accounting Education,* 27(2), 555-579.

Doupnik, T. S. (2008) Influence of Culture on Earnings Management: A Note. *Abacus*, 44(3), 317-340.

Doupnik, T. S. & Tsakumis, G. T. (2004) A Critical Review of the Tests of Gray's Theory of Cultural Relevance and Suggestions for Future Research. *Journal of Accounting Literature*, 23(1), 1-30.

Drew, J. M. & Drew, M. E. (2010) Identification of Ponzi Schemes: Can a Picture Tell a Thousand Frauds. *The Griffith L. Rev.,* 19(1), 51-70.

Duffield, G. M. & Grabosky, P. N. (2001) *The Psychology of* Fraud, 1st edition. Australian Institute of Criminology.

Duke, J. C. & Hunt III, H. G. (1990) An Empirical Examination of Debt Covenant Restrictions and Accounting-related Debt Proxies. *Journal of Accounting and Economics,* 12(1), 45-63.

Dunn, P. (2004) The Impact of Insider Power on Fraudulent Financial Reporting. *Journal of Management,* 30(3), 397-412.

Durbin, J., & G. S. Watson. (1951) Testing for Serial Correlation in Least Squares Regression, II, *Biometrika*, 38(1), 150-178.

Edelhertz, H. (1970) *The Nature, Impact, and Prosecution of White-collar Crime*, special edition. National Institute of Law Enforcement and Criminal Justice.

Efendi, J., Srivastava, A. & Swanson, E.P. (2004) *Why Do Corporate Managers Misstate Financial Statements? The Role of Option Compensation, Corporate Governance and Other Factors*. Working paper, Texas A&M University.

Elliott, R. K. & Willingham, J. J. (1980) *Management Fraud: Detection and Deterrence*, 1st edition. New York: Petrocelli Books.

Entorf, H. & Spengler, H. (2000) Socioeconomic and demographic factors of crime in Germany: Evidence from panel data of the German states. *International review of law and economics*, 20(1), 75-106.

Ernst, H. (2001) Patent Applications and Subsequent Changes of Performance: Evidence from Time-series Cross-section Analyses on the Firm Level. *Research Policy*, 30(1), 143-157.

Everett, J., Neu, D. & Rahaman, A. S. (2007) Accounting and the Global Fight Against Corruption. *Accounting, Organizations and Society,* 32(6), 513-542.

Fama, E. F. (1980) Agency Problem and the Theory of the Firm. *Journal of Political Economy,* 88(2), 288-308.

Fama, E. F. & Jensen, M. C. (1983) Agency Problems and Residual Claims. *Journal of Law and Economics*, 2(1), 327-349.

Fanning, M. K. & Cogger, K.O. (1998) Neural Detection of Management Fraud using Published Financial Data. *International Journal of Intelligent Systems in Accounting, Finance and Management,* 7(1), 21-41.

Feroz, E. H., Park, K. & Pastena, V. S. (1991) The Financial and Market Effects of the SEC's Accounting and Auditing Enforcement Releases. *Journal of Accounting Research,* 29 (Suppl), 107-142.

Field, A. (2013) *Discovering Statistics using IBM SPSS* Statistics, 4th edition. Sage Publications Ltd.

Field, A. P. (2003) The Problem in using Fixed-effects Models of Meta-analysis on Real World Data. *Understanding Statistics*, 2(2), 77–96.

Financial Accounting Standards Board (1985) *Statement of Financial Accounting Concepts (No. 6).* Financial Accounting Standards Board.

Financial Reporting Council (2014) Available online: https://www.frc.org.uk/Our-Work/Publications/APB/Summary-of-changes-in-the-new-ISAs(UK-and-ireland pdf/ [Accessed 14/4/2014].

Financial Reporting Standards No.1 (1996) *Cash Flow Statements*. Accounting Standard Board.

Finkel, S. E. (1995) *Causal Analysis with Panel Data*, 1st edition. Sage Publications Ltd.

Finkelstein, S. (1992) Power in Top Management Teams: Dimensions, Measurement, and Validation. *The Academy of Management Journal,* 35(3), 505-538.

Fisher, R. (1920) A Mathematical Examination of the Methods of Determining the Accuracy of Observation by the Mean Error and the Mean Square Error, *Monthly Notes of the Royal Astronomical Society*, 80(1), 758-770.

Flesher, D. L. (1996) *Internal Auditing-Standards and Practices.* Altamonte Springs, FL: Institute of Internal Auditors.

Fossey, E., Harvey, C. & McDermott, F. (2002) Understanding and Evaluating Qualitative Research. *Australian and New Zealand Journal of Psychiatry* 36(6): 717–732.

Fraenkel, J. R. & Wallen, N. E. (2006) *How to Design and Evaluate Research in Education with PowerWeb*, 6th edition. New York: McGraw-Hill.

Frankfort-Nachmias, C. & Leon-Guerrero, A. (2009) *Social Statistics for a Diverse Society*, 5th edition. Sage Publications Ltd.

Fraud Act (2006) Chapter 35: Fraud. United Kingdom: The Stationery Office Limited.

Fredrickson, B. L. (1998) What Good are Positive Emotions? *Review of General Psychology*, 2(2), 300-319.

Freeman, R. E. (1984) *Strategic Management: A Stakeholder Approach*, 1st edition. Pitman, Boston.

Gaffikin, M (2007) Accounting Research and Theory: The Age of Neo-empiricism. *Australasian Accounting Business and Finance Journal*, 1(1), 1-17.

Garratt, B. (2005) A Portrait of Professional Directors: UK Corporate Governance in 2015. *Corporate Governance: An International Review*, 13(2), 122-126.

Gaur, V. & Kesavan, S. (2009) The Effects of Firm Size and Sales Growth Rate on Inventory Turnover Performance in the U.S Retail Sector. *In Retail Supply Chain Management*, 25-52.

Ghazali, N. & Weetman, P. (2006) Perpetuating Traditional Influences: Voluntary Disclosure in Malaysia Following the Economic Crisis. *Journal of International Accounting, Auditing and Taxation,* 15(3), 226-248.

Gill, P., Stewart, K., Treasure, E. & Chadwick, B. (2008) Methods of data collection in qualitative research: interviews and focus groups. *British Dental Journal*, 204(6), 291-295.

Godfrey, L. G. (1978) Testing for Higher Order Serial Correlation in Regression Equations when the Regressors Include Lagged Dependent Variables. *Econometrica: Journal of the Econometric Society*, 46(6), 1303-1310.

Goel, S. & Gangolly, J. (2012) Beyond the Numbers: Mining the Annual Reports for Hidden Cues Indicative of Financial Statement Fraud. *Intelligent Systems in Accounting, Finance and Management*, 19(2), 75-89.

Goncharov, I. Z. J. (2006) Do Accounting Standards Influence the Level of Earnings Management? Evidence from Germany. *SSRN elibrary*.

Gray, S.J. (1988) Towards a Theory of Cultural Influence on the Development of Accounting Systems Internationally. *Abacus* 24 (1), 1–15.

Green, B. (1991) *Identifying Management Irregularities through Preliminary Analytical Procedures.* Unpublished Thesis.

Greene, W.H. (2008) *Econometric Analysis*, 6th edition. Upper Saddle River, N.J.: Prentice Hall.

Guan, L., Kaminski, K. A. & Wetzel, T. S. (2001) *Ratio Analysis–Predictor of Fraud.* Unpublished Thesis, Oklahoma State University.

Guiso, L., Sapienza, P. & Zingales, L. (2006) *Does Culture Affect Economic Outcomes?* Working paper, University of Rome, Northwestern University & Harvard University.

Gujarati, D. (2003) *Basic Econometrics*, 4th edition. New York: McGraw Hill, 638-640.

Habermas, J. (1978). *Knowledge and Human Interests*, 2nd edition. Heinemann Educational Books.

Haleblian, J. & Finkelstein, S. (1993) Top Management Team Size, CEO Dominance, and Firm Performance: The Moderating Roles of Environmental Turbulence and Discretion. *Academy of Management Journal*, 36(4), 844-863.

Hambrick, D. C. & D'Aveni, R. A. (1992) Top Team Deterioration as Part of the Downward Spiral of Large Corporate Bankruptcies. *Management Science,* 38(10), 1445-1466.

Hamilton, V. L. & Sanders, J. (1999) The Second Face of Evil: Wrongdoing in and by the Corporation. *Personality and Social Psychology Review,* 3(3), 222-233.

Haniffa, R. & Cooke. T. E. (2002) Culture, Corporate Governance and Disclosure in Malaysian Corporations. *Abacus,* 38(3), 317-349.

Haniffa, R. & Hudaib, M. (2006) Corporate Governance Structure and Performance of Malaysian Listed Companies. *Journal of Business Finance & Accounting*, 33(7-8), 1034-1062.

Harter, S. (1983) *Developmental Perspectives on the Self-system.* In E.M. Hetherington Handbook of Child Psychology: Socialisation, Personality and Social Development. New York: Wiley, 275-386.

Hasnan, S., Abdul Rahman, R., & Mahenthrian, S. (2008) Management predisposition, motive, opportunity, and earnings management for fraudulent financial reporting in Malaysia. *Sakthi, Management Predisposition, Motive, Opportunity, and Earnings Management for Fraudulent Financial Reporting in Malaysia (December 15, 2008).*

Hausman, J. A. (1978). Specification Tests in Econometrics. *Econometrica* 46 (6), 1251–1271.

Healy, P. M. (1985) The Effect of Bonus Schemes on Accounting Decisions. *Journal of Accounting and Economics,* 7(1), 85-107.

Healy, P. M. & Wahlen, J. M. (1999) A Review of the Earnings Management Literature and Its Implications for Standard Setting. *Accounting Horizons,* 13(4), 365-383.

Hedges, L. V. & Vevea, J. L. (1998) Fixed and Random-effects Models in Meta-analysis. *Psychological Methods*, 3(4), 486–504.

Heiman-Hoffman, V. B., Morgan, K.P. & Patton, J.M. (1996) The Warning Signs of Fraudulent Financial Reporting. *Journal of Accountancy,* 182 (4), 75-77.

Henkel, H. (1991) For The Purpose Of Impairing. *Obstructing or Defeating the Lawful Function of Any Government Department,* 216(1), 462-479.

Hillison, W., Pacini, C. & Sinason, D. (1999) The Internal Auditor as Fraud-buster." *Managerial Auditing Journal,* 14(7), 351-363.

Hinton, P. (1995) *Statistics Explained*, 1st edition. London: Routledge.

Hofstede, G. (1980) *Culture's Consequences: International Differences in Work Related Values*. Beverly Hills, CA: Sage Publications.

Hofstede, G. (2001) *Culture's Consequences: Comparing Values, Behaviours, Institutions and Organizations Across Nations*, 2nd edition. Sage Publications Ltd.

Hofstede, G., Hofstede, G. J. & Minkov, M. (2010) *Cultures and Organisations- Software of the Mind: Intercultural Cooperation and Its Importance for Survival*, 3rd edition. New York: McGraw-Hill.

Hollinger, R.C. & Clark, J.P. (1983) *Theft by Employees*. Lexington: Lexington Books.

Holthausen, R. W., Larcker, D. F. & Sloan, R. G. (1995) Annual Bonus Schemes and the Manipulation of Earnings. *Journal of Accounting and Economics,* 19(1), 29-74.

Hope, O.K. (2003) Firm-level Disclosures and the Relative Roles of Culture and Legal Origin. *Journal of International Financial Management and Accounting*, 14 (3), 218–248.

Hope, O. K., Kang, T., Thomas, W. & Yoo, Y. K. (2008) Culture and Auditor Choice: A Test of the Secrecy Hypothesis. *Journal of Accounting and Public Policy*, 27(5), 357-373.

Hopper, T., Annissette, M.A., Dastoor, N., Uddin, S.N. & Wickramasinghe, D.P. (1995) Some Challenges and Alternatives to Positive Accounting Research (introduction to Chapter Five), in Jones, S., Romano, C. and Ratnatunga, J. (Eds). *Accounting Theory: A Contemporary Review*, 5(1), 517-550.

Hopper, T. & Powell, A. (1985) Making Sense of Research into the Organizational and Social Aspects of Management Accounting: A Review of Its Underlying Assumptions. *Journal of management Studies,* 22(5), 429-465.

Hopwood, A. G. (1978) Towards an Organizational Perspective for the Study of Accounting and Information Systems. *Accounting Organizations and Society*, 3(1), 3-13.

Hosmer, D. W. & Lemeshow, S. (1989) *Applied Logistic Regression*. New York: Johns Wiley & Sons.

House, R.J., Hanges, P.J., Javidan, M., Dorfman, P.W. & Gupta, V. (2004). *Culture, Leadership and Organizations: The GLOBE Study of 62 Societies*. Sage Publications, Inc.

Hovakimian, A., Opler, T. & Titman, S. (2001) The Debt-equity Choice. *Journal of Financial and Quantitative Analysis,* 36(1), 1-24.

Howell, K. E. (2013) *Introduction to the Philosophy of Methodology*. London: Sage Publications Ltd.

Hsieh, F. Y. (1989) Sample size tables for logistic regression. Statistics in medicine, 8(7), 795-802.

Hudaib, M. & Cooke, T. E. (2005) The Impact of Managing Director Changes and Financial Distress on Audit Qualification and Auditor Switching. *Journal of Business Finance & Accounting*, 32(9-10), 1703-1739.

Hudaib, M. & Haniffa, R. (2009) Exploring Auditor Independence: An Interpretive Approach. *Accounting, Auditing & Accountability Journal*, 22(2), 221-246.

Hunt, H. G. (1985) Potential Determinants of Corporate Inventory Accounting Decisions. *Journal of Accounting Research*, 23(2), 448-467.

Hunter, J. E. & Schmidt, F. L. (2000) Fixed Effects vs. Random Effects Meta-analysis Models: Implications for Cumulative Research Knowledge. *International Journal of Selection and Assessment*, 8(4), 275–292.

Institute of Chartered Accountants of England and Wales. (2001), *'ICAEW Official Site: Fraud'* Available online: http://www.icaew.com/. [Accessed 10/1/2014].

Institute of Internal Auditors (1985) *Deterrence, Detection, Investigation and Reporting of Fraud. Statement on Internal Auditing Standards (SIAS) No. 3.* Altamonte Springs, FL: IIA.

International Accounting Standards 1 (1997) *Presentation of Financial Statements* (revised). IASC.

International Auditing and Assurance Standards Board (2009) *The Auditors's Responsibilities Relating to Fraud in an Audit of Financial Statements*. International Standard on Auditing No. 240. New York: International Federation of Accountants.

Jaccard, J. (2001) *Interaction Effects in Logistic Regression*, 1st edition. Sage Publications Ltd.

Jaffar, N., Salleh, A., Mohd Iskandar, T. & Haron, H. (2007) The Effect of Fraud Risk Assessment on the External Auditors' Ability to Detect The Likelihood of Fraud: A Conceptual Discussion. *European Journal of Scientific Research,* 17(3), 425-432.

James, D. (1954) Errors in variables. *Review of the International Statistical Institute* 22 (1/3), 23–32.

Jayalakshmy, R., Seetharaman, A. & Khong, T.W. (2005) the Changing Role of Auditors. *Managerial Auditing Journal,* 20(3), 249-271.

Jones, J. (1991) Earnings Management during Import Relief Investigations. *Journal of Accounting Research,* 29(2), 193-228.

Kamber, T. (2002) The Brand Manager's Dilemma: Understanding How Advertising Expenditures Affect Sales Growth during a Recession. *The Journal of Brand Management*, 10(2), 106-120.

Kaplan, R. S. (1983) Measuring Manufacturing Performance: A New Challenge for Managerial Accounting Research. *The Accounting Review*, 58(4), 686-705.

Kaplan, R. S. (1984) The Evolution of Management Accounting. *The Accounting Review*, 59(3), 390-418.

Kaplan, R. S. (1986) The Role of Empirical Research in Management Accounting. *Accounting, Organisations and Society*, 11(4), 429-452.

Kassem, R. & Higson, A. (2012) The New Fraud Triangle Model. *Journal of Emerging Trends in Economics & Management Sciences,* 3(3), 191-195.

Kelman, H. C. & Hamilton, V. L. (1989) *Crimes of Obedience: Toward a Social Psychology of Authority and Obedience*. New Haven, CT: Yale University.

Key, K. G. (1997) Political Cost Incentives for Earnings Management in the Cable Television Industry. *Journal of Accounting and Economics,* 23(3), 309-337.

Khalil, M. & Ozkan, A. (2016) Board Independence, Audit Quality and Earnings Management: Evidence from Egypt. *Journal of Emerging Market Finance*, 15(1), 84-118.

Khalil, M. & Simon, J. (2014) Efficient Contracting, Earnings Smoothing and Managerial Accounting Discretion. *Journal of Applied Accounting Research*, 15(1), 100-123.

Kim, S., Abdolmohammadi, M. J. & Klein, L. A. (1996) CVP under Uncertainty and the Manager's Utility Function. *Review of Quantitative Finance and Accounting*, 6(2), 133-147.

King, N. (1998) *Qualitative methods in organizational research: A practical guide*. 1st edition. London: Sage Publications.

Kinney, W. R., Palmrose, Z. & Scholz, S. (2004) Auditor Independence, Non-audit Services, and Restatements: Was the U.S. Government Right? *Journal of Accounting Research*, 42(3), 561–88.

Kirby, L. D., Morrow, J. & Yih, J. (2014) T*he Challenge of Challenge: Pursuing Determination as an Emotion*. In M. M. Tugade, M. N. Shiota, & L. D. Kirby (Eds.), Handbook of Positive Emotions. New York: Guilford Publications, Inc.

Klein, A. (2002) Audit Committee, Board of Director Characteristics, and Earnings Management. *Journal of Accounting and Economics,* 33(3), 375-400.

Kolb, D.A. (1984) *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs, New Jersey: Prentice-Hall.

Kopel, J.L. (2003a) *The SEC's New Auditor Independence Rules*. Insights. The Corporate and Securities Law Advisor, 17(3), 2-12.

Kopel, J.L. (2003b) *The SEC's New Auditor Independence Rules*. Insights. The Corporate and Securities Law Advisor, 17(5), 18-30.

KPMG (2013) *Study on Non-Executive Directors 2013 - Profile and Pay*. KPMG Malaysia, Kuala Lumpur.

KPMG (2014) *KPMG Malaysia Fraud, Bribery and Corruption Survey 2013*. KPMG Malaysia, Kuala Lumpur.

Kranacher, M.J., Riley, R. & Wells, J. T. (2010) *Forensic Accounting and Fraud Examination*, 1st edition. John Wiley & Sons.

Kraus, A. & Litzenberger, R. H. (1973) A state-preference model of optimal financial leverage. *The journal of finance*, 28(4), 911-922.

Kruger, J & Dunning, D. (1999) Unskilled and Unaware of It: How Difficulties in Recognizing One's Own Incompetence Lead to Inflated Self-Assessments. *Journal of Personality and Social Psychology*, 77(6), 121-1134.

Laerd Statistics (2013) Chi-Square Test for Association using SPSS Statistics' Available online: https://statistics.laerd.com/spss-tutorials/chi-square-test-for-association-using-spss-statistics.php/ [Accessed 12/7/2013].

Lai, K. (2003) *The Sarbanes-Oxley Act and Auditor Independence: Preliminary Evidence from Audit Opinion and Discretionary Accruals*. Working paper. City University of Hong Kong.

Latham, C. & Jacobs, F. (2000a) Monitoring and Incentives Factors Influencing Misleading Disclosures. *Journal of Managerial Issues* (Summer), 12(2), 169–87.

Latham, C & Jacobs, F. (2000b) Monitoring and Incentive Factors Influencing Misleading Disclosures. *Journal of Managerial Issues*, 12(2), 169–87.

Laughlin, R. (1995) Empirical Research in Accounting: Alternative Approaches and A Case for "Middle-range" Thinking. *Accounting, Auditing and Accountability Journal*, 8(1), 63-87.

Laughlin, R. C. (1987) Accounting Systems in Organisational Contexts: A Case for Critical Theory. *Accounting, Organizations and Society*, 12(5), 479-502.

Lautenschlager, G. J. & Mendoza, J. L. (1986) A Step-down Hierarchical Multiple Regression Analysis for Examining Hypotheses about Test Bias in Prediction. *Applied Psychological Measurement*, 10(2), 133-139.

Lazarides, T. G., Drimpetas, E. & Koufopoulos, D. N. (2008) Executive Board Members' Remuneration: A Longitudinal Study. *Corporate Ownership & Control*, 6(1), 94-103.

Lee, A. S. (1989) A Scientific Methodology for MIS Case Studies. *MIS Quarterly*, 13(1), 33-52.

Lee, A. S. (1991) Integrating Positivist and Interpretive Approaches to Organizational Research. *Organization Science*, 2(4), 342-365.

Lee, T. (1994) The Changing Form of the Corporate Annual Report. *The Accounting Historians Journal*, 2(1), 215-232.

Lehman, C. R. & Okcabol, F. (2005) Accounting for Crime. *Critical Perspectives on Accounting,* 16(5), 613-639.

Lewis-Beck, M. S. (1980) *Applied Regression: An Introduction.* Sage Publications Ltd.

Lichtman, M. (2006) *Qualitative Research in Education: A User's Guide.* Sage Publication Inc.

Lin, W., Liwen, X. & Jia, L. (2011) Detecting Financial Statement Fraud of Listed Company - An empirical research based on fraud triangle theory. *Auditing Research,* 2(1).

Lindahl, F. W. (1989) Dynamic Analysis of Inventory Accounting Choice. *Journal of Accounting Research*, 27(2), 201-226.

Lister, L. M. (2007) A Practical Approach to Fraud Risk. *Internal Auditor*, 64(6), 1-30.

Loebbecke, J. K., Eining, M.M. & Willingham, J.J (1989) Auditor's Experience with Material Irregularities: Frequency, Nature and Detectability. *Auditing: A Journal of Practice and Theory*, 9(1), 1-28.

Loebbecke, J.K. & Willingham, J.J. (1988) *Review of SEC Accounting and Auditing Enforcement Releases*. University of Utah.

Lou, Y.I. & Wang, M.L. (2009) Fraud Risk Factor of the Fraud Triangle Assessing the Likelihood of Fraudulent Financial Reporting. *Journal of Business & Economics Research (JBER),* 7(2), 61-78.

Lundelius, C. (2011) What is Financial Fraud? *Corporate Financial Insider, AICPA*.

Lys, T. & Watts, R. (1994) Lawsuits against Auditors. *Journal of Accountancy Research*, 32 (Suppl), 65–93.

Machi, L. A. & McEvoy, B. T. (2009) *The Literature Review: Six Steps to Success*. CA, Corwin: Thousand Oaks.

Macintosh, N. B. & Scapens, R. (1990) Structuration Theory in Management Accounting. *Accounting, Organisations and Society*, 15(5), 455-477.

Maddala, G.S. & Lahiri, K., (1992) *Introduction to Econometrics*. New York: Macmillan.

Malaysian Accounting Standards Board (2013) *Malaysian Financial Reporting Standards (MFRS) 108: Accounting Policies, Changes in Accounting Estimates and Errors.* Kuala Lumpur.

Malaysian Accounting Standards Board (2014) *Transition to IFRS*. Available online: http://www.masb.org.my/pages.php?id=67/ [Accessed 25/3/2014].

Malaysian Anti-Corruption Commission. (2013) *MACC Annual Report 2012*. Available online: http://www.sprm.gov.my/about-macc.html./ [Accessed 12/2/2014]

Malaysian Approved Standards on Auditing (2001) *AI 240 Fraud and Error*. Kuala Lumpur: Malaysian Institute of Accountants.

Manurung, D. T. & Hadian, N. (2013) Detection Fraud of Financial Statement with Fraud Triangle. *23rd International Business Research Conference*, at Marriott Hotel, Melbourne, Australia.

Marino Jr, A. J. (1995) Separating Your Annual Report from the Herd. *Public Relations Quarterly*, 40(2), 44-47.

Marriage, A. (2013) Secret Structures, Hidden Crimes: Urgent Steps to Address Hidden Ownership, Money Laundering and Tax Evasion from Developing Countries. European Network on Debt and Development.

Matoussi, H. & Gharbi, I. (2011) Board Independence and Corporate Fraud: The Case of Tunisian Firms. *Politics and Economic Development.* Working Paper.

McDaniel, C. & Gates, R. (2001) *Marketing Research Essentials*. Dayton, OH: Southwestern College.

McDougall, P. P., Covin, J. G., Robinson, R. B. & Herron, L. (1994) The Effects of Industry Growth and Strategic Breadth on New Venture Performance and Strategy Content. *Strategic Management Journal*, 15(7), 537-554.

McKinstry, S. (1996) Designing the Annual Reports of Burton PLC from 1930 to 1994. *Accounting, Organizations and Society*, 21(1), 89-111.

McMillan, K.P. (2004) Trust and the Virtues: A Solution to the Accounting Scandals? *Critical Perspectives on Accounting*, 15(6), 943–53.

Menard, S.W. (1995) *Applied Logistic Regression Analysis*. CA: Thousand Oaks, Sage Publications Ltd.

Menard, S. W. (2010) *Logistic Regression: From Introductory to Advanced Concepts and Applications*. USA: Sage Publications Ltd.

Merchant, K. A. (2010) Paradigms in Accounting Research: A View from North America. *Management Accounting Research*, 21(2), 116-120.

Miles, M. B., Huberman, A. M. & Saldaña, J. (2014) *Qualitative Data Analysis: A Methods Sourcebook*, 3rd edition. Sage Publications Inc.

Miller, P. B. & O'Leary, T. (1987) Accounting and the Construction of the Governable Person. *Accounting Organization and Society*, 12(3), 235-265.

Mintzberg, H. (1983) *Power in and around Organizations*. Englewood Cliffs, NJ: Prentice-Hall.

Moberg, D. J. (1997) On Employee Vice. *Business Ethics Quarterly,* 7(4), 41-60.

Mock, H. (1992) *Financiële public relations/investor relations:naar betere betrekkingen tussen bedrijf.* beurs en belegger. Deventer: Kluwer Bedrijfswetenschappen.

Modell, S. (2010) Bridging the Paradigm Divide in Management Accounting Research: The Role of Mixed Methods Approaches. *Management Accounting Research*, 21(2), 124-129.

Mohamed Yusof, K., Ahmad Khair, A.H. & Simon, J. (2015) Fraudulent Financial Reporting: An Application of Fraud Models to Malaysian Public Listed Companies. *The Macrotheme Review*, 4(3), 126-145.

Mohd-Ali, S., Mohd Salleh, N. & Hassan, M. S. (2010) Ownership Structure and Earnings Management in Malaysian Listed Companies: The Size Effect. *Asian Journal of Business and Accounting,* 1(2), 89-116.

Mohd-Saleh, N., Mohd-Iskandar, T. & Rahmat, M. M. (2005) Earnings Management and Board Characteristics: Evidence from Malaysia. *Jurnal Pengurusan,* 24(4), 77-103.

Mohd-Saleh, N., Mohd-Iskandar, T. & Rahmat, M. M. (2007) Audit Committee Characteristics and Earnings Management: Evidence from Malaysia. *Asian Review of Accounting*, 15(2), 147–163.

Mohd-Zawawi, S. N. H., Jusoff, K., Abdul Rahman, R. & Muhd Idris, K. (2008) Behavioural Intention for Fraudulent Reporting Behaviour. *Asian Social Science,* 4(7), 43-47.

Morgan, G., & Smircich, L. (1980) The Case for Qualitative Research. *Academy of Management Review*, 5(4), 491-500.

Moriarty, G. B. & Livingston, P.B. (2001) Quantitative Measures of the Quality of Financial Reporting. *Financial Executive,* 17(1), 53-56.

Moulton, B. R. (1986) Random Group Effects and the Precision of Regression Estimates. *Journal of Econometrics*, 32(3), 385-397.

Moyes, G. D., Mohd Din, H. F. & Omar, N. (2009) The Effectiveness of the Auditing Standards to Detect Fraudulent Financial Reporting Activities in Financial Statement Audits in Malaysia. *International Business & Economics Research Journals,* 8(9), 1-17.

Mulder, M. (1977) *The Daily Power Game.* Leiden, Netherlands: Martinus Nijhoff.

Murdock, H. (2008) The Three Dimensions of Fraud. *Internal Auditor,* 65(4), 81-83.

Myers, J.L., Myers, L.A. & Palmrose, Z.V. (2004) *Mandatory Auditor Rotation: Evidence from Restatements*. Working paper, University of Southern California.

Myers, M.D. (2008) *Qualitative Research in Business & Management*. Sage Publications Ltd.

Myers, R. (1990) *Classical and Modern Regression with Applications*. Belmont, Calif: Duxbury Press.

National Commission on Fraudulent Financial Reporting (1987) *Report of the National Commission on Fraudulent Financial Reporting*. New York: American Institute of Certified Public Accountants.

Neimark, M. D. & Tinker, A. M. (1986) The Social Construction of Management Control Systems. *Accounting Organizations and Society*, 6(3), 369-396.

Nixon, A. (2004) Special Reports: FTSE 100 Auditors' Survey - Big Four Defend Non-Audit Earnings. *Accountancy*, 134(1333), 34–5.

Nyaw, M. & Ng, J. (1994) A Comparative Analysis of Ethical Beliefs: A Four Country Study. *Journal of Business Ethics*, 13(7): 543-555.

Olazabal, A. M. & Almer, E. D. (2001) Independence and Public Perception: Why We Need to Care. *Journal of Accountancy*, 191(4), 69-70.

Omar, N., Koya, R. K., Sanusi, Z. M., & Shafie, N. A. (2005) Financial Statement Fraud: A Case Examination Using Beneish Model and Ratio Analysis. *Indicators*, 5(2), 184-186.

Omar, N.B. & Din, H. F.M. (2010) Fraud Diamond Risk Indicator: An Assessment of Its Importance and Usage. *Science and Social Research (CSSR), 2010 International Conference*.

Onwuegbuzie, A. J., Collins, K. M. T., Leech, N. L., Dellinger, A. B. & Jiao, Q. G. (2010) A Meta-framework for Conducting Mixed Research Syntheses for Stress and Coping Researchers and Beyond. In G. S. Gates, W. H. Gmelch, & M. Wolverton, series editions & K. M. T. Collins, A. J. Onwuegbuzie, & Q. G. Jiao, volume editions, *Toward a Broader Understanding of Stress and Coping: Mixed Methods Approaches,* 169-211. The Research on Stress and Coping in Education Series, volume 5. Charlotte, NC: Information Age.

Othman, H. B. & Zeghal, D. (2006) A Study of Earnings Management Motives in the Anglo-American and Euro-Continental Accounting Models: The Canadian and French Cases. *The International Journal of Accounting,* 41(4), 406-435.

Overton, R. C. (1998) A Comparison of Fixed Effects and Mixed (Random Effects) Models for Meta-analysis Tests of Moderator Variable Effects. *Psychological Methods*, 3(3), 354–379.

Palmrose, Z. & Scholz, S. (2000) *Restated Financial Statements and Auditor Litigation*. Working paper, University of Southern California. Available at SSRN 248455.

Palmrose, Z. & Scholz, S. (2004) The Circumstances and Legal Consequences of Non-GAAP Reporting: Evidence from Restatements. *Contemporary Accounting Research 21*, 139-190.

Palshikar, G. (2002) The Hidden Truth on the List of Business - Critical Applications, Fraud Detection is Moving Ever Higher. Will It Become the Next Killer App for Data Analytics? *Intelligent Enterprise,* 5(1), 46-63.

Parker, L. D. (2007) Financial and External Reporting Research: The Broadening Corporate Governance Challenge. *Accounting and Business Research*, 37(1), 39-54.

Patton, M. Q. (1990) *Qualitative Evaluation and Research Methods*, 1st edition. Newbury Park, CA: Sage Publications Ltd.

Persons, O. (1995) Using Financial Statement Data to Identify Factors Associated with Fraudulent Financial Reporting. *Journal of Applied Business Research*, 11(3), 38-46.

Pettigrew, A. M. (1992) On Studying Managerial Elites. *Strategic management journal,* 13, (S2), 163-182.

Pfeffer, J. (1981) *Power in Organizations.* Marshfield, MA: Pittman.

Pincus, K. V. (1989) The efficacy of a Red Flags Questionnaire for Assessing the Possibility of Fraud. *Accounting, Organizations and Society,* 14(1), 153-163.

Press, E. G. & Weintrop, J. B. (1990) Accounting-based Constraints in Public and Private Debt Agreements: Their Association with Leverage and Impact on Accounting Choice. *Journal of Accounting and Economics,* 12(1), 65-95.

Preston, A. M., Wright, C. & Young, J. J. (1996) Imaging Annual Reports. *Accounting, Organizations and Society*, 21(1), 113-137.

Prosser, W. L. (1971) *Handbook of the Law of Torts*. St Paul, Minn: West Publishing Co.

Rae, K. & Subramaniam, N. (2008) Quality of Internal Control Procedures: Antecedents and Moderating Effect on Organisational Justice and Employee Fraud. *Managerial Auditing Journal,* 23(2), 104-124.

Ralston, D.A., Giacalone, R. A. & Terpstra, R. H. (1994) Ethical Perceptions of Organisational Politics: A Comparative Evaluation of American and Hong Kong Managers. *Journal of Business Ethics*, 13(12): 989-999.

Ralston, D.A., Holt, D.H., Terpstra, R.H. & Yu, K.-C. (1997) The Impact of National Culture and Economic Ideology on Managerial Work Values: A study of the United States, Russia, Japan, and China. *Journal of International Business Studies*, 28 (Spring), 177–207.

Ramazani, M. & Atani, H. R. (2010) Iranian Accountants' Conception of the Prevention Methods of Fraud and Offering Some Recommendations to Reduce Fraud in Iran. *Global Journal of Management and Business Research,* 10(6), 31-45.

Ramos, M. (2003) Auditors' Responsibility for Fraud Detection. *Journal of Accountancy,* 195(1), 28-36.

Raudenbush, S. W. (1994) Random Effects Models. In H. Cooper & L. V. Hedges (Eds.) *The Handbook of Research Synthesis*. New York: Russell Sage Foundation.

Ravisankar, P., Ravi, V., Raghava Rao, G. & Bose, I. (2011) Detection of Financial Statement Fraud and Feature Selection using Data Mining Techniques. *Decision Support Systems,* 50(2), 491-500.

Rezaee, Z. (2002) *Financial Statement Fraud: Prevention and* Detection, 1st edition. John Wiley & Sons.

Rezaee, Z. (2005) Causes, Consequences, and Deterrence of Financial Statement Fraud. *Critical Perspectives on Accounting,* 16(3), 277-298.

Roberts, J. & Scapens, R. W. (1985) Accounting Systems and Systems of Accountability - Understanding Accounting Practices in their Organisation Contexts. *Accounting Organization and Society*, 10(4), 443-456.

Rock, K. (1986) Why New Issues are Underpriced. *Journal of Financial Economics,* 15(1), 187-212.

Romney, M. B., Albrecht, W. S. & Cherrington, D. J. (1980) Auditors and the Detection of Fraud. *Journal of Accountancy,* 149(5), 63-69.

Ronen, J. (2002) Post-Enron Reform: Financial Statement Insurance, and GAAP Revisited. *Stanford Journal of Law, Business and Finance*, 8(1), 1-30.

Ruankaew, T. (2013) The Fraud Factors. *International Journal of Management & Administrative Sciences,* 2(2), 1-5.

Ryan, B., Scapens, R.W. & Theobald, M. (2003) *Research Method & Methodology in Finance & Accounting*, 2nd edition. Thomson Learning.

Salazar, A. & Raggiunti, J. (2014) Why Does Executive Greed Prevail in the United States and Canada but Not in Japan? The Pattern of Low CEO Pay and High Worker Welfare in Japanese Corporations. *American Journal of Comparative Law*, 10(16), 2-35.

Salter, S.B. & Niswander, F. (1995) Cultural Influence on the Development of Accounting Systems Internationally: A Test of Gray's (1988) Theory. *Journal of International Business Studies*, 26 (2), 379–397.

Sarantakos, S. (1993) *Social Research*, 1st edition. South Melbourne: Macmillan.

Saunders, M.N., Lewis, P. & Thornhill, A. (2009) *Research Methods for Business Students*, 5th edition. Harlow: Pearson Education.

Schilit, H. (1993) *Financial Shenanigans: How to Detect Accounting Gimmicks and Fraud in Financial Reports.* New York: McGraw-Hill.

Schipper, K. (1989) Commentary on Earnings Management. *Accounting Horizons,* 3(4), 91-102.

Schmidt, F. L., Oh, I. S. & Hayes, T. L. (2009) Fixed versus Random-effects Models in Meta-analysis: Model Properties and an Empirical Comparison of Differences in Results. *British Journal of Mathematical and Statistical Psychology*, 62(1), 97-128.

Schmidt, R. (2013) *Negative Leverage and Why Debt Doesn't Always Improve Yield*. Available online: http://www.propertymetrics.com/blog/2013/11/21/negative-leverage/. [Accessed 10/9/2014].

Schulze, R. (2004) *Meta-analysis: A Comparison of Approaches*. Toronto: Hogrefe & Huber.

Schutz, A. (1967) *The Phenomenology of the Social World*. Translated by George Walsh and Frederick Lehnert. Evanston, Ill.: Northwestern University Press.

Schutz, A. (1973) Concept and Theory Formation in the Social Sciences. *In Maurice Natanson* (Ed.), Collected Papers, 1, The Hague: Martinus Nijhoff, 48-66.

Schwartz, M. (2001) The Nature of the Relationship between Corporate Codes of Ethics and Behaviour. *Journal of Business Ethics*, 32(2), 247-262.

Securities Commission Malaysia (2009) *New Framework for Listings and Equity Fund-Raisings*. Bukit Kiara, Kuala Lumpur.

Securities Commission Malaysia (2012) *Malaysian Code on Corporate Governance 2012*. Bukit Kiara, Kuala Lumpur.

Securities Commission Malaysia (2013a) *Legal Framework: Acts & Regulations*. Available online: http://www.ssm.com.my/en/services_acts_regulations/. [Accessed 15/12/2013].

Securities Commission Malaysia (2013b) *Enforcement: Actions*. Available online: http://www.sc.com.my/enforcement/actions/. [Accessed 16/12/2013].

Securities Commission Malaysia (2014) *About Us: What We Do*. Available online: http://www.sc.com.my/about-us/what-we-do/ [Accessed 22/3/2014].

Securities Commission Malaysia (2015) *Press Release: Malaysian Capital Market grew to RM 2.76 trillion in 2014*. Available online: http://www.sc.com.my/post_archive/malaysian-capital-market-grew-to-rm2-76-trillion-in-2014/. [Accessed 16/03/2015].

Securities Commission Malaysia Act 1993, (2015) Act 498, (Incorporating latest amendment – Act A1489/2015), Bukit Kiara, Kuala Lumpur.

Securities Commission Malaysia (2016) *Enfoncement: Actions*. Available online: http://www.sc.com.my/enforcement/actions/. [Accessed 16/03/2016].

Shadish, W. R. & Haddock, C. K. (1994) Combining Estimates of Effect Size. In H. Cooper & L. V. Hedges (Eds.), *The Handbook of Research Synthesis*. New York: Russell Sage Foundation, 261-281.

Sheenan, K. (2009) Regulatory Framework for Executive Remuneration in Australia. *The Sydney L. Rev*., 31(1), 273-308.

Sheehan, K. M. (2012) *The Regulation of Executive Compensation: Greed, Accountability and Say on Pay*. Edward Elgar Publishing.

Silverstone, H. & Sheetz, M. (2004) *Forensic Accounting and Fraud Investigation for Non-Experts*. Hoboken, New Jersey: John Wiley & Sons.

Simon, J. (2001) Ethical Perceptions of Earnings Management in Malaysia, Singapore, Hong Kong, Thailand, and the UK. *Asian Review of Accounting*, 9(1), 1-28.

Singh, H. (1990) Management Buyouts: Distinguishing Characteristics and Operating Changes Prior to Public Offering. *Strategic Management Journal*, 11(4), 111-129.

Skousen, C. & Wright, C. (2006) Contemporaneous Risk Factors and the Prediction of Financial Statement Fraud. *Available at SSRN 938736*.

Skousen, C. J., Smith, K. R. & Wright, C. J. (2009) Detecting and Predicting Financial Statement Fraud: The Effectiveness of the Fraud Triangle and SAS No. 99. *Advances in Financial Economics,* 13(1), 53-81.

Slife, B. D. & Williams, R. N. (1995) *What's Behind the Research? Discovering Hidden Assumptions in the Behavioural Sciences*. Thousand Oaks, CA: Sage Publications Ltd.

Smith, C. A. (1991) *The Self, Appraisal, and Coping*. In C. R. Snyder & D. R. Forsyth .Handbook of Social and Clinical Psychology: The Health Perspective. New York: Pergamon Press.

Smith, M., Omar, N., Sayd Idris, S. I. Z. & Baharuddin, I. (2005) Auditors' Perception of Fraud Risk Indicators: Malaysian Evidence. *Managerial Auditing Journal,* 20(1), 73-85.

Smith, R. G. (1999) Fraud and Financial Abuse of Older Persons. *Current Issues in Crim. Just.,* 11(3), 273-291.

Smithson, M. (1985) Towards a Social Theory of Ignorance. *Journal for the Theory of Social Behaviour*, 15(2), 151-172.

Sorenson, J. E., Grove, H. D. & Selto, F. H. (1983) Detecting Management Fraud: An Empirical Approach. *Symposium on Auditing Research*, 5(11), 73-116.

Spathis, C. T. (2002) Detecting False Financial Statements using Published Data: Some Evidence from Greece. *Managerial Auditing Journal,* 17(4), 179-191.

Spearman, C. (1910) Correlation Calculated from Faulty Data. *British Journal of Psychology*, *1904-1920*, 3(3), 271-295.

Spollen, A. L. (1997) *Corporate Fraud: The Danger from Within*. Oak Tree Press.

St. Pierre, K. & Anderson, J. A. (1984) An Analysis of the Factors Associated with Lawsuits against Public Accountants. *Accounting Review*, 59(2), 242-263.

Stanton, P. & Stanton, J. (2002) Corporate Annual Reports: Research Perspectives Used. *Accounting, Auditing & Accountability Journal,* 15(4), 478-500.

Statement of Financial Accounting Concepts No.1 (1978) *Objectives of Financial Reporting by Business Enterprises.* FASB, 37.

Statement of Financial Accounting Concepts No.5 (1984) *Recognition and Measurement in Financial Statements of Business Enterprises*. FASB, 13.

Statement of Financial Accounting Concepts No.6 (1985) *Elements of Financial Statements, a Replacement of FASB Concepts Statement No. 3*. FASB, 25, 35, 49, 78, 80, 82 & 83.

Stice, J. (1991) Using Financial and Market Information to Identify Pre-engagement Market Factors Associated with Lawsuits against Auditors. *The Accounting Review,* 66(3), 516-533.

Stuart, T. E. (2000). Inter-organizational Alliances and the Performance of Firms: A Study of Growth and Innovation Rates in a High-technology Industry. *Strategic Management Journal*, 21(8), 791-811.

Stulz, R.M. & Williamson, R. (2003) Culture, Openness, and Finance. *Journal of Financial Economics*, 70(3), 313–349.

Summers, S. L. & Sweeney, J. T. (1998) Fraudulently Misstated Financial Statements and Insider Trading: An Empirical Analysis. *Accounting Review*, 73(1), 131-146.

Sunder, S. (1973) Relationship between Accounting Changes and Stock Prices: Problems of Measurement and Some Empirical Evidence. *Journal of Accounting Research*, 1-45.

Sutherland, E. H. & Crime, W. C. (1949) *White Collar Crimes*, 1st edition. New York: Holt.

Teddlie, C. & Tashakkori, A. (2009) *Foundations of Mixed Methods Research*. Thousand Oaks, CA: Sage Publications Ltd.

Terdpaopong, K. & Trimek, J. (2015) Financial Scandal: The Case of King Mongkut's Institute of Technology Ladkrabang, Thailand. *Procedia Economics and Finance*, 28(1), 39-45.

The Auditing Practices Board (2001) *Aggressive Earnings Management*. London: CCAB Limited.

The Economist (2008) *Malaysia's Election: Political Tsunami?*. Available online: http://www.economist.com/node/10833119/. [Accessed 10/03/2016].

The Guardian (2016) *Malaysia: Directors of Scandal-hit 1MDB State Investment Fund Offer Mass Resignation.* Available online: http://www.theguardian.com/world/2016/apr/07/malaysia-directors-scandal-1mdb-state-investment-fund-mass-resignation-najib-razak/. [Accessed 09/04/2016].

The Hofstede Centre (2015) *Cultural Tools: Country Comparison.* Available online: http://geert-hofstede.com/malaysia.html/ [Accessed 29/11/2015].

The News Straits Times (2016) *PAC Results May Give Najib's Critics More Ammo.* Available online: http://www.straitstimes.com/asia/se-asia/pac-results-may-give-najibs-critics-more-ammo/ [Accessed 14/04/2016].

Tinker, A. M. (1980) Towards a Political Economy of Accounting: an Empirical Illustration of the Cambridge Controversies. *Accounting Organizations and Society*, 5(1), 147-160.

Tinker, A. M., Merino, B. D. & Neimark, M. D. (1982) The Normative Origins of Positive Theories: Ideology and Accounting Thought. *Accounting Organization & Society*, 7(2), 167-200.

Tomkins, C. & Groves, R. (1983) The Everyday Accountant and Researching His Reality. *Accounting, Organizations and Society*, 8(4), 361-374.

Tomkins, C. R. (1982) The Use of Accounting Information in a Social Services Department and Police Force: A Comparison of Two Case Studies. *Discussion Paper*, School of Management University of Bath.

Tomkins, C. R. & Colville, I. (1984) The Role of Accounting in Local Government: Some illustrations from Practice, in Hopwood, A. G. & Tomkins, C.R. (eds) *Issues in Public Sector Accounting*. Oxford: Phillip Allan, 87-105.

Tourism Malaysia. (2014) *States of Malaysia*. Available online: http://www.tourism.gov.my/en/Master/Web-Page/ [Accessed 19/1/2014].

Transparency International (2016) *Corruption Perception Index 2015: Results*. Available online: http://www.transparency.org/cpi2015#results-table/ [Accessed 30/1/2016].

Tugas, F. C. (2012) Exploring a New Element of Fraud: A Study on Selected Financial Accounting Fraud Cases in the World. *American International Journal of Contemporary Research*, 2(6), 112-121.

United States General Accounting Office (GAO) (2002) *Financial Restatements,*

Vaivio, J. & Sirén, A. (2010). Insights into Method Triangulation and "Paradigms" in Interpretive Management Accounting Research. *Management Accounting Research*, 21(2), 130-141.

Vanasco, R. R. (1998) Fraud Auditing. *Managerial Auditing Journal,* 13(1), 4-71.

Visser, W. & Sunter, C. (2002) Beyond Reasonable Greed: Why Sustainable Business is a Much Better Idea, *Human & Rousseau*, 3(1), 24-36.

Vona, L. W. (2008) *Fraud Risk Assessment: Building a Fraud Audit* Program, 1st edition. John Wiley & Sons.

Watts, R. L. & Zimmerman, J. L. (1986) *Positive Accounting Theory*, 1st edition. Prentice Hall.

Watts, R. L. & Zimmerman, J. L. (1990) Positive Accounting Theory: A Ten Year Perspective. *Accounting Review*, 4(2), 131-156.

Weber, M. (1949) *The Methodology of the Social Sciences*, 1st edition. New York: Free Press.

Weinzimmer, L. G., Nystrom, P. C. & Freeman, S. J. (1998) Measuring Organizational Growth: Issues, Consequences and Guidelines. *Journal of Management*, 24(2), 235-262.

Weirich, T. R. & Reinstein, A. (1988) *Accounting & Auditing Research: A Practical Guide.* South-Western Publishing Company.

Weirich, T. R. & Reinstein, A. (1999) *Accounting & Auditing Research: A Practical Guide*. South-Western College Pub.

Wells, J. T. (1997) *Occupational Fraud and Abuse*, 1st edition. Obsidian Publishing Company.

Wells, J. T. (2001) Why Employees Commit Fraud. *Journal of Accountancy*, 191(2), 89-91.

White, R. W. (1959) Motivation Considered: The Concept of Competence. *Psychological Review,* 66(5), 297-333.

Wilcoxon, F. (1945) Individual Comparisons by Ranking Methods. *Biometrics Bulletin*, 1(6), 80-83.

Wilks, T. J. & Zimbelman, M. F. (2004) Using Game Theory and Strategic Reasoning Concepts to Prevent and Detect Fraud. *Accounting Horizons*, 18(3), 173-184.

Wilson, A., Davies, M., Curtis, M. & Wilkinson-Riddle, G. (2001). *UK & International GAAP*. 7th edition. LLP: London. Ernst & Young.

Wilson, M. & Shailer, G. (2007) Accounting Manipulations and Political Costs: Tooth & Co Ltd, 1910–1965. *Accounting and Business Research,* 37(4), 247-266.

Witt, R., Clarke, A. & Fielding, N. (1999) Crime and economic activity. A panel data approach. *British Journal of Criminology*, 39(3), 391-400.

Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data*, 1st edition. MIT press.

Wolfe, D. T. & Hermanson, D. R. (2004) The Fraud Diamond: Considering the Four Elements of Fraud. *The CPA Journal*, 74(12), 38-42.

Wright, A. & Ashton, R.H. (1989) Identifying Audit Adjustments with Attention-directing Procedures. *The Accounting Review,* 64(4), 710-728.

Yin, R. K. (2003) *Case Study Research: Design and Methods*, 3rd edition. London: Sage Publications Ltd.

Zahra, S. A., Priem, R. L. & Rasheed, A. A. (2005) The Antecedents and Consequences of Top Management Fraud. *Journal of Management,* 31(6), 803-828.

Zaman, M., Hudaib, M. & Haniffa, R. (2011) Corporate Governance Quality, Audit Fees and Non-audit Services Fees. *Journal of Business Finance & Accounting*, 38(1-2), 165-197.

Zawawi, M. & Hayati, S. N. (2010) *Antecedents of Behavioural Intention of Fraudulent Financial Reporting: Malaysian Evidence,* Volume 1. Universiti Teknologi MARA.

Zmijewski, M. E. (1984) Methodological Issues Related to the Estimation of Financial Distress Prediction Models. *Journal of Accounting Research,* 22 (Suppl), 59-82.

Power Distance Index (PDI)

Power distance is the extent to which the less powerful members of organisations and institutions accept and expect that power is distributed unequally." Cultures that endorse low power distance expect and accept power relations that are more consultative or democratic. Power Distance Index (PDI) has been using as a measurement tool in the social science researches that aim to make comparisons across different countries or cultures. The index range score between 1 (lowest) and 120 (highest) is being used to measure the gap. PDI calculations have been developed by The Hofstede Centre. The main goal of The Hofstede Centre is to offer high quality education in the field of culture and management based on academic research and practical experience.
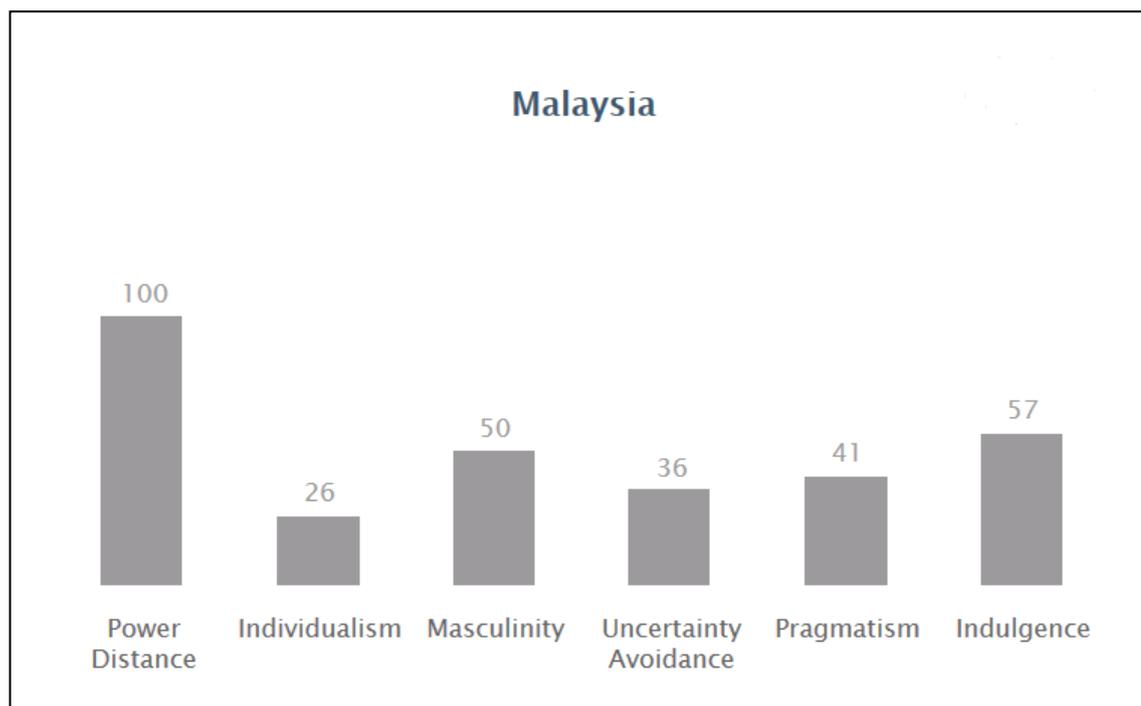
PDI and Other Cultural Dimension Indexes for Malaysia (Sources: the Hofstede Centre[51]).

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[51] As at 11th January 2016.

<u>Corruption Perception Index (CPI)</u>

The Corruption Perceptions Index (CPI) is measured by Transparency International (TI), which present in more than 100 countries and territories. The TI's objective is to view a world in which government, business, civil society and the daily lives of people are free of corruption. CPI ranks countries and territories based on how corrupt their public sector is perceived to be. A country or territory's score indicates the perceived level of public sector corruption on a scale of 0 - 100, where 0 means that a country is perceived as highly corrupt and 100 means it is perceived as very clean. A country's rank indicates its position relative to the other countries and territories included in the index. First launched in 1995, the CPI has been widely credited with putting the issue of corruption on the international policy agenda. Recent statistics for 2015, which involve 168 countries and territories (including Malaysia) as compared to previous years are shown below.

Rank	Country/territory	2015 Score	2014 Score	2013 Score	2012 Score
50	Bahrain	51	49	48	51
50	Croatia	51	48	48	46
50	Hungary	51	54	54	55
50	Slovakia	51	50	47	46
54	Malaysia	50	52	50	49
55	Kuwait	49	44	43	44
56	Cuba	47	46	46	48
56	Ghana	47	48	46	45
58	Greece	46	43	40	36
58	Romania	46	43	43	44
60	Oman	45	45	47	47
61	Italy	44	43	43	42
61	Lesotho	44	49	49	45
61	Montenegro	44	42	44	41
61	Senegal	44	43	41	36
61	South Africa	44	44	42	43

Formal Approval from HUBS Ethics Committee

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21 October 2015

Dear Khairusany

Re: Fraudulent Financial reporting: an application of fraud models to Malaysian public-listed companies (plcs)

Thank you for your research ethics application.

I am pleased to inform you that on behalf of the Business School Research Ethics Committee at the University of Hull, Dr Joanne Cook has approved your application on 19 October 2015.

I wish you every success with your research.

Yours sincerely,

Hilary Carpenter
Secretary,
Research Ethics Committee

Question	Objective	Remarks	Hypothesis
1. Can you tell me a little bit about your background (name, qualifications and current position)?	To confirm the interviewee's eligibility (right person who can give critical opinion for this interview).		Not Applicable
2. How long have you been appointed/working in/for this company?	To measure the interviewee's working experience.		Not Applicable
3. What is the biggest challenge within corporate governance context from the perspective of financial reporting?	To get general thought on the biggest challenge from each of the interviewee as regards to financial reporting.		Not Applicable
4. Have you ever encountered any fraudulent scenario involving financial reporting? What are the key factors that lead towards that kind of scenario?	To get critical/key factors that lead towards Fraudulent Financial Reporting (FFR) from the interviewee perspective.	This is an inductive question (while most of the questions are deductive). The idea of this question is to start the interview session with a free-flow and ample scenario for the interviewee to share his/her experience or knowledge on any FFR scenario and key factors involved.	Not Applicable
5. In your opinion, what is the most effective financial ratio from Malaysian PLCs' annual reports that can be used to measure financial performance?	To get interviewee's opinion on the most effective financial ratio to measure Malaysian PLCs' financial performance.	This research uses 'Growth' to measure Malaysian PLCs' performance. There is possibility that the interviewee might suggest other financial ratio that is most effective to measure performance for Malaysian PLCs.	H1a: High growth in Malaysian PLCs indicates higher tendency towards the likelihood of FFR.
6. In your opinion, what is the most effective financial ratio from Malaysian PLCs' annual reports that can be used to measure financial pressure?	To get interviewee's opinion on the most effective financial ratio to measure Malaysian PLCs' financial pressure.	This research uses 'Leverage' to measure Malaysian PLCs' performance. There is possibility that the interviewee might suggest other financial ratio that is most effective to measure financial pressure for Malaysian PLCs.	H1b: High leverage in Malaysian PLCs indicates higher tendency towards the likelihood of FFR.

Question	Objective	Remarks	Hypothesis
7. Do you think that incentive can lead executives or non-executives in Malaysian PLCs to manipulate financial reporting against the regulations set by Bursa Malaysia and Securities Commission Malaysia (SC)? If 'yes', what is/are the example/(s)?	To get interviewee's opinion whether 'incentive' is one of the suitable fraud-risk factors in detecting the likelihood fraudulent financial reporting (FFR) among Malaysian PLCs.	1. If the answer is 'yes', interviewee is expected to give example/(s). 2. The example/(s) is/are very important to compare common types of 'incentive' between the Malaysian context and Fraud Models (Fraud Triangle, Fraud Diamond & Crowe's Fraud Pentagon). 3. If the interviewee agree that 'incentive' as one of the suitable fraud-risk factors in detecting the likelihood of FFR among Malaysian PLCs, all Fraud Models are possibly suitable in Malaysia at this stage. 4. If the interviewee disagree that 'incentive' as one of the suitable fraud-risk factors in detecting the likelihood of FFR, another fraud-risk factor which is 'pressure', can possibly suggest the suitability of the Fraud Models in Malaysia.	H1: Incentive/pressure indicates higher tendency towards the likelihood of FFR among Malaysian PLCs
8. Do you think that pressure can lead executives or non-executives in Malaysian PLCs to manipulate financial reporting against the regulations set by Bursa Malaysia and SC? If 'yes', what is/are the example/(s)?	To get interviewee's opinion whether 'pressure' is one of the suitable fraud-risk factors in detecting the likelihood FFR among Malaysian PLCs.	1. If the answer is 'yes', interviewee is expected to give example/(s). 2. The example/(s) is/are very important to compare common types of 'pressure' between the Malaysian context and Fraud Models (Fraud Triangle, Fraud Diamond & Crowe's Fraud Pentagon). 3. If the interviewee agree that 'pressure' as one of the suitable fraud-risk factors in detecting the likelihood of FFR among Malaysian PLCs, all Fraud Models are possibly suitable in Malaysia at this stage.	H1: Incentive/pressure indicates higher tendency towards the likelihood of FFR among Malaysian PLCs

Question	Objective	Remarks	Hypothesis
		4. If the interviewee disagree that 'pressure' and 'incentive' as one of the suitable fraud-risk factors in detecting the likelihood of FFR among Malaysian PLCs, all other fraud-risk factors will be analysed independently, which might suggest that the existing fraud-risk factors in Fraud Models are not suitable to detect the likelihood of FFR in the Malaysian context. 5. Interviewee is expected to suggest new fraud-risk factor/(s) that he/she believe more suitable in detecting the likelihood of FFR among Malaysian PLCs.	
9. Do you think that current BODs composition [outside members (Independent Non-Executive Directors) as compared to inside members (Executive Directors)] has a significant effect in deliberating major decisions for this company? Why do you think this is a case?	To get interviewee's opinion on the effectiveness of current composition of BODs in the company (outside members as compared to total number of BODs) in deliberating major decisions.	1. This question measures tendency towards the likelihood of FFR with 'significant effect in deliberating major decisions for the company'. 2.'Significant effect in deliberating major decisions for the company' explains the influence level between outside and inside members in deliberating major decisions for the company. 3. Interviewee's respond on this question will provide clearer direction whether there is any dispute between the two parties in deliberating major decisions for the company or otherwise. 4. Any dispute or common arguments between them may suggest which party is controlling/dominating BODs.	H2a: Less percentage of outside members (Independent Non-Executive Directors) in Board of Directors (BODs) indicates higher tendency towards the likelihood of FFR

Question	Objective	Remarks	Hypothesis
10. Based on this composition, do you think that BODs of this company have effectively reached satisfactory decisions for the company, especially on behalf of the shareholders? Could you please elaborate?	To get interviewee's opinion on shareholders' perceptions on any decisions made by the BODs.	1. Shareholders' perceptions are one of the key indicators in measuring the effectiveness of the BODs. 2. If the shareholders satisfy with BODs' decisions, the current composition between outside and inside members is seemed to be right. This situation can suggest that composition of BODs is not an indicator towards the likelihood of FFR. 3. However, if the shareholders are not satisfied with most of the BODs' decisions, H3 is likely to be accepted as the hypothesis for this research.	H2a: Less percentage of outside members (Independent Non-Executive Directors) in Board of Directors (BODs) indicates higher tendency towards the likelihood of FFR
11. If a Malaysian PLC changes a Head of Internal Auditor (HIA) frequently, do you think there is any significant implication? In general, do you think that frequent changes of HIA have an effect on the company's performance, particularly on the way of preparing financial reporting for the company?	To get interviewee's opinion whether the frequent changes of HIA have an effect on the Malaysian PLCs' performance, particularly on the way of preparing financial reporting for the company.	1. If the answer is 'yes', there are 2 possibilities that may suggest the frequent changes: a. The HIA is incompetence in preparing financial reporting as demanded by the top management; or b. The HIA disobeys top management's direction to prepare financial reporting according to their will because he/she feels that something is not right. 2. Both of the possibilities have positive or negative reflects to the company. Interviewee's answer will confirm these possibilities. However, interviewee may provide different opinion on this matter.	H2b: High turnover frequency of Head of Internal Auditor (HIA) indicates higher tendency towards the likelihood of FFR.

Question	Objective	Remarks	Hypothesis
12. In your opinion, what are the common factors that resulting frequent changes of HIA among Malaysian PLCs?	To get interviewee's opinion on the common factors that resulting frequent changes of HIA among Malaysian PLCs.	1. Interviewee's answer may suggest a few factors that might probably related to the likelihood of FFR. 2. On the other hand, the answer might also suggest that none of these factors are actually related to the likelihood of FFR, which is most likely related to the HIA incompetence or lack of expected skills.	H2b: High turnover frequency of Head of Internal Auditor (HIA) indicates higher tendency towards the likelihood of FFR.
13. Do you think that opportunity can lead executives or non-executives in Malaysian PLCs to manipulate financial reporting against the regulations set by Bursa Malaysia and SC? If 'yes', what is/are the example/(s)?	To get interviewee's opinion whether 'opportunity' is one of the suitable fraud-risk factors in detecting the likelihood FFR among Malaysian PLCs.	1. If the answer is 'yes', interviewee is expected to give example/(s). 2. The example/(s) is/are very important to compare common types of 'opportunity' between the Malaysian context and Fraud Models (Fraud Triangle, Fraud Diamond & Crowe's Fraud Pentagon). 3. If the interviewee agree that 'opportunity' (as well as 'incentive' and/or 'pressure') as one of the suitable fraud-risk factors in detecting the likelihood of FFR among Malaysian PLCs, all Fraud Models are possibly suitable in Malaysia at this stage. 4. If the interviewee disagree that 'opportunity' (altogether with 'incentive' and 'pressure') as one of the suitable fraud-risk factors in detecting the likelihood of FFR among Malaysian PLCs, all other fraud-risk factors will be analysed independently, which might suggest that the existing fraud-risk factors in Fraud Models are not suitable to detect the likelihood of FFR in the Malaysian context.	H2: Opportunity indicates higher tendency towards the likelihood of FFR among Malaysian PLCs

Question	Objective	Remarks	Hypothesis
		5. Interviewee is expected to suggest new fraud-risk factor/(s) that he/she believe more suitable in detecting the likelihood of FFR among Malaysian PLCs.	
14. A financial restatement is necessary when Bursa Malaysia determines that the previous financial statement contains a material inaccuracy. Do you think that historical financial restatements (HFRTs) can reflect on management integrity? Why do you think this is a case?	To get interviewee's opinion whether HFRTs can measure management integrity.	1. Management integrity is used to represent 'attitude', which is being measured through historical financial restatement times (HFRTs) 2. Interviewee may agree or disagree with this statement. 3. Interviewee's justification is important to find any other proxy variables that may replace HFRTs (if available).	H3a: High historical financial restatements times (HFRTs) indicate higher tendency towards the likelihood of FFR.
15. Do you think that executives and non-executives' attitude can be reflected on financial or non-financial data from Malaysian PLCs' annual reports? Why do you think this is a case?	To get interviewee's opinion on the possibility to measure 'attitude' through financial and non-financial data from the annual report.	1. If the answer is 'yes', interviewee will suggest financial or non-financial data that he/she thinks can be used as proxy variable to measure 'attitude'. 2. The suggestion will be taken into consideration during quantitative analysis approach. 3. If the answer is 'no', HFRTs will remain as the best option to measure 'attitude' via management integrity.	H3: Attitude/rationalisation indicates higher tendency towards the likelihood of FFR among Malaysian PLCs
16. Do you think that attitude can lead executives or non-executives in Malaysian PLCs to manipulate financial reporting against the regulations set by Bursa Malaysia and SC? If 'yes', what is/are the example/(s)?	To get interviewee's opinion whether 'attitude' is one of the suitable fraud-risk factors in detecting the likelihood FFR among Malaysian PLCs.	1. If the answer is 'yes', interviewee is expected to give example/(s). 2. The example/(s) is/are very important to compare common types of 'attitude' between the Malaysian context and Fraud Models (Fraud Triangle, Fraud Diamond & Crowe's Fraud Pentagon).	H3: Attitude/ rationalisation indicates higher tendency towards the likelihood of FFR among Malaysian PLCs

Question	Objective	Remarks	Hypothesis
		3. If the interviewee agree that 'attitude' (as well as 'incentive' and/or 'pressure' and 'opportunity') as one of the suitable fraud-risk factors in detecting the likelihood of FFR among Malaysian PLCs, all Fraud Models are possibly suitable in Malaysia at this stage. 4. If the interviewee disagree that 'attitude' (altogether with 'incentive', 'pressure' and 'opportunity') as one of the suitable fraud-risk factors in detecting the likelihood of FFR among Malaysian PLCs, all other fraud-risk factors will be analysed independently, which might suggest that the existing fraud-risk factors in Fraud Models are not suitable to detect the likelihood of FFR in the Malaysian context. 5. Interviewee is expected to suggest new fraud-risk factor/(s) that he/she believe more suitable in detecting the likelihood of FFR among Malaysian PLCs.	
17. What do you think changes of accounting policies might tell you about the company?	To get interviewee's opinion whether the changes in accounting policies are necessary or not.	1. If the answer is 'yes', there is possibility that H6 is likely to be rejected as the hypothesis for this research, depending on the interviewee's justification. 2. If the interviewee thinks that changes in accounting policies is necessary, there is high possibility that frequent changes in accounting policies do not indicate higher tendency towards the likelihood of FFR.	H3b: Frequent changes in PLCs' accounting policies indicate higher tendency towards the likelihood of FFR.

Question	Objective	Remarks	Hypothesis
		3. On the other hand, if the answer is 'no', there is possibility that H6 is likely to be accepted as the hypothesis for this research, which is also depending on the interviewee's justification.	
18. If a Malaysian PLC changes the accounting policies every year, would it come to you any concern? How about every 2 years (up to 10 years)? How frequent do you think changes of the accounting policies are necessary? Why do you think this is a case?	To get interviewee's opinion on the suitable period for the accounting policies to be changed. (i.e. The interviewee could possibly suggest 'in every 3 years' or 'in every 5 years', etc).	1. Interviewee's answer on this question is very useful to set the acceptable period for Malaysian PLCs to change their accounting policies. 2. Analysis on annual reports will be based on the suggested period. Any results beyond this period will be categorised into 'frequent changes in accounting policies'.	H3b: Frequent changes in PLCs' accounting policies indicate higher tendency towards the likelihood of FFR.
19. Rationalisation is a frame of mind or ethical character that allows individuals to intentionally commit dishonest actions and justify them. Do you think that rationalisation can lead executives or non-executives in Malaysian PLCs to manipulate financial reporting against the regulations set by Bursa Malaysia and SC? If 'yes', what is/are the example/(s)?	To get interviewee's opinion whether 'rationalisation' is one of the suitable fraud-risk factors in detecting the likelihood FFR among Malaysian PLCs.	1. If the answer is 'yes', interviewee is expected to give example/(s). 2. The example/(s) is/are very important to compare common types of 'rationalisation' between the Malaysian context and Fraud Models (Fraud Triangle, Fraud Diamond & Crowe's Fraud Pentagon). 3. If the interviewee agree that 'rationalisation' (altogether with 'incentive/pressure', 'opportunity' and 'attitude') as one of the suitable fraud-risk factors in detecting the likelihood of FFR among Malaysian PLCs, Fraud Triangle Model is likely suitable in Malaysia at this stage.	H3: Attitude/ rationalisation indicates higher tendency towards the likelihood of FFR among Malaysian PLCs

Question	Objective	Remarks	Hypothesis
		4. If the interviewee disagree that 'rationalisation' (altogether with 'incentive', 'pressure', 'opportunity' and 'attitude') as one of the suitable fraud-risk factors in detecting the likelihood of FFR among Malaysian PLCs, all other fraud-risk factors will be analysed independently, which might suggest that the existing fraud-risk factors in Fraud Models are not suitable to detect the likelihood of FFR in the Malaysian context. 5. Interviewee is expected to suggest new fraud-risk factor/(s) that he/she believe more suitable in detecting the likelihood of FFR among Malaysian PLCs.	
20. If a Malaysian PLC does not spell out its policy on doubtful debts and account receivable, do you think this is an issue? Can you elaborate further?	To get interviewee's opinion on the relationship between undeclared subjective judgements in annual report (such as policies on doubtful debts and account receivable) and FFR.	1. Interviewee is expected to share his/her thought on undeclared subjective judgements in annual report, whether they are related to FFR or not. 2. If the interviewee believe that there is possibility of FFR elements through undeclared actions, H7 is likely to be accepted as the hypothesis for this research. 3. On the other hand, if the interviewee disagree with this statement, H7 is likely to be rejected as the hypothesis for this research, depending on interviewee's justification.	H4a: Undeclared policies on doubtful debts and account receivable indicate higher tendency towards the likelihood of FFR.

Question	Objective	Remarks	Hypothesis
21. Do you think Malaysian PLCs are fully explained weaknesses of financial performance? Have you got any concern if such weaknesses have not explained?	To get interviewee's opinion on any possible way/(s) for Malaysian PLCs to minimise or hide weaknesses on financial performance in annual reports. (i.e. limited access on SPVs' financial reporting).	1. This research suggests SPVs as one of the potential mechanisms for Malaysian PLCs to minimise or hide weaknesses on PLCs' financial performance. Therefore, interviewee's opinion on his/her concern on this issue will provide clearer dimension for this research.	H4b: Limited access to Special Purpose Vehicles (SPVs') financial reports indicates higher tendency towards the likelihood of FFR.
22. Do you think that capability/competence can lead executives or non-executives in Malaysian PLCs to manipulate financial reporting against the regulations set by Bursa Malaysia and SC? If 'yes', what is/are the example/(s)?	To get interviewee's opinion whether 'capability/competence' is one of the suitable fraud-risk factors in detecting the likelihood FFR among Malaysian PLCs.	1. If the answer is 'yes', interviewee is expected to give example/(s). 2. The example/(s) is/are very important to compare common types of 'capability/competence' between the Malaysian context and Fraud Diamond as well as Crowe's Fraud Pentagon Model. 3. If the interviewee agree that 'capability/competence' (altogether with 'incentive/pressure', 'opportunity' and 'attitude/rationalisation') as one of the suitable fraud-risk factors in detecting the likelihood of FFR among Malaysian PLCs, Fraud Diamond Model is likely suitable in Malaysia at this stage. 4. If the interviewee disagree that 'capability/competence' as one of the suitable fraud-risk factors, Fraud Diamond and Crowe's Fraud Pentagon Model are likely not suitable in Malaysia. 5. Interviewee is expected to suggest new fraud-risk factor/(s) that he/she believe more suitable in detecting the likelihood of FFR among Malaysian PLCs.	H4: Capability/ competence indicates higher tendency towards the likelihood of FFR among Malaysian PLCs

Question	Objective	Remarks	Hypothesis
23. Do you think there is any implication of the same person being the Chief Executive Officer (CEO) and chairman of BODs? Why do you think this is a case?	To get interviewee's opinion of the same person being the Chief Executive Officer (CEO) and chairman of BODs or also known as 'CEO duality' in Malaysian PLCs.	1. The interviewee will give his/her thought on the advantages or disadvantages for practising CEO duality in Malaysian PLCs. 2. This thought are very important to see interviewee's direction, whether CEO duality is viewed as a positive move for Malaysian PLCs, or otherwise. 3. Interviewee's justification will probably suggest whether H9 is going to be accepted or rejected as the hypothesis for this research.	H5a: Chief Executive Officer (CEO) duality indicates higher tendency towards the likelihood of FFR.
24. There are certain requirements among the Malaysian PLCs to appoint a politician as the CEO or chairman of the BODs. Do you think there is any issue which follows from these practices?	To get interviewee's opinion on the appointment of a politician as the CEO or Chairman of BODs that might indicate total domination in making major decisions in Malaysian PLCs.	1. Interviewee's opinion on this matter is crucial since the BODs' chairman for one of the involved Malaysian PLCs for the interview sessions is a politician (Member of Parliament and State Assemblyman). 2. Interviewee might share his/her experience during BODs' meetings that have been chaired by a politician. 3. This question will capture interviewee's opinion on how he/she views 'dominate'/'overpower' in making major decisions for the company. 4. Interviewee's justification will decide whether H10 is likely to be accepted as the hypothesis for this research or not.	H5b: A Chief Executive Officer (CEO) and/or Chairman of BODs in Malaysian PLC who is also a politician indicates higher tendency towards the likelihood of FFR
25. Do you think that arrogance can lead Executives or Non-Executives in Malaysian PLCs to manipulate financial reporting against the regulations set by Bursa Malaysia and SC? If 'yes', what are the examples?	To get interviewee's opinion whether 'arrogance' is one of the suitable fraud-risk factors in detecting the likelihood FFR among Malaysian PLCs.	1. If the answer is 'yes', interviewee is expected to give example/(s). 2. The example/(s) is/are very important to compare common types of 'arrogance' between the Malaysian context and Crowe's Fraud Pentagon Model.	H5: Arrogance indicates higher tendency towards the likelihood of FFR among Malaysian PLCs

Question	Objective	Remarks	Hypothesis
		3. If the interviewee agree that 'arrogance' (altogether with 'incentive/pressure', 'opportunity', 'attitude/rationalisation' and 'capability/competence') as one of the suitable fraud-risk factors, Crowe's Fraud Pentagon Model is likely suitable in Malaysia at this stage. 4. If the interviewee disagree that 'arrogance' as one of the suitable fraud-risk factors, Crowe's Fraud Pentagon Model is likely not suitable in Malaysia. 5. Interviewee is expected to suggest new fraud-risk factor/(s) that he/she believe more suitable in the Malaysian context.	
26. In your opinion, which sections of financial reporting in Malaysian PLCs' annual report are more open to manipulation?	To get interviewee's opinion on sections of financial reporting in Malaysian PLCs' annual report which are more open to manipulation.	Respond from interviewee will indicate the focus area/sections in annual reports that are needed to be examined closely.	Not Applicable
27. Based on the culture and environment in Malaysia, what is the most critical factor that can lead Executives or Non-Executives in Malaysian PLCs to manipulate financial reporting against the regulations set by Bursa Malaysia and SC? Are there any other factors that you think might lead people to manipulate financial reporting (i.e. fraud)?	To get interviewee's opinion on the critical factor that can lead towards the likelihood of FFR among Malaysian PLCs.	1. The interview session ends with another inductive question. This question could be the most important resources to find new fraud-risk factor in detecting the likelihood of FFR among Malaysian PLCs. 2. Interviewee's justification will be based on the Malaysian culture and environment, which is totally different from the Western culture (where all Fraud Models are developed). 3. Therefore, interviewee's justification will determine the right direction for this research.	To discover additional Hypotheses and Sub-Hypotheses (if recommended by the interviewees).

Interview Themes

Question 1	Can you tell me a little bit about your background (qualifications and current position)?
Objective	To confirm the interviewee's eligibility (right person who can give critical opinion for this interview)
Interviewee A	Interviewee A is the Head of State Government Officers, who is also a member of BODs in a Malaysian PLC. He obtained Master Degree in Human Resource Management.
Interviewee B	Interviewee B is a CEO for a Malaysian PLC. He obtained Master in Business Administration (MBA), Bachelor Degree in Civil Engineering from Glasgow University. He is also a registered professional engineer with the Board of Engineer Malaysia and a member of the Malaysian Water Association.
Interviewee C	Interviewee C is a politician who has been appointed as a State Executive Committee (Exco) Member in one of the States in Malaysia and also a member of BODs in a Malaysian PLC. He has Senior Cambridge and Malaysian Certificate of Education.
Interviewee D	Interviewee D is one of SC officers who are attached to the Enforcement Division. She has Bachelor Degree in Accounting.
Interviewee E	Interviewee E is an external auditor who directly involved in auditing a PLC accounts as part of their clients. She has double degree in Accounting and Finance.
Interviewee F	Interviewee F is the CAE for a Malaysian PLC. She has Bachelor Degree in Accounting and a member of Malaysian Institute of Accountant (MIA).
Question 2	How long have you been appointed/working in/for this company?
Objective	To measure the interviewee's working experience.
Interviewee A	4 years.
Interviewee B	7 years (but altogether he has 39 years of working experience in the particular PLC before being appointed as the CEO).
Interviewee C	6 years.
Interviewee D	5 years.
Interviewee E	8 years.
Interviewee F	10 years.
Question 3	What is the biggest challenge within corporate governance context from the perspective of financial reporting?
Objective	To get general thought on the biggest challenge from each of the interviewee as regards to financial reporting.
Interviewee A	To identify, develop and monitor PLC's strategy
Interviewee B	To comply with the Bursa Malaysia and SC's requirement, whereby we have to have a transparent corporate governance practices.

Interviewee C	To vet through the financial proposal and also the financial performance during our meeting session.
Interviewee D	To investigate and prosecute PLCs that breaches the securities laws. In addition, the challenge is also to ensure all people involved in PLCs is to follow the act and procedures.
Interviewee E	To provide audit, tax and advisory services in valuable ways, which can benefit not only our clients, but also the capital markets. And this includes on how we express our opinion on the financial reporting based on our audit.
Interviewee F	To make sure that financial reporting is prepared accordingly (true and fair view) and applicable approved accounting standards in Malaysia.
Question 4	Have you ever encountered any fraudulent scenario involving financial reporting? What are the key factors that lead towards that kind of scenario?
Objective	To get critical/key factors that lead towards Fraudulent Financial Reporting (FFR) from the interviewee perspective.
Interviewee A	**No**.
Interviewee B	**No** – because the PLC practises good corporate governance. Therefore, there are sufficient procedures and controls to deter and detect any possible fraudulent cases.
Interviewee C	**No**.
Interviewee D	Yes - manipulating of shares, misappropriating client's funds and normal misleading statements which focus a lot in Malaysia. There are different factors that might lead these offenders, but more of that is similar pattern on most of the cases, which is greed. Other factors are normally due to lack of internal control and personal financial pressure.
Interviewee E	Yes - both of the fraud cases were caused by directors' greed attitude who were trying to manipulate company' profit for better financial performance.
Interviewee F	**No** - most of the cases are due to personal greed among the executives.
Question 5	In your opinion, what is the most effective financial ratio from Malaysian PLCs' annual reports that can be used to measure financial performance?
Objective	To get interviewee's opinion on the most effective financial ratio to measure Malaysian PLCs' financial performance.
Interviewee A	**Growth ratio** or **Return on Asset (ROA)**
Interviewee B	Return of Shareholders fund
Interviewee C	Different company will have different performance and also the profit margin (not specified)
Interviewee D	**Return on Asset (ROA)**
Interviewee E	**Return on Asset (ROA)**

Interviewee F	**Return on Asset (ROA)**
Question 6	In your opinion, what is the most effective financial ratio from Malaysian PLCs' annual reports that can be used to measure financial pressure?
Objective	To get interviewee's opinion on the most effective financial ratio to measure Malaysian PLCs' financial pressure.
Interviewee A	**Debt Ratio**
Interviewee B	Gearing Ratio
Interviewee C	Different company will have different performance and also the profit margin (not specified)
Interviewee D	**Debt Ratio**
Interviewee E	**Debt Ratio**
Interviewee F	**Debt Ratio**
Question 7	Do you think that incentive can lead executives or non-executives in Malaysian PLCs to manipulate financial reporting against the common laws/regulations set by Bursa Malaysia and Securities Commission Malaysia (SC)? If 'yes', what is/are the example/(s)?
Objective	To get interviewee's opinion whether 'incentive' is one of the suitable fraud-risk factors in detecting the likelihood fraudulent financial reporting (FFR) among Malaysian PLCs.
Interviewee A	**Yes**
Interviewee B	No
Interviewee C	No - Malaysian PLCs under Bursa Malaysia and SC are quite professional, so they have to look after their code of ethics.
Interviewee D	**Ye**s - greed is derived from various incentive offered by PLCs. For instance double or triple bonus incentive, which maybe depending on the company's profit or some other perks, like overseas trip, vacation funded by the company if the PLC can achieve outstanding performance.
Interviewee E	**Yes** - incentives among executives like directors can be very persuasive to drive them for the manipulation. Higher dividend payouts and company's remunerations are part of the reason.
Interviewee F	**Yes** - one of the common examples is bonus for the staffs, especially executives and higher dividend payouts for the shareholders if the company could perform a better run or profit in the current year. Executive and non-executives directors might want to present excellent financial performance, which can attract public and shareholders' confidence, so that the share price could have increased or at least maintain in average for that particular financial year.
Question 8	Do you think that pressure can lead executives or non-executives in Malaysian PLCs to manipulate financial reporting against the common laws/regulations set by Bursa Malaysia and SC? If 'yes', what is/are the example/(s)?

Objective	To get interviewee's opinion whether 'pressure' is one of the suitable fraud-risk factors in detecting the likelihood FFR among Malaysian PLCs.
Interviewee A	**Yes**
Interviewee B	**Yes**
Interviewee C	**Yes** - they would like to prove that they are capable of managing the business.
Interviewee D	**Yes** - we can find it in most of the cases. Generally pressure comes from shareholders who normally want to see their invested PLCs produces wonderful, interesting and attractive figures on their annual reports.
Interviewee E	**Yes** - pressure can lead them, especially financial pressure. It could have triggered from inside or outside of the company. Employment pressure from continuous compensation structures and company's financial pressure are the insider factors, while capital market threats to the business financial stability can become an external factor.
Interviewee F	**Yes** - Financial pressure is one of the common motivator for executives or non-executives to manipulate financial reporting.
Question 9	Do you think that current BODs composition [outside members (non- executives) as compared to inside members (executives)] has a significant effect in deliberating major decisions for this company? Why do you think this is a case?
Objective	To get interviewee's opinion on the effectiveness of current composition of BODs in the company (outside members as compared to total number of BODs) in deliberating major decisions.
Interviewee A	**Yes** - Combination of the two (executive and non-executive Directors) not only of exchange of idea or issues, but it will enable a factor to be looked from a different perspective.
Interviewee B	**Yes** - Directors usually have vast experience and diverse background of skills or disciplines.
Interviewee C	**Yes** - executives and non-executives can perform their duty as check and balance, which are their duty of performance.
Interviewee D	**Yes** - there is a very clear regulation on the BODs composition, which requires at least 2 directors or 1/3 of the total BODs of a PLC or we often referred to listed issuer must be independent directors. There is no comfort room for dependent directors or executive directors to dominate PLC's decision.
Interviewee E	**Yes** - outside members of BODs or non-executive directors have no personal interest to the company, at least theoretically.
Interviewee F	**Yes** - we need outside parties that have no personal interest to the company to be part of the BODs, not only to protect the shareholders' interest, but also for the company's sake itself.
Question 10	Based on this composition, do you think that BODs of this company have effectively reached satisfactory decisions for the company, especially on behalf of the shareholders? Could you please elaborate?
Objective	To get interviewee's opinion on shareholders' perceptions on any decisions made by the BODs.
Interviewee A	**Yes** – the PLC is able to see an issue from different perspectives in fact from different background.

Interviewee B	**Yes** – this composition can raise the level of corporate governance (because of their experience and expertise) through the structuring and implementation of sound practices and processes. It strives to provide practical insights into better practices including how such practices can be adhered to in substances rather than inform. Hence, achieving strategic, objective and build sustainable values in businesses.
Interviewee C	**Yes**
Interviewee D	Not Applicable
Interviewee E	**Yes** - shareholders' interest must be priority for any PLCs. That is why Bursa Malaysia's Listing Requirements and the Malaysian Code of Corporate Governance stress on a balance composition between executive and non-executive directors to avoid any individual or small group of individuals dominate the board's decision making.
Interviewee F	**Yes** - despite the equal composition between independent and non-independent directors, any decision especially with regards to the shareholders' benefit must be agreed in BODs meeting. I'm sure that justification for any decisions made is well-explained in minutes of meetings.
Question 11	If a Malaysian PLC changes a Chief Audit Executive (CAE) frequently, do you think there is any significant implication? In general, do you think that frequent changes of CAE have an effect on the company's performance, particularly on the way of preparing financial reporting for the company?
Objective	To get interviewee's opinion whether the frequent changes of CAE have an effect on the Malaysian PLCs' performance, particularly on the way of preparing financial reporting for the company.
Interviewee A	Yes, if less than 5 years - Head of Internal Audit's performance may not fulfil the total requirements of the PLCs, but it is in a way as whistleblower for the PLC.
Interviewee B	No - CAE usually reports to Risk & Audit Committee and independent from PLC's reporting. Hence, there is no significant implication.
Interviewee C	No - I can't see any reason why you need to change CAE regularly or frequently. After all, if their work has been satisfactory and also they can perform well, there is no reason why you need to change the CAE.
Interviewee D	Yes - but most of the time, we encountered CFO as the key personnel who fielded financial report before being reviewed by audit committee.
Interviewee E	Yes - the Malaysian Code of Corporate Governance provides 3 alternatives for Malaysian PLCs with regards to auditing functions. They can use their own employees who will carry the internal audit tasks or they can hire external auditors like us, based on

	contract-basis to conduct the audit as behalf of the company. Alternatively, they may also engaged independent professional firm as supportive service for their internal auditors, what we call as co-sourced. But most of the PLCs prefer the external auditors. Therefore, I don't think that CAE is the only post that can give implication to the company, since not all PLCs have that position. If you are referring to the company's staffs or executives, you may use internal auditor or Head of Internal Auditor or even CFO, which I think would be much better.
Interviewee F	No - Bursa Malaysia has provided a clear procedure for us, internal auditors whereby we must be independent of the activities that we audit. Furthermore, we must report directly to the audit committee, which has full access to examine our reports. For your information, the majority of audit committee members must be independent directors.
Question 12	In your opinion, what are the common factors that resulting frequent changes of CAE among Malaysian PLCs?
Objective	To get interviewee's opinion on the common factors that resulting frequent changes of CAE among Malaysian PLCs.
Interviewee A	To enable a new auditor to indirectly audit the previous auditing done by another auditor. It's the issue of 'check and balance' and also to ensure that a thorough auditing is being done by a new auditor. Having a well-versed internal auditor in accounts of the PLC, may lead to the particular auditor to take it for granted instead of looking at it very seriously.
Interviewee B	Basically, the personalities are not satisfied with what they are doing or in the PLC.
Interviewee C	He or she cannot perform well or he/she has committed some breach of their ethics of work.
Interviewee D	Most of the CFO always looks up for better opportunities in other PLCs, especially multinational companies. Other factors could be incompetence CFO who can't really satisfied top management and shareholders. Besides that, maybe their failure to manage financial reporting accordingly could be one of the vital reasons for the changes.
Interviewee E	HIA is not doing his or her job very well. Most probably he or she is not competence in her job.
Interviewee F	One of the common factors for the frequent changes is that the HIA is unsuitable for the company. Perhaps he or she way is too transparent to query any doubtful transactions for the company, when the top management feel that the query is unnecessary. I believe that most of the top management want HIA who is really competence in auditing jobs, but in the same time possess certain degree of tolerable judgement on the company's financial reporting.
Question 13	Do you think that opportunity can lead executives or non-executives in Malaysian PLCs to manipulate financial reporting against the regulations set by Bursa Malaysia and SC? If 'yes', what is/are the example/(s)?
Objective	To get interviewee's opinion whether 'opportunity' is one of the suitable fraud-risk factors in detecting the likelihood FFR among Malaysian PLCs.
Interviewee A	**Yes**
Interviewee B	No - Financial reporting is a process and has set of procedures with various types of controls that can eliminate or reduce fraudulent

	elements in the reporting to Bursa Malaysia and SC. So, within the PLC we have internal auditor. On top of that, we have external auditor. On top of that, we have the risk and audit committee. So they are sufficient check and balances to minimise any potential fraudulent practices and these have been proven in the long existence in our PLC. We've never experience any fraudulent cases so far.
Interviewee C	No - SC is quite stringent in monitoring the financial reports and the penalty for misdoing or misreporting is quite severe. So I think, most of these executives or non-executives, they will not trying to risk their future.
Interviewee D	**Yes** - most of the fraud cases would have relate to the weakness of internal control.
Interviewee E	**Yes** - a skilful executive whether in numbers or computers might potentially do the harm, if the company practises lack of segregation of duties among the staffs. But for non-executives, there are very little chances for the manipulation. They might influence that company's decision in the BODs meeting, or if they are appointed as audit committee members or chairman, they can simply oversight any doubtful accounts. However, for such non-executives to commit this harm, the company executives' participation as internal sources is a must.
Interviewee F	**Yes** - financial and non-financial data accessibility is one of the good examples. Nowadays, everything is almost possible to get if someone has efficient skills in computers. If you can break anyone's password, then you can access any data that the person have.
Question 14	A financial restatement is necessary when Bursa Malaysia determines that the previous financial statement contains a material inaccuracy. Do you think that historical financial restatements (HFRTs) can reflect on management integrity? Why do you think this is a case?
Objective	To get interviewee's opinion whether HFRTs can measure management integrity.
Interviewee A	**Yes** – HFRTs mean the management and BODs are not running or not administering the PLC good enough to prepare the financial reporting, which will reflect not only integrity of the management, but also the PLC as a whole.
Interviewee B	No - not all financial restatements reflect management integrity. Majority is due to adoption of new Malaysian Financial Reporting Standards (MFRSs), amendments or improvements. Sometimes there are old school accountancies versus new school accountancies/practices. Or, between the Commonwealth-based accounting practices and the American-based accounting practices.
Interviewee C	**Yes** - if it is technical errors in financial reporting, it is acceptable. If it is well-planned manipulation of the financial report, of course this is a very serious case, which demands no pardon to that.
Interviewee D	**Yes** - financial restatements can reflect management integrity in most of the cases. As far as enforcement division's actions are concerned, some of the fraud cases like Transmile Bhd. are subject to financial restatement.
Interviewee E	**Yes** - most of the financial restatement cases are caused by inaccurate financial information, which I confidence due to executives' errors or audit committee's oversight.

Interviewee F	**Yes** - but we must bear in mind that sometimes material inaccuracy is accidently caused by internal audit or audit committee oversights. I would like to say that the Malaysian Code of Corporate Governance 2012 urges the audit committee to ensure financial statements comply with financial reporting standards.
Question 15	Do you think that executives and non-executives' attitude can be reflected on financial or non-financial data from Malaysian PLCs' annual reports? Why do you think this is a case?
Objective	To get interviewee's opinion on the possibility to measure 'attitude' through financial or non-financial data from the annual report.
Interviewee A	Yes - Executive and non-executive are 'part and parcel' of the PLCs. As such, whatever your attitude, whatever your opinion which may be negative to the PLC, may affect or give a negative perception towards the PLC.
Interviewee B	Yes - the reporting of financial & non-financial data from Malaysian PLCs' annual reports reflects the maturity and level of voluntary disclosure (corporate governance) of the executives & non-executive from Malaysian PLCs.
Interviewee C	Yes - it can be a threat of integrity for the BODs.
Interviewee D	No - attitude is very subjective in nature and impossible to be measured, especially by the financial or non-financial records.
Interviewee E	No - we can't judge person's attitude based on annual report. But we can draw management attitude from a whole form of annual report. HFRT is the best example.
Interviewee F	No - you can't judge person's attitude based on annual report. But you can predict attitude of the management as a whole from annual report.
Question 16	Do you think that attitude can lead executives or non-executives in Malaysian PLCs to manipulate financial reporting against the regulations set by Bursa Malaysia and SC? If 'yes', what is/are the example/(s)?
Objective	To get interviewee's opinion whether 'attitude' is one of the suitable fraud-risk factors in detecting the likelihood FFR among Malaysian PLCs.
Interviewee A	**Yes** - having a bad attitude will be considered right for a fraudster even in manipulating the financial reporting.
Interviewee B	No - attitude in any PLC will be managed by the Human Resources people.
Interviewee C	**Yes**.
Interviewee D	**Yes** - one example is greed.
Interviewee E	**Yes** - if a person has bad intention towards the actions, he or she will be doing that.
Interviewee F	**Yes** - but attitude must come with opportunity, which provides ways to commit fraud.
Question 17	What do you think changes of accounting policies might tell you about the company?
Objective	To get interviewee's opinion whether the changes in accounting policies are necessary or not.

Interviewee A	Changing of accounting policies is towards a positive intention leads by Bursa Malaysia to ensure that all PLCs do so.
Interviewee B	It is a non-issue procedure. When we change, it will change due to legal requirement. We only change due to legal requirement, not to change the financial picture to favour us.
Interviewee C	It depends more on the accounting policy, not purposely changing the style of accounting reports. So they have to follow the financial reports' requirement.
Interviewee D	Most of the PLCs change their accounting policies to improve their financial statements just towards a better reporting style.
Interviewee E	If the changes happen in every 5 years, it would be fine. If changes take a place before that, the company must have provided good justifications. Generally, it's normal to change the accounting policies.
Interviewee F	These actions would give negative impression on the company, if the changes are frequent. However, if let say that the changes are once in every 5 years, that's a normal step, if well-justified.
Question 18	If a Malaysian PLC changes the accounting policies every year, would it come to you any concern? How about every 2 years (up to 10 years)? How frequent do you think changes of the accounting policies are necessary? Why do you think this is a case?
Objective	To get interviewee's opinion on the suitable period for the accounting policies to be changed. (i.e. The interviewee could possibly suggest 'in every 3 years' or 'in every 5 years', etc).
Interviewee A	Changing every year may result in shareholders to have a negative impact on the company and it may be also highly suspicious to the performance of the company. But if there is a need for an accounting policy to be changed, it might be seen normal, if the changes have taken place in every probably once **in every 5 years**.
Interviewee B	A PLC actually cannot change accounting policies every year. Frequent changes need justifications and voluntary disclosures in the financial reporting to all stakeholders immediately through quarterly reporting. So, you simply cannot change financial policies because you want to hide certain things from the market or your shareholders.
Interviewee C	2 years would be fine.
Interviewee D	I would rather concern if the company change the accounting policies in every 3 years or **less than 5 years**. This is like ample period for certain accounting policies to show their effectiveness. I don't think any financial reporting period which is less than 5 years can really drive the company to change the accounting policies.
Interviewee E	I would rather concern if the company change the accounting policies within any period that **less than 5 years** because some of the accounting policies, such as asset depreciation or amortisation, can be reviewed from time to time to cope with the current needs.
Interviewee F	I would rather concern if the company change the accounting policies within any period that **less than 5 years**. I think within 5 years, some of the accounting policies, such as asset valuation, depreciation and amortisation, should have been reviewed to suit

	current changes at that particular time.
Question 19	Rationalisation is a frame of mind or ethical character that allows individuals to intentionally commit dishonest actions and justify them. Do you think that rationalisation can lead executives or non-executives in Malaysian PLCs to manipulate financial reporting against the regulations set by Bursa Malaysia and SC? If 'yes', what is/are the example/(s)?
Objective	To get interviewee's opinion whether 'rationalisation' is one of the suitable fraud-risk factors in detecting the likelihood FFR among Malaysian PLCs.
Interviewee A	**Yes** - rationalisation is the companion factor of attitude. As an example, if I were to take a bundle of A4 paper for my personal use, I can justify that I deserve it because I'm the Head of Department and have the right to take it home. I can always provide reasons for any actions even though those actions are unethical. So, the same principle applies when executives or non-executives, they manipulate financial reporting. They can justify their wrongdoing for whatever reasons that they have. For instance, 'as the senior director for the company, I believe that I have full authority to take company's remunerations in advance'
Interviewee B	**Yes** - rationalisation should be restricted to the highest level. That's means the CEO, BODs and in consultant with external auditors. Rationalisation should be within the financial procedures or the MFRSs Standards. Not to create your own personal agenda.
Interviewee C	**Yes** - ethical character will make some people to do wrong things.
Interviewee D	**Yes** - people always have reasons to justify their dishonest actions. So, there is no surprise in rationalised their dishonest actions. One good example is a prosecution on false reporting involving a PLC's executives concerning the utilisation of the company rights issue proceeds. They thought that they haven't committed any offences since they were executives for the company.
Interviewee E	**Yes** - one good example is that the person could have said 'it is for the good of the company'.
Interviewee F	**Yes** - based on my personal experience, when we imposed any audit query, we would get so many reasons, which are sometimes we never thought of. As part of our professionalism code of conducts, we should review every single reason without any prejudice or biasness and open for any valid explanations. However, if the same mistake occurs quite frequently, even it is a minor one; we must cautiously consider any possibility of fraud on that. So, rationalisation must come as support statements or back-up for any fraudsters.
Question 20	If a Malaysian PLC does not spell out its policy on doubtful debts and account receivable, do you think this is an issue? Can you elaborate further?

Objective	To get interviewee's opinion on the relationship between undeclared subjective judgements in annual report (such as policies on doubtful debts and account receivable) and FFR.
Interviewee A	**Yes** - for a PLC that has its subsidiaries, it is high possible that policies of doubtful debts and account receivable related to the subsidiaries are not spell out.
Interviewee B	**Yes** - In fact, the current disclosure requirements for asset impairment on Trade or Other Receivables are mandatory. A policy is essential. The disclosure comprises analysis of trade receivable aging by number of days past due as follows: 1. Not past due; 2. Past due between 15 to 60 days; 3. Past due between 61 to 365 days; and 4. Past due more than 365 days. And these must be follow-up closely to make sure that the debts situations don't go out of hand.
Interviewee C	**Yes** - dishonest in doing account instead of deficit, they show profit account. Of course this is a very bad practice.
Interviewee D	**Yes** - any doubtful debts and account receivable are mostly stated in financial review section of the annual report. However, if a public listed company doesn't declare these in annual reports, there is possibility that the company would have something to hide on.
Interviewee E	**Yes** - usually, policies on doubtful debts and account receivable are disclosed in summary of significant accounting policies, which can be found in notes to the financial statements. Through my experience, the least information that a PLC can provide on this kind of policies is to state one sentence, 'trade and other receivables are stated at cost less allowance for doubtful debts'. If the policies are not clear or not being explained at all, negative implications on those particular accounts could have been occurred not only among auditors, but also among shareholders.
Interviewee F	**Yes** - one of our checklists is to review doubtful debts and account receivable. So, if these accounts are not properly explained or even disclosed, there is high possibility that the company wants to amend financial performance, which I believed is not in good shape.
Question 21	Do you think Malaysian PLCs are fully explained weaknesses of financial performance? Have you got any concern if such weaknesses have not explained?
Objective	To get interviewee's opinion on any possible way/(s) for Malaysian PLCs to minimize or hide the weaknesses on financial performance in annual report. (i.e. limited access on SPV's financial reporting).

Interviewee A	No - not all weaknesses of financial performance are fully explained. There is no company that I've known of that hasn't had any financial weaknesses. As PLCs market volatility and business orientation are part of the determinant factors for healthy financial performances.
Interviewee B	Yes - any weaknesses or setback on financial performances are done or communicated quarterly. During our Quarterly Reporting, we have to report to Bursa Malaysia and SC in every quarter. So, you have to explain and PLCs are encouraged to voluntary explain setbacks and anticipated variances, whether favourable or unfavourable, through the Quarterly Financial Reporting channel. So that's why when you report every quarter, so everybody is kept on your toes. So that by the time you have the annual report, you can see first, second, third and fourth quarter whether all these make sense; the cumulative impact for the whole year.
Interviewee C	No – (However), if they can explain well of their weaknesses in the financial performance, as BODs we can accept their explanation.
Interviewee D	No - not all weaknesses are fully explained. However, as long as Listing Requirements are being followed or the procedures have been followed, we can't really say that the weaknesses have not explained.
Interviewee E	Yes - at the beginning of annual report, there is a statement by directors and statutory declaration to declare true and fair view for the financial statement. For us as external auditors, we form an independent opinion based on our audit on the financial statement. But, if there are some weaknesses that obvious to us and are not fully explained, we would have that concern.
Interviewee F	No - not all weaknesses are fully explained. My concern is depending on subject of interest of mine. As an internal auditor, my concerns are various.
Question 22	Do you think that capability/competence can lead executives or non-executives in Malaysian PLCs to manipulate financial reporting against the regulations set by Bursa Malaysia and SC? If 'yes', what is/are the example/(s)?
Objective	To get interviewee's opinion whether 'capability/competence' is one of the suitable fraud-risk factors in detecting the likelihood FFR among Malaysian PLCs.
Interviewee A	**Yes** - that is the real challenge for non-executive directors in BODs to oversee and conduct the PLC's performance and evaluate whether the PLC is actually properly managed or not. We actually should be able to obtain sufficient capabilities in doing our work. So, the same concept is applicable to anybody who wants to manipulate financial reporting. They must have sufficient capabilities such as ability to manipulate account receivable or ability to create a new account to hide the suspicious transactions.
Interviewee B	**Yes** - integrity and honesty of lead executives or non-executives are utmost important in preparing financial reporting. Bursa Malaysia regulations are frequently reviewed and update to identify the weaknesses and enhanced reporting techniques or requirements. I think in Malaysia, on top of that we have the Minority Shareholder Watchdog Group (MSWG). They will be monitoring the PLCs to protect the interest of the minority shareholders.

Interviewee C	**Yes**
Interviewee D	**Yes** – capability/competence is one of the crucial skills to manipulate financial reporting. You have to be good enough in order to manipulate financial reporting. Only clever people can do the manipulation. For instance, there are some fraud cases involving figures' manipulation in financial reporting. I think it's not easy to be creative, but then a lot of people are trying to be creative nowadays.
Interviewee E	**Yes** - capabilities or competency is the compulsory factor to manipulate financial reporting. You might have opportunity, but if you are not capable or competent, you can't manipulate financial reporting. Nowadays, I believe that for a manipulation to happen, a good teamwork has to be established. Let say only 2 people involved, still they can form a good team. In order to manipulate financial reporting, they must have planned a systematic strategy, which will create an advantage situation for them. That is what I meant by capability or competency.
Interviewee F	**Yes** - whoever that have high literacy capability or competence in computers would have such advantages for the manipulation of financial reporting.
Question 23	Do you think there is any implication of the same person being the Chief Executive Officer (CEO) and chairman of BODs? Why do you think this is a case?
Objective	To get interviewee's opinion of the same person being the Chief Executive Officer (CEO) and chairman of BODs or also known as 'CEO duality' in Malaysian PLCs.
Interviewee A	**Yes** - there should be a separation of power or authority between the executive and non-executive directors in PLCs. What needs to be addressed and concerned is on the accountability and transparency, which are actually the issues that have to be seriously looked into if the same person to hold the two positions for the PLC. I would say that it is high risk because the chairman has all the advantages in the BODs of the PLC and if he were to execute as a CEO, the tendency of fraudulent and negative intention may happen.
Interviewee B	**Yes** - for corporate governance purposes, it is best practice you must separate the role of CEO and Chairman because CEO is an executive post and the Chairman role is normally non-executive. Together, you'll have more effective and impartial decision-making to implement the best decisions in doing business.
Interviewee C	**Yes** - as a CEO he would have execute the company business and he can approve in the BODs' meeting to justify his action. So this will cause conflict of interest.
Interviewee D	**Yes** - there will be negative implications if this thing happens. The same person for the top posts will always have absolute power in decision-making process for the PLC.

Interviewee E	**Yes** - conflicts of power will arise. There must be a clear separation of power between executive directors and non-executive directors. I'm sure that the best person to be appointed as the chairman of BODs is a non-executive director. I would say that majority of Malaysian PLCs are not having the same person as CEO and chairman of BODs. Most of the PLCs would different individuals as CEO and Chairman of BODs for the companies. However, there are common practices to appoint the same person as chairman of BODs in more than one PLC. After all, Bursa Malaysia's Listing Requirements allow the same person to be appointed as the chairman of BODs to a maximum number of 5 companies.
Interviewee F	**Yes** - there is a total domination of power in this case. He or she can control the company. But I doubt that majority of Malaysian PLCs having the same person as CEO and chairman of BODs. I can barely see them. I think becoming a chairman of BODs for multiple Malaysian PLCs in the same time is a common practice here.
Question 24	There are certain requirements among the Malaysian PLCs to appoint a politician as the CEO or chairman of the BODs. Do you think there is any issue which follows from these practices?
Objective	To get interviewee's opinion on the appointment of politicians as the CEOs or Chairmen of BODs that might indicate total domination in making major decisions in Malaysian PLCs.
Interviewee A	**No** - there should not be any differentiation between a politician and a non-politician. The fact that if you understand your role as the CEO or chairman for the BODs, then you should be able to uphold justice and also uphold the right by virtue of being the CEO of the PLC.
Interviewee B	**No** - In our case, our company is rather unique in Malaysia, or maybe in the world. Although we are a Malaysian PLC, the State Government is the major shareholder in order to protect the majority interest of the state's people. Since the State Government is the major shareholder; therefore, the Head of State Government, which is the Chief Minister is the Chairman for the PLC. So, his role is to protect the interest of people in our state. We are unique in the sense although we are PLC, but we carry out business activities in a very public-private manner.
Interviewee C	Yes - I think preferably, a politician is not a good choice to be appointed as a CEO.
Interviewee D	**No** - most of the Government-Linked Companies (GLCs) adopt these rules. Technically, as a major shareholder for GLCs, government officials' representatives must be appointed as the chairman of the BODs, which is usually politically-connected. It depends on how transparent the meeting is being conducted. If the politician has sufficient knowledge or qualification or academic background with regards to the GLCs' core operations, I think there wouldn't be any issues. After all, Listing Requirement has stated that a Malaysian PLC director can hold up to 5 directorships in PLCs.

Interviewee E	Yes - the main issue here is power. If a politician is appointed as the CEO or chairman of the BODs, there is a concern that the politician might run the company as a political party. In most of the cases, politician is being appointed as the chairman of BODs, not as the CEO. You must have deep knowledge about the company's operation and core businesses to be appointed as CEO. Therefore I doubt that most of the politician is being appointed as CEO. But for the post as BODs' chairman, it is necessary if the company represents majority of the government interest such as GLCs.
Interviewee F	Yes - most of them are normally appointed as the chairman of BODs, not as the CEO. Based on my observation, most of the BODs' chairmen are independent non-executive director to ensure that there is a separation of the chairmen's role and CEO roles. To be fair, who ever hold the BODs chairmanship is potentially liable to any issue. So, there will always be some issues if a politician is appointed as the chairman of BODs.
Question 25	Do you think that arrogance can lead executives or non-executives in Malaysian PLCs to manipulate financial reporting against the regulations set by Bursa Malaysia and SC? If 'yes', what is/are the example/(s)?
Objective	To get interviewee's opinion whether 'arrogance' is one of the suitable fraud-risk factors in detecting the likelihood FFR among Malaysian PLCs.
Interviewee A	No - arrogance doesn't work in association/company for that matter. When you have that sort of attitude, the likelihood that you're willing to receive advice, recommendation or suggestion from other will be nullified. It may be turn into one directional meeting, discussion and so on; whereby an arrogance chairman for that matter will be tapped in members of the board, and will finally lead to a negative implication including financial reporting's manipulation.
Interviewee B	No - severe appropriate punishment can control people's arrogance. People behaviour can be changed by appropriate punishment.
Interviewee C	**Yes** - arrogance can do anything.
Interviewee D	**Yes** - there are some fraudulent offenders consume arrogance character in their reactions to our enforcement actions. I believe some of them may think that they will never get caught in manipulating financial reporting, especially by us. These people always practise autocratic management style in the company, which give them absolute power to access all company's information.
Interviewee E	**Yes** - maybe there are some executives have these characters, which I think much more suitable to be categorised into 'attitude'. In Malaysian context, arrogance might likely suit to the directors who are politically connected. I mean if an executive or non-executive director in GLCs who is directly or indirectly connected to the politicians that have significant power to influence the company, he or she could be given extra privileges by the chairman of BODs, which is normally a politician, for certain tasks. Maybe over ride some of the management decisions or everything regarding company's financial concerns must be approved by him or her. He or she would feel arrogance in this situation, and I believe that he or she could do almost anything, even manipulating financial reporting.

Interviewee F	**Yes** - but in Malaysian context, I don't think CEO is seen as a celebrity. Most of the CEOs are more than 40 years old and their appearances are different from young executives. Arrogance might suit the chairman of BODs who is a politician, which we aware that they have certain degree of power to influence the company's decision.
Question 26	In your opinion, which sections of financial reporting in Malaysian PLCs' annual report are more open to manipulation?
Objective	To get interviewee's opinion on sections of financial reporting in Malaysian PLCs' annual report which are more open to manipulation.
Interviewee A	**Income statement** – it will actually report PLC's revenue and expenses, which are two important transaction involving shareholders' money. In any PLCs the expectation of shareholders would be the return at the end of financial year.

Interviewee B
 	
Interviewee B (Continued)
	Areas which are more open to manipulation are items dealing with estimation, uncertainty and subject to judgements as follows:
	  1. Useful lives of depreciable assets. - a different company might adopt different duration;
	  2. Impairment of plant & equipment;
	  3. Inventories;
	  4. Impairment of investment securities or loans and receivables; and
	  5. Deferred tax assets.
	
	The main reasons are the variables are determined differently by each company and could be challenged if not being adopted properly and consistently.

Interviewee C	All sections of financial report are open to manipulation.
Interviewee D	**Balance sheet** because all main accounts such as account receivable and account payable are included.
Interviewee E	**Income statement**. It reports company's revenue and expenses. If a company want to produce a healthy financial reporting, this section will be surely amended accordingly.
Interviewee F	**Balance sheet** is more open to manipulation because it contains current assets, such as other receivables, cash and cash equivalents; and current liabilities, like other payables and borrowings. Although there are explanations for these accounts in notes to the financial statements, details or break down for each of the figures are almost impossible to be accessed by public.
Question 27	Based on the culture and environment in Malaysia, what is the most critical factor that can lead executives or non-executives in Malaysian PLCs to manipulate financial reporting against the regulations set by Bursa Malaysia and SC? Are there any other factors that you think might lead people to manipulate financial reporting (i.e. fraud)?

Objective	To get interviewee's opinion on the critical factor that can lead towards the likelihood of FFR among Malaysian PLCs.
Interviewee A	**Integrity** - if the right person who are transparent, honest and understand his/her role as BODs may not result in manipulating financial reporting.
Interviewee B	Greed or ignorance in the manipulation of financial reporting (corporate governance or the Board of Directors are ignorance of the proper practices).
Interviewee C	Pressure to show that he or she is performing well in the company, so that he or she will not be questioned or being fired by the company.
Interviewee D	Financial threat could be other factor towards manipulation of financial reporting in Malaysia. As a developing country, monetary policies are very important in order to make sure that business cycles, including PLCs are fully operated. Global financial stability, which is beyond control, can make a huge impact to Malaysian PLCs. As for economic recession, financial threat caused by global economic recession can becoming a major factor for Malaysian PLCs to manipulate financial reporting just for their survival.
Interviewee E	Capability or competency is the critical factor. As PLCs in developing country, transparency is one of the favourite issues. From the financial reporting perspective, people's judgement on the quality of the report is based on how transparent the company can provide the financial performance. Therefore, Malaysian PLCs are fully aware that every important aspect with regards to financial reporting must be accounted in. But, as we can see, fraud cases are still happening. That is why I believe that these fraudsters must capable or competent to manipulate financial reporting because it is not an easy job.
Interviewee F	**Determination** is the most crucial or critical one. To my knowledge, even though a Malaysian PLC has established efficient internal control environment, if a person determines to commit fraud, he or she will go for it. Maybe that person has determined to test Bursa Malaysia and audit committee's ability in detecting any unusual facts or figures from financial reporting.

The Hausman Tests

The Hausman Tests for Contemporary Panel Data Models

1.   Hausman Test on Model 1

The Hausman Test on Model 1 intends to indicate either logistic FE model or RE model is appropriate in predicting the likelihood of FFR based on the fraud-risk factors from the Fraud Triangle Model. Thus, the hypothesis is written as below:

H_0: Logistic Random-Effects model is appropriate for Model 1

H_1: Logistic Fixed-Effects model is appropriate for Model 1

Table 1 presents the results. It can be seen that values for explanatory variables in Model 1 for logistic FE model (b) is higher than the RE model (B) except for COMBODs. These values suggest significant differences between (b) and (B), as well as the square-root (sqrt) of SE. In relation to this, COMBODs show the lowest difference for (b-B) and GROWTH (Δ Sales) shows the lowest sqrt of SE. On the other hand, HFRTs show the highest difference for both (b-B) and sqrt of SE.

Table 1: Results of Hausman Test on Model 1

Dependent Variable: Fraudulent Financial Reporting (FFR)						
Fraud-Risk Factors	Explanatory Variables	Hypotheses	(b) Fixed	(B) Random	(b-B) Difference	Sqrt [diag (V_b-v_B)]S.E.
Incentive	GROWTH (ROA)	H1a	1.222	-2.003	3.225	1.011
	GROWTH (Δ Sales)	H1a	-0.0017	-0.004	0.002	0.002
Pressure	LEV	H1b	0.035	0.0114	0.024	0.028
Opportunity	COMBODs	H2a	1.378	1.437	-0.059	0.414
	ΔHIA	H2b	2.813	1.874	0.939	0.567
Attitude/ Rationalisation	HFRTs	H3a	17.698	1.724	15.974	1385.554
	ΔACCPOL	H3b	2.638	1.621	1.017	0.727

Following this, the Hausman Test generates the xtlogit summary based on the difference

in coefficients as follows:

```
                    b = consistent under Ho and Ha; obtained from xtlogit
         B = inconsistent under Ha, efficient under Ho; obtained from xtlogit

    Test:  Ho:  difference in coefficients not systematic

                chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                        =        13.22
              Prob>chi2 =       0.0214
```

The summary shows that the χ^2 value for the hypothesis is 13.22, while the p-value is

0.0214. Since the p-value is lower than the χ^2 value $(0.0214 < 13.22)$, this research

rejects H_0 and accepts the logistic FE model as an appropriate model for Model 1 in

predicting the likelihood of FFR among Malaysian PLCs.

2.   Hausman Test on Model 2

The Hausman Test on Model 2 intends to indicate either the logistic FE model or the

RE model is appropriate in predicting the likelihood of FFR based on the fraud-risk

factors from the Fraud Diamond Model. Thus, the hypothesis is written as follows:

H_0: Logistic Random-Effects model is appropriate for Model 2

H_1: Logistic Fixed-Effects model is appropriate for Model 2

Table 2 presents the results.

Similar with Model 1, values of explanatory variables in Model 2 for logistic FE model

(b) is higher than logistic RE model (B) except for LEV and COMBODs. These values

suggest significant differences between (b) and (B), as well as the square-root (sqrt) of

SE. Consistent with Model 1, COMBODs shows the lowest difference for (b-B) and

GROWTH (Δ Sales) shows the lowest sqrt of SE.

Table 2: Results of Hausman Test on Model 2

Dependent Variable: Fraudulent Financial Reporting (FFR)						
Fraud-Risk Factors	**Explanatory Variables**	**Hypotheses**	**(b) Fixed**	**(B) Random**	**(b-B) Difference**	**Sqrt [diag (V_b-v_B)]S.E.**
Incentive	GROWTH (ROA)	H1a	-0.193	-0.841	0.648	1.824
	GROWTH (Δ Sales)	H1a	-0.001	-0.004	0.003	0.001
Pressure	LEV	H1b	0.020	0.025	-0.005	0.048
Opportunity	COMBODs	H2a	1.216	1.462	-0.246	0.530
	ΔHIA	H2b	2.862	1.838	1.024	0.582
Attitude/ Rationalisation	HFRTs	H3a	17.766	2.200	15.567	1363.91
	ΔACCPOL	H3b	2.729	1.867	0.862	0.731
Capability/ Competence	UNDPOL	H4a	14.945	2.562	12.383	6227.477
	SPVACC	H4b	3.358	-7.176	10.534	2.262

On the other hand, HFRTs show the highest difference for (b-B) and UNDPOL shows the highest sqrt of SE. Following this, the Hausman Test generates the xtlogit summary based on the difference in coefficients as described below:

```
            b = consistent under Ho and Ha; obtained from xtlogit
    B = inconsistent under Ha, efficient under Ho; obtained from xtlogit

Test:  Ho:  difference in coefficients not systematic

        chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                =        30.52
        Prob>chi2 =     0.0000
```

The summary shows that the χ^2 value for the hypothesis is 30.52, while the p-value is 0.000. Since the p-value is lower than the χ^2 value (0.0000 < 30.52), this research rejects H_0 and accepts logistic FE model as an appropriate model for Model 2 in predicting the likelihood of FFR among Malaysian PLCs.

3.   Hausman Test on Model 3

The Hausman Test on Model 3 intends to indicate either logistic FE model or RE model is appropriate in predicting the likelihood of FFR based on the fraud-risk factors from Crowe's Fraud Pentagon Model. Thus, the hypothesis is written as follows:

H$_0$: Logistic Random-Effects model is appropriate for Model 3

H$_1$: Logistic Fixed-Effects model is appropriate for Model 3

Table 3 presents the results.

Table 3: Results of Hausman Test on Model 3

Dependent Variable: Fraudulent Financial Reporting (FFR)						
Fraud-Risk Factors	**Explanatory Variables**	**Hypotheses**	**(b) Fixed**	**(B) Random**	**(b-B) Difference**	**Sqrt [diag (V_b-v_B)]S.E.**
Incentive	GROWTH (ROA)	H1a	1.230	0.879	0.351	1.876
	GROWTH (Δ Sales)	H1a	-0.002	-0.004	0.002	0.001
Pressure	LEV	H1b	0.045	-0.016	0.061	0.054
Opportunity	COMBODs	H2a	1.005	0.872	0.133	0.668
	ΔHIA	H2b	3.339	2.018	1.321	0.853
Attitude/ Rationalisation	HFRTs	H3a	17.630	1.860	15.771	1288.553
	ΔACCPOL	H3b	2.580	1.921	0.660	0.725
Capability/ Competence	UNDPOL	H4a	14.687	1.681	13.006	6565.626
	SPVACC	H4b	4.111	-5.172	9.284	2.366
Arrogance	CEODUAL	H5a	2.360	-1.067	3.427	1.990
	POLCEO	H5b	16.520	1.600	14.920	3778.659
	CEOPIC	H5c	0.123	-0.308	0.432	0.070

Similar with Model 1 and Model 2, values of explanatory variables in Model 3 for logistic FE model (b) is higher than logistic RE model (B). These values suggest significant differences between (b) and (B), as well as the square-root (sqrt) of SE. GROWTH (Δ Sales) shows the lowest difference for both (b-B) and sqrt of SE. Similar to Model 2, HFRTs show the highest difference for (b-B) and UNDPOL shows the highest sqrt of SE. Following this, the Hausman Test generates the xtlogit summary based on the difference in coefficients as described below:

```
              b = consistent under Ho and Ha; obtained from xtlogit
      B = inconsistent under Ha, efficient under Ho; obtained from xtlogit

   Test:  Ho:  difference in coefficients not systematic

           chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                 =        14.78
           Prob>chi2 =      0.0220
```

The summary shows that the χ^2 value for the hypothesis is 14.78, while the p-value is 0.022. Since the p-value is lower than the χ^2 value (0.022 < 14.78), this research rejects H_0 and accepts logistic FE model as an appropriate model for Model 3 in predicting the likelihood of FFR among Malaysian PLCs.

4.   Hausman Test on Model 4

The Hausman Test on Model 4 intends to indicate either logistic FE model or RE model is appropriate in predicting the likelihood of FFR based on fraud-risk factors from the Fraud Models and additional factors that were discovered from the interviews. Thus, the hypothesis is written as below:

H_0: Logistic Random-Effects model is appropriate for Model 4

H_1: Logistic Fixed-Effects model is appropriate for Model 4

Table 4 presents the Hausman test on Model 4.

Similar with Model 1, Model 2 and Model 3, values for explanatory variables in Model 4 for logistic FE model (b) is higher than logistic RE model (B) except for COMBODs. These values suggest significant differences between (b) and (B), as well as the square-root (sqrt) of SE. EXREMU (ACTUAL) shows the lowest difference for (b-B) and GROWTH (Δ Sales) shows the lowest difference for sqrt of SE. Similar with Model 2 and Model 3, HFRTs show the highest difference for (b-B) and UNDPOL shows the highest sqrt of SE.

Table 4: Results of Hausman Test on Model 4

Dependent Variable: Fraudulent Financial Reporting (FFR)						
Fraud-Risk Factors	**Explanatory Variables**	**Hypotheses**	**(b) Fixed**	**(B) Random**	**(b-B) Difference**	**Sqrt [diag (V_b-v_B)]S.E.**
Incentive	GROWTH (ROA)	H1a	1.291	1.200	0.091	2.012
	GROWTH (Δ Sales)	H1a	0.000	-0.002	0.002	0.002
Pressure	LEV	H1b	0.049	-0.001	0.050	0.064
Opportunity	COMBODs	H2a	0.803	0.812	-0.009	0.718
	ΔHIA	H2b	3.450	2.233	1.217	0.917
Attitude/ Rationalisation	HFRTs	H3a	19.154	1.824	17.330	2185.456
	ΔACCPOL	H3b	2.732	2.041	0.691	0.780
Capability/ Competence	UNDPOL	H4a	15.217	0.885	14.332	20584.77
	SPVACC	H4b	3.440	-4.546	7.986	2.491
Arrogance	CEODUAL	H5a	2.141	-1.376	3.517	2.053
	POLCEO	H5b	16.909	1.790	15.119	6553.457
	CEOPIC	H5c	0.149	-0.182	0.332	0.075
Ignorance	INEDU	H6a	-0.186	-0.843	0.657	0.221
	REMDAYs	H6b	-0.013	-0.014	0.001	0.009
Greed	EXREMU (ACTUAL)	H7a	-1.69e-07	-1.05e-07	-6.39e-08	1.53e-07
	EXREMU (RATIO)	H7a	0.616	0.095	0.522	0.928

Following this, the Hausman Test generates the xtlogit summary based on the difference in coefficients as described below:

```
                b = consistent under Ho and Ha; obtained from xtlogit
      B = inconsistent under Ha, efficient under Ho; obtained from xtlogit

  Test:  Ho:  difference in coefficients not systematic

          chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                =      10.29
        Prob>chi2 =     0.0358
        (V_b-V_B is not positive definite)
```

The summary shows that the χ^2 value for the hypothesis is 10.29, while the p-value is 0.036. Since the p-value is lower than the χ^2 value (0.036 < 10.29), this research rejects H_0 and accepts logistic FE model as an appropriate model for Model 4 in predicting the likelihood of FFR among Malaysian PLCs.

1. Hausman Test on Model 1

The Hausman Test on Model 1 intends to indicate if either the lagged FE model or RE model is appropriate in predicting the likelihood of FFR based on lagged explanatory variables from the Fraud Triangle Model. Thus, the hypothesis is written as below:

H_0: Lagged Random-Effects model is appropriate for Model 1

H_1: Lagged Fixed-Effects model is appropriate for Model 1

Table 5 presents the results. It can be seen that the values of lagged variables for logistic FE model (b) is higher than the lagged RE model (B). These values suggest significant differences between (b) and (B), as well as the square-root (sqrt) of SE.

Table 5: Results of Hausman Test on Model 1

Dependent Variable: Fraudulent Financial Reporting (FFR)						
Fraud-Risk Factors	**Explanatory Variables**	**Hypotheses**	**(b) Fixed**	**(B) Random**	**(b-B) Difference**	**Sqrt [diag (V_b-v_B)]S.E.**
Incentive	GROWTH (ROA)L1	H1a	0.164	-2.262	2.426	0.215
	GROWTH (Δ Sales)L2	H1a	0.000	0.000	-0.000	-
Pressure	LEVL3	H1b	0.035	0.007	0.028	0.004
Opportunity	COMBODsL4	H2a	0.411	0.068	0.343	-
	ΔHIAL5	H2b	-0.424	-1.233	0.809	-
Attitude/ Rationalisation	HFRTsL6	H3a	0.000	-0.215	0.215	0.160
	ΔACCPOLL7	H3b	-0.255	-0.852	0.597	0.176

However, values for sqrt of SE for GROWTH(Δ Sales)L2, COMBODsL4 and ΔHIAL5 could not be determined. Following this, the Hausman Test generates the xtlogit summary based on the difference in coefficients as follows:

```
chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
        =   -11.37   chi2<0 ==> model fitted on these
                     data fails to meet the asymptotic
                     assumptions of the Hausman test;
                     see suest for a generalized test
```

The negative test statistic value of -11.37 is generated because specifying lagged values on several explanatory variables (i.e. GROWTH(SALES)L2, COMBODsL4 and ΔHIAL5) have resulted in misspecification of the model (Godfrey, 1978). The term "model fitted on these data fails to meet the asymptotic assumptions of the Hausman test" has suggested this research to conduct "seemingly unrelated estimation (Suest) Test". In this circumstance, a generalised Suest Test is more appropriate than the Hausman Test (Maddala & Lahiri, 1992). Different from the Hausman Test, the Suest Test generates z-scores and p-values. The z-scores measure SD, while p-values measure probabilities.

If the p-values are smaller than z-scores [in either a very high or a very low (negative) z-score], it is very unlikely that the observed data is represented by the H_0. In other words, the H_0 will be rejected if the p-values are smaller than z-score. Table 6 presents the result.

Table 6: Generalised Suest Test for Model 1

Dependent Variable: Fraudulent Financial Reporting (FFR)						
Fraud-Risk Factors	Lagged Explanatory Variables	Hypotheses	Coef.	Std. Err. (SE)	z-score	P > |z|
Incentive	GROWTH (ROA)L1	H1a	+0.164	0.567	0.29	0.773
	GROWTH (Δ Sales)L2	H1a	+0.000	0.000	0.81	0.419
Pressure	LEVL3	H1b	+0.035	0.027	1.30	0.193
Opportunity	COMBODsL4	H2a	+0.411	0.397	1.03	0.301
	ΔHIAL5	H2b	-0.424	0.542	-0.78	0.434
Attitude/ Rationalisation	HFRTsL6	H3a	+0.000	0.372	0.00	1.000
	ΔACCPOLL7	H3b	-0.255	0.441	-0.58	0.563

The robust values in coefficient (coef.) and standard error (SE) suggest an improved version of this model. Since most of the p-values are higher than the z- scores, this research fails to reject H_0, thus accepts lagged RE model as an appropriate model for Model 1.

2.   Hausman Test on Model 2

The Hausman Test on Model 2 intends to indicate either the lagged FE model or RE model is appropriate in predicting the likelihood of FFR based on lagged explanatory variables from the Fraud Diamond Model. Thus, the hypothesis is written as below:

H_0: Lagged Random-Effects model is appropriate for Model 2

H_1: Lagged Fixed-Effects model is appropriate for Model 2

Table 7 presents the results.

Table 7: Results of Hausman Test on Model 2

Dependent Variable: Fraudulent Financial Reporting (FFR)						
Fraud-Risk Factors	**Explanatory Variables**	**Hypotheses**	**(b) Fixed**	**(B) Random**	**(b-B) Difference**	**Sqrt [diag (V_b-v_B)] S.E.**
Incentive	GROWTH (ROA)L1	H1a	0.165	-0.938	1.103	0.584
	GROWTH (Δ Sales)L2	H1a	0.000	0.001	-0.001	-
Pressure	LEVL3	H1b	0.035	0.016	0.018	0.023
Opportunity	COMBODsL4	H2a	0.415	0.509	-0.094	0.192
	ΔHIAL5	H2b	-0.408	-1.067	0.658	-
Attitude/ Rationalisation	HFRTsL6	H3a	0.002	0.263	-0.261	0.208
	ΔACCPOLL7	H3b	-0.250	-0.614	0.365	0.221
Capability/ Competence	UNDPOLL8	H4a	-11.520	-14.179	2.660	-
	SPVACCL9	H4b	-0.006	-3.558	3.551	1.047

It can be seen that most of the lagged values FE model (b) are higher than the lagged RE model (B) except for GROWTH(ΔSales)L2, COMBODsL4 and HFRTsL6. These values suggest significant differences between (b) and (B), as well as the square-root (sqrt) of SE.

HFRTsL6 shows the lowest difference for (b-B) and SPVACCL9 show the highest difference for (b-B). Following this, the Hausman Test generates the xtlogit summary based on the difference in coefficients as described below:

```
                    b = consistent under Ho and Ha; obtained from xtlogit
         B = inconsistent under Ha, efficient under Ho; obtained from xtlogit

  Test:  Ho:  difference in coefficients not systematic

            chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                   =          16.28
            Prob>chi2 =      0.0010
            (V_b-V_B is not positive definite)
```

The summary shows that the χ^2 value is 16.28, while the p-value is 0.001. Since the p-value is smaller than the χ^2 value ($0.001 < 16.28$), this research rejects H_0 and accepts logistic FE model as an appropriate model for Model 2.

3.   **Hausman Test on Model 3**

The Hausman Test on Model 3 indicates either the lagged FE model or RE model is appropriate in predicting the likelihood of FFR based on lagged explanatory variables from Crowe's Fraud Pentagon Model. Thus, the hypothesis is written as follows:

H_0: Lagged Random-Effects model is appropriate for Model 3

H_1: Lagged Fixed-Effects model is appropriate for Model 3

Table 8 presents the results.

Table 8: Results of Hausman Test on Model 3

Dependent Variable: Fraudulent Financial Reporting (FFR)						
Fraud-Risk Factors	Explanatory Variables	Hypotheses	(b) Fixed	(B) Random	(b-B) Difference	Sqrt [diag (V_b-v_B)]S.E.
Incentive	GROWTH (ROA)L1	H1a	0.254	0.358	-0.104	0.577
	GROWTH (Δ Sales)L2	H1a	0.000	0.001	-0.000	0.000
Pressure	LEVL3	H1b	0.042	0.017	0.026	0.027
Opportunity	COMBODsL4	H2a	0.405	0.201	0.204	0.249
	ΔHIAL5	H2b	-0.391	-0.774	0.383	0.018
Attitude/ Rationalisation	HFRTsL6	H3a	0.015	0.153	-0.138	0.179
	ΔACCPOLL7	H3b	-0.220	-0.380	0.160	0.194
Capability/ Competence	UNDPOLL8	H4a	-11.744	-21.750	10.006	-
	SPVACCL9	H4b	0.171	-2.281	2.452	1.110
Arrogance	CEODUALL10	H5a	0.783	0.208	0.576	0.461
	POLCEOL11	H5b	-1.171	-0.273	-0.898	1.159
	CEOPICL12	H5c	-0.025	-0.278	0.253	0.027

It can be inferred that most of the lagged values in the FE model (b) are higher than the lagged RE model (B) except for GROWTH(ROA)L1, GROWTH(Δ Sales)L2, HFRTsL6 and POLCEOL11. These values suggest significant differences between (b) and (B), as well as the square-root (sqrt) of SE. However, similar to Model 1, not all values for sqrt of SE are generated. In this model, the sqrt of SE for UNDPOLL8 could not be determined. Following this, the Hausman Test generates the xtlogit summary based on the difference in coefficients as described below:

```
chi2(1) = (b-B)'[(V_b-V_B)^(-1)](b-B)
       =    -0.00    chi2<0 ==> model fitted on these
                     data fails to meet the asymptotic
                     assumptions of the Hausman test;
                     see suest for a generalized test
```

The negative test statistic value of -0.00 is generated because specifying lagged values to one of these explanatory variables (i.e. UNDPOLL8) has resulted in misspecification of the model.

Similar with Model 1, Stata has generated a conclusion stating "model fitted on these data fails to meet the asymptotic assumptions of the Hausman Test". As a result, a generalised Suest Test is conducted. Table 9 presents the result.

Table 9: Generalised Suest Test for Model 3

Dependent Variable: Fraudulent Financial Reporting (FFR)						
Fraud-Risk Factors	Lagged Explanatory Variables	Hypotheses	Coef.	Std. Err. (SE)	z-score	P > |z|
Incentive	GROWTH (ROA)L1	H1a	+ 0.254	0.544	0.47	0.641
	GROWTH (Δ Sales)L2	H1a	+ 0.000	0.000	0.71	0.479
Pressure	LEVL3	H1b	+ 0.042	0.029	1.47	0.141
Opportunity	COMBODsL4	H2a	+ 0.405	0.397	1.02	0.308
	ΔHIAL5	H2b	- 0.391	0.547	- 0.71	0.475
Attitude/ Rationalisation	HFRTsL6	H3a	+ 0.015	0.371	0.04	0.968
	ΔACCPOLL7	H3b	- 0.220	0.436	- 0.50	0.614
Capability/ Competence	UNDPOLL8	H4a	- 11.744	1.113	- 10.55	0.000
	SPVACCL9	H4b	+0.171	0.732	0.23	0.815
Arrogance	CEODUALL10	H5a	+ 0.783	0.611	1.28	0.200
	POLCEOL11	H5b	- 1.171	2.275	- 0.51	0.607
	CEOPICL12	H5c	- 0.025	0.057	- 0.44	0.663

Similar with Model 1, the robust values in coefficient (coef.) and SE suggests an improved version of this model. Since most of the p-values are higher than the z- scores, this research fails to reject H_0 and accepts lagged RE model as an appropriate model for Model 3.

4. Hausman Test on Model 4

The Hausman Test on Model 4 intends to indicate whether the lagged FE model or RE model is appropriate in predicting the likelihood of FFR based on all lagged explanatory variables. Thus, the hypothesis is written as follows:

H_0: Lagged Random-Effects model is appropriate for Model 4

H_1: Lagged Fixed-Effects model is appropriate for Model 4

Table 10 presents the results.

Table 10: Results of Hausman Test on Model 4

Dependent Variable: Fraudulent Financial Reporting (FFR)						
Fraud-Risk Factors	Explanatory Variables	Hypotheses	(b) Fixed	(B) Random	(b-B) Difference	Sqrt [diag (V_b-v_B)]S.E.
Incentive	GROWTH (ROA)L1	H1a	0.216	0.148	0.068	0.594
	GROWTH (Δ Sales)L2	H1a	0.000	0.000	-0.000	0.000
Pressure	LEVL3	H1b	0.042	0.015	0.028	0.027
Opportunity	COMBODsL4	H2a	0.358	0.154	0.204	0.263
	ΔHIAL5	H2b	-0.386	-0.563	0.177	0.111
Attitude/ Rationalisation	HFRTsL6	H3a	0.016	0.138	-0.122	0.178
	ΔACCPOLL7	H3b	-0.232	-0.437	0.205	0.185
Capability/ Competence	UNDPOLL8	H4a	-10.541	-23.499	12.958	-
	SPVACCL9	H4b	0.144	-1.977	2.120	1.087
Arrogance	CEODUALL10	H5a	0.797	0.073	0.724	0.500
	POLCEOL11	H5b	-0.957	-0.346	-0.611	1.228
	CEOPICL12	H5c	-0.018	-0.198	0.181	0.031
Ignorance	INEDUL13	H6a	-0.095	-0.651	0.556	-
	REMDAYsL14	H6b	0.004	0.008	-0.004	0.006
Greed	EXREMU (ACTUAL)L15	H7a	-2.36e-08	1.65e-09	-2.52e-08	6.27e-08
	EXREMU (RATIO)L16	H7a	0.070	0.000	0.070	0.098

It can be seen that most of the lagged values in the FE model (b) is higher than the lagged RE model (B), except for HFRTsL6, POLCEOL11 and EXREMU(ACTUAL)L15. These values suggest significant differences between (b) and (B), as well as the square-root (sqrt) of SE. However, similar with Model 1 and Model 3, not all values for sqrt of SE are generated. In this model, the sqrt of SE for UNDPOLL8 and INEDUL13 could not be determined. Following this, the Hausman Test generates the xtlogit summary based on the difference in coefficients as described follows:

```
                        b = consistent under Ho and Ha; obtained from xtlogit
            B = inconsistent under Ha, efficient under Ho; obtained from xtlogit

        Test:  Ho:  difference in coefficients not systematic

                chi2(1) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                        =    -0.00    chi2<0 ==> model fitted on these
                                      data fails to meet the asymptotic
                                      assumptions of the Hausman test;
                                      see suest for a generalized test
```

Similar with Model 1 and Model 3, negative test statistic value of -0.00 is generated because specifying lagged values to some explanatory variables (i.e. UNDPOLL8 and INEDUL13) has resulted in misspecification of the model. Similar with Model 1 and Model 3, Stata has generated a conclusion stating "model fitted on these data fails to meet the asymptotic assumptions of the Hausman Test". As a result, a generalised Suest Test is conducted. Table 11 presents the results.

Table 11: Generalised Suest Test for Model 4

Dependent Variable: Fraudulent Financial Reporting (FFR)						
Fraud-Risk Factors	Lagged Explanatory Variables	Hypotheses	Coef.	Std. Err. (SE)	z-score	P > | z|
Incentive	GROWTH (ROA)L1	H1a	+0.216	0.548	0.39	0.693
	GROWTH (Δ Sales)L2	H1a	+0.000	0.001	0.71	0.479
Pressure	LEVL3	H1b	+0.042	0.028	1.50	0.134
Opportunity	COMBODsL4	H2a	+0.358	0.389	0.92	0.358
	ΔHIAL5	H2b	-0.387	0.559	-0.69	0.489
Attitude/ Rationalisation	HFRTsL6	H3a	+0.016	0.373	0.04	0.966
	ΔACCPOLL7	H3b	-0.232	0.429	-0.54	0.588
Capability/ Competence	UNDPOLL8	H4a	-10.541	1.341	-7.86	0.000
	SPVACCL9	H4b	+0.144	0.740	0.19	0.846
Arrogance	CEODUALL10	H5a	+0.797	0.647	1.23	0.218
	POLCEOL11	H5b	-0.957	2.162	-0.37	0.715
	CEOPICL12	H5c	-0.0176	0.063	-0.28	0.780
Ignorance	INEDUL13	H6a	-0.095	0.220	-0.43	0.667
	REMDAYsL14	H6b	+0.004	0.010	0.44	0.659
Greed	EXREMU (ACTUAL)L15	H7a	-2.36e-08	8.50e-08	-0.28	0.781
	EXREMU (RATIO)L16	H7a	+0.070	0.085	0.82	0.411

The robust values in coefficient (coef.) and SE suggest an improved version of this model. Since most of the p-values are higher than the z- scores, this research fails to reject H_0 thus accepts lagged RE model as an appropriate model for Model 4.

Specifying Lagged Explanatory Variables on the Fixed-Effects Models

1. Lagged Variables on Model 1

In Model 1, seven lagged explanatory variables [i.e. GROWTH (ROA)L1, GROWTH (Δ Sales)L2, LEVL3, COMBODsL4, ΔHIAL5, HFRTsL6 and ΔACCPOLL7] are chosen to represent five fraud-risk factors (i.e. incentive, pressure, opportunity, attitude and rationalisation) from the Fraud Triangle Model. Table 1 presents the results.

Table 1: Lagged Explanatory Variables on Logistic Fixed-Effects of Model 1

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	**Lagged Explanatory Variables**	**Hypotheses**	**Coef.**	**Std. Err. (SE)**	**z-score**
Incentive	GROWTH (ROA)L1	H1a	+0.164	0.931	0.18
	GROWTH (Δ Sales)L2	H1a	+0.000	0.001	0.52
Pressure	LEVL3	H1b	+0.0349	0.037	0.93
Opportunity	COMBODsL4	H2a	+0.411	0.442	0.93
	ΔHIAL5	H2b	-0.424	0.520	0.82
Attitude/ Rationalisation	HFRTsL6	H3a	+0.000	0.391	0.00
	ΔACCPOLL7	H3b	-0.255	0.453	0.56

All lagged explanatory variables in Model 1 are not significant with the DV. Two lagged variables have opposite relationships (negative coefficient) with the DV (i.e. ΔHIAL5 and ΔACCPOLL7). GROWTH (ROA)L1 displays the highest SE, which suggests the highest measure of dispersion (or variability) in the predicting the likelihood of FFR. In contemporary logistic FE models, three explanatory variables (i.e. COMBODs, ΔHIA and ΔACCPOL) were found positively significant with the DV. Specifying lagged values on Model 1 has not only resulted in these explanatory variables to be not significant, but also demonstrates opposite relationships with the DV (i.e. ΔHIAL5 and ΔACCPOLL7).

2. Lagged Variables on Model 2

In Model 2, nine lagged explanatory variables [i.e. GROWTH (ROA)L1, GROWTH(Δ Sales)L2, LEVL3, COMBODsL4, ΔHIAL5, HFRTsL6, ΔACCPOLL7, UNDPOLL8 and SPVACCL9] are chosen to represent six fraud-risk factors (i.e. incentive, pressure, opportunity, attitude, rationalisation and capability/competence) from the Fraud Diamond Model.

Table 2 presents the results.

Table 2: Lagged Explanatory Variables on Logistic Fixed Effect of Model 2

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	**Lagged Explanatory Variables**	**Hypotheses**	**Coef.**	**Std. Err. (SE)**	**z-score**
Incentive	GROWTH (ROA)L1	H1a	+0.165	0.935	0.18
	GROWTH (Δ Sales)L2	H1a	+0.000	0.001	0.52
Pressure	LEVL3	H1b	+0.035	0.037	0.93
Opportunity	COMBODsL4	H2a	+0.415	0.442	0.94
	ΔHIAL5	H2b	-0.408	0.522	0.78
Attitude/ Rationalisation	HFRTsL6	H3a	+0.002	0.394	0.01
	ΔACCPOLL7	H3b	-0.250	0.453	0.55
Capability/ Competence	UNDPOLL8	H4a	-11.520	1159.09	0.01
	SPVACCL9	H4b	-0.006	1.077	0.01

Similar with Model 1, all lagged explanatory variables in Model 2 are also not significant. However, instead of two lagged variables in Model 1 (i.e. ΔHIAL5 and ΔACCPOLL7), four lagged variables demonstrate opposite relationships (negative coefficient) (i.e. ΔHIAL5, ΔACCPOLL7, UNDPOLL8 and SPVACCL9). UNDPOLL8 has the strongest relationship with the DV although demonstrates a negative coefficient (coefficient = -11.520).

Additionally, UNDPOLL8 also displays the highest SE. In contemporary logistic FE model, three explanatory variables (i.e. COMBODs, ΔHIA and ΔACCPOL) were found positively significant. Specifying lagged values on Model 2 has not only resulted in these explanatory variables to be not significant, but also demonstrate opposite relationship (i.e. ΔHIAL5 and ΔACCPOLL7).

3. Lagged Variables on Model 3

In Model 3, twelve lagged explanatory variables [i.e. GROWTH (ROA)L1, GROWTH(Δ Sales)L2, LEVL3, COMBODsL4, ΔHIAL5, HFRTsL6, ΔACCPOLL7, UNDPOLL8, SPVACCL9, CEODUALL10, POLCEOL11 and CEOPICL12] are chosen to represent seven fraud-risk factors (i.e. incentive, pressure, opportunity, attitude, rationalisation, capability/competence and arrogance) from Crowe's Fraud Pentagon Model. Table 3 presents the results.

Table 3: Lagged Explanatory Variables on Logistic Fixed Effect of Model 3

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	Lagged Explanatory Variables	Hypotheses	Coef.	Std. Err. (SE)	z-score
Incentive	GROWTH (ROA)L1	H1a	+0.254	0.938	0.27
	GROWTH (Δ Sales)L2	H1a	+0.000	0.001	0.45
Pressure	LEVL3	H1b	+0.042	0.038	1.13
Opportunity	COMBODsL4	H2a	+0.405	0.447	0.91
	ΔHIAL5	H2b	-0.391	0.523	0.75
Attitude/ Rationalisation	HFRTsL6	H3a	+0.015	0.400	0.04
	ΔACCPOLL7	H3b	-0.220	0.461	0.48
Capability/ Competence	UNDPOLL8	H4a	-11.744	1265.227	0.01
	SPVACCL9	H4b	+0.171	1.137	0.15
Arrogance	CEODUALL10	H5a	+0.783	0.652	1.20
	POLCEOL11	H5b	-1.171	1.420	0.82
	CEOPICL12	H5c	-0.025	0.058	0.43

Similar with Model 1 and Model 2, all lagged explanatory variables in Model 3 are also not significant. Instead, the number of lagged variables with negative relationships has increased from 4 to 5 (i.e. ΔHIAL5, ΔACCPOLL7, UNDPOLL8, POLCEOL11 and CEOPICL12). The inclusion of CEODUALL10, POLCEOL11 and CEOPICL12 into this model has changed SPVACCL9 from negative coefficient to positive coefficient in respect to the relationship.

Consistent with Model 2, UNDPOLL8 maintains the strongest relationship (coefficient = -11.744). Similarly, UNDPOLL8 also displays the highest SE. In contemporary logistic FE model, three explanatory variables (i.e. ΔHIA, ΔACCPOL and SPVACC) were found positively significant. Specifying lagged values on Model 3 has not only resulted in these explanatory variables to be not significant, but also demonstrates opposite relationship (i.e. ΔHIAL5 and ΔACCPOLL7).

4.   Lagged Variables on Model 4

In Model 4, sixteen lagged explanatory variables [i.e. GROWTH (ROA)L1, GROWTH(Δ Sales)L2, LEVL3, COMBODsL4, ΔHIAL5, HFRTsL6, ΔACCPOLL7, UNDPOLL8, SPVACCL9, CEODUALL10, POLCEOL11, CEOPICL12, INEDUL13, REMDAYsL14, EXREMU(ACTUAL)L15 and EXREMU(RATIO)L16) are chosen to represent nine fraud-risk factors (i.e. incentive, pressure, opportunity, attitude, rationalisation, capability/competence, arrogance, ignorance and greed).

Table 4 presents the results.

Table 4: Lagged Explanatory Variables on Logistic Fixed Effect of Model 4

Dependent Variable: Fraudulent Financial Reporting (FFR)					
Fraud-Risk Factors	Lagged Explanatory Variables	Hypotheses	Coef.	Std. Err. (SE)	z-score
Incentive	GROWTH (ROA)L1	H1a	+0.216	0.959	0.23
	GROWTH (Δ Sales)L2	H1a	+0.000	0.001	0.52
Pressure	LEVL3	H1b	+0.042	0.038	1.11
Opportunity	COMBODsL4	H2a	+0.358	0.451	0.79
	ΔHIAL5	H2b	-0.386	0.531	0.73
Attitude/ Rationalisation	HFRTsL6	H3a	+0.016	0.403	0.04
	ΔACCPOLL7	H3b	-0.232	0.462	0.50
Capability/ Competence	UNDPOLL8	H4a	-10.541	816.750	0.01
	SPVACCL9	H4b	+0.144	1.126	0.13
Arrogance	CEODUALL10	H5a	+0.797	0.675	1.18
	POLCEOL11	H5b	-0.957	1.531	0.63
	CEOPICL12	H5c	-0.018	0.060	0.29
Ignorance	INEDUL13	H6a	-0.095	0.184	0.52
	REMDAYsL14	H6b	+0.004	0.009	0.48
Greed	EXREMU (ACTUAL)L15	H7a	-2.36e-08	8.56e-08	0.28
	EXREMU (RATIO)L16	H7a	+0.070	0.201	0.35

All lagged explanatory variables in Model 4 are also not significant, which are consistent with Model 1, Model 2 and Model 3. The inclusion of INEDUL13, REMDAYsL14, EXREMU(ACTUAL)L15 and EXREMU(RATIO)L16 into this model has not only maintained similar lagged variables with negative coefficients from Model 3 (i.e. ΔHIAL5, ΔACCPOLL7, UNDPOLL8, POLCEOL11 and CEOPICL12) but has also added two more negative lagged variables [i.e. INEDUL13 and EXREMU (ACTUAL)L15].

411

Consistent with Model 2 and Model 3, UNDPOLL8 maintains the strongest relationship (coefficient = -10.541). Similarly, UNDPOLL8 also displays the highest SE. In contemporary logistic FE model), two explanatory variables (i.e. ΔHIA and ΔACCPOL) were found positively significant. Specifying lagged values on Model 4 has not only resulted in these explanatory variables to be not significant, but also demonstrates opposite relationship (i.e. ΔHIAL5 and ΔACCPOLL7). In short, specifying lagged explanatory variables in Model 1, Model 2, Model 3 and Model 4 has caused all proxy variables to be not significant.