
The Effect of the External Auditors' Ability to Assess Fraud Risk on Their Ability to Detect the Likelihood of Fraud

Nahariah Jaffar*

Faculty of Management, Multimedia University

Arfah Salleh

Graduate School of Management, Universiti Putra Malaysia

Takiah Mohd Iskandar

Faculty of Economics and Business Management, Universiti Kebangsaan Malaysia

Hasnah Haron

School of Management, Universiti Sains Malaysia

ABSTRACT

The Malaysian Approved Standards on Auditing, AI 240 on "Fraud and Error" (MIA, 1997) requires the auditor to assess the risk of fraud and error during the audit of financial statements. Based on the risk assessment, the auditor should design audit procedures to obtain reasonable assurance that misstatements arising from fraud and error that are material to the financial statements taken as a whole are detected. Inability of the external auditor to detect material misstatements, particularly intentional misstatements, may expose the external auditor to litigation. The present study aims to examine the effect of the external auditor's ability to assess fraud risk on his/her ability to detect the likelihood of fraud.

An experimental approach is adopted by sending case materials to audit partners and audit managers attached to auditing firms operating in Malaysia. The result shows that in a high fraud risk scenario, the external auditor's ability to assess fraud risk has a positive effect on his/her ability to detect the likelihood of fraud, whereas in a low fraud risk scenario not. The findings may provide insights into the external auditors' judgment in fraud risk assessment and detection of fraud which could be beneficial to auditing firms seeking to improve processes to maintain their viability in the auditing industry.

Keywords: Fraud, External Auditor, Fraud Risk Assessment, Detection of Fraud, Ability

INTRODUCTION

The Malaysian Approved Standards on Auditing, AI 700 on "The Auditor's Report on Financial Statements" (MIA, 1997) states that the responsibility of the auditor is to provide assurance that the financial statements are free from material misstatements. Misstatements may be due to error or fraud. Error is unintentional misstatement while fraud is intentional misstatement. Fraud, which can be divided into

* Corresponding Author: Nahariah Jaffar

Email address: nahariah.jaffar@mmu.edu.my

Phone: +603 8312 5678 Fax: +603 8312 5590

two types i.e. fraudulent financial reporting and misappropriation of assets, may both cause materially misleading financial statements (Elliot and Willingham, 1980).

The Malaysian Approved Standards on Auditing, AI 240 on "Fraud and Error" (MIA, 1997) requires the auditor to assess the risk of fraud and error during the audit of financial statements. Based on the risk assessment, the auditor should design audit procedures to obtain reasonable assurance that misstatements arising from fraud and error that are material to the financial statements taken as a whole are detected. The external auditor may be exposed to litigation, if he/she is unable to detect material misstatements, particularly intentional misstatements. As such, fraudulent financial reporting is a critical problem for external auditors because of the damage to professional reputation that results from public dissatisfaction about undetected fraud (Kaminski, 2002).

Fraudulent financial reporting has occurred in many countries (e.g. Mitchell, 1997; Grant, 1999 and Spathis, 2002). Researchers in some countries like the United Kingdom (UK) and United States (US) have reported the seriousness of fraud activities (e.g. Tyler, 1997; Wells, 1997; Mitchell, 1997; Vanasco, 1998; and Grant, 1999). Estimates of the annual cost of fraud for the UK range from a few billion pounds to over £10 billion (Grant, 1999). Meanwhile, Mitchell (1997) indicates that the Association of Certified Fraud Examiner (ACFE) reported costs of US\$15 billion involving 2,608 reported cases over the last ten years. For the Malaysian scenario, for the last ten to fifteen years, Malaysia has not been spared from being confronted by case after case of fraudulent activities in its public companies. Examples include the cases of Bank Rakyat, Bumiputra Malaysia Finance (BMF), Pan Electric Group of Companies, Perwira Habib Bank, Deposit Taking Cooperatives (DTCs) and Cooperative Central Bank (CCB) (Ali, 1994). KPMG Malaysia (2003) in their Fraud Survey 2002 Report states that from 168 responses from chief executives of public listed and top private companies in Malaysia, 50% of them had experienced fraud in their organization. Forty percent of the companies claimed that they had suffered losses between RM10,001 and RM100,000 over the past years (i.e. a period from January 2001 to December 2002) due to fraud, 33% above RM1 million, while 12% reported incurring losses of RM10,000 and below.

Sarbane Oxley Act was established in 2002 to introduce major changes to the regulation of corporate governance and financial practice. Although the establishment of this Act can be considered as an action taken to reduce the possibility of committing to fraudulent activities, however, fraud incidence still occurs. For example, in 2005, nine food industry employees in the US were indicted with aiding and abetting the massive financial fraud at US Foodservice, a division of Dutch retail group Ahold. The nine worked for food companies supplying food to the company, and were alleged to have colluded with US Foodservice officials to falsify accounting records to the tune of \$800 million (<http://www.foodproduction.daily.com/news/ng.asp?n=57354-nine-charged-in>).

Similarly, in Malaysia, despite standards and guidelines were issued, yet the fraudulent financial reporting still occurred in this country as reported by the KPMG Malaysia (2003). Although the issue of fraud may not be well documented in Malaysia, this issue cannot be taken for granted since what happens in other countries for instance in the US may happen elsewhere. Even though guidance has already been provided by the Malaysian standards, KPMG Malaysia (2003) reported that the external auditors discovered only 4% of fraud incidences in Malaysian companies. Due to this, the public may question why auditors are not able to detect fraud during the conduct of the annual audit. Therefore, it is important to know the ability of the external auditors to detect fraud because fraudulent financial reporting is false representation to society. The research question is, given all the guidance, to what extent are the external auditors able to detect the likelihood of fraud and what are the factors that influence the external auditors' ability to detect the likelihood of fraud?

Objective of the study

The Standards emphasise the importance of performing fraud risk assessment during the conduct of the audit (AI 240, MIA, 1997; AI 400, MIA, 1997). The external auditors are expected to assess fraud risk at the planning stage of the audit work (AI 240, MIA, 1997). The Malaysian Approved Standards on Auditing, AI 300 on “Planning” (MIA, 1997) requires the external auditor to appropriately assess fraud risk in the conduct of the audit so that reasonable assurance can be given that material misstatement in the financial statements has been detected. Loebbecke, Eining and Willingham (1989), Shibano (1990) and Zimbelman (1996) have recommended that explicitly assessing fraud risk, as an audit planning task, will improve auditor’s ability to detect fraud. Para 9 of Malaysian Approved Standards on Auditing, AI 400 on “Risk Assessments and Internal Control” (MIA, 1997) specifically states that, among others, the auditor should consider the assessment of control and inherent risks in order to identify the types of potential misstatements that could occur in the financial statements.

With such requirement made by the standards, the ability to assess fraud risk in the present study shall reflect the ability to assess both inherent and control risks of fraud since the standard requires these risks to be assessed in combination. It is expected that if an accurate assessment of fraud risk is made it will lead to detection of the likelihood of fraud. Therefore, the objective of the present study is to examine the effect of the external auditors’ ability to assess fraud risk on their ability to detect the likelihood of fraud.

Malaysian Approved Standards on Auditing AI 240 on “Fraud and error”

The purpose of AI 240 is to provide guidance on the auditor’s responsibility to consider fraud and error in an audit of financial statements. AI 240 (MIA, 1997) paragraphs (5) and (6) underline the responsibility of corporate management and external auditor concerning fraud and error. Paragraph (5) states, that the prevention and detection of fraud and error rest with corporate management through the implementation and continued operation of adequate accounting and internal control systems. As such, paragraph (6), indicates that the auditor is not and cannot be held responsible for the prevention of fraud and error and the fact that an annual audit is carried out may, however, act as a deterrent for fraud. The main responsibilities of the auditor with regards to fraud and error as specified by the standard is firstly, to assess the risk that fraud and error may cause financial statements to contain material misstatements. In addition, auditors should inquire from management as to any fraud or significant errors that are discovered. The auditor in assessing the risk of fraud should consider the various fraud risk indicators. Secondly, based on the risk assessment, the auditor should design audit procedures to obtain reasonable assurance that misstatements arising from fraud and error that are material to the financial statements taken as a whole, are being detected. Besides that, paragraph (10) requires the auditor to seek sufficient appropriate audit evidence that fraud or error, that may be material to the financial statements, have not occurred. If they have occurred, the effect of fraud should be properly reflected in the financial statements or the error is corrected.

AI 240 (MIA, 1997) provides examples of conditions and events, which may increase the risk of fraud and error. Altogether the 25 risk factors are classified into five categories: (i) integrity or competence of management; (ii) unusual pressures within or on an entity; (iii) unusual transactions; (iv) problems in obtaining sufficient appropriate audit evidence; and (v) factors unique to a computer information systems environment. These risk factors, among others, should be assessed by the external auditor when conducting the audit.

This standard does not provide any specific procedure on how the external auditor should assess the fraud risk and detect the fraud. Thus, it lies with the auditor to use his/her professional judgment when performing such tasks.

Malaysian Approved Standards on Auditing AI 400 on "Risk assessment and internal control"

The purpose of AI 400 is to provide guidance on obtaining an understanding of the accounting and internal control systems and on risk and its components: inherent risk, control risk and detection risk. The auditor is required to use his/her professional judgment to assess audit risk and to design audit procedures to ensure it is reduced to an acceptably low level. The standard indicates that the inherent risk and control risk are highly interrelated. If the auditor attempts to assess inherent and control risk separately, there is a possibility of inappropriate risk assessment. As a result, audit risk may be more appropriately determined in such situations by making a combined assessment. Meanwhile, the control risk and inherent risk assessments influence the nature, timing and extent of substantive procedures to be performed to reduce detection risk, and therefore audit risk, to an acceptably low level.

PRIOR RESEARCH

Fraud detection

The factors examined by studies on the ability to detect the likelihood of fraud can be categorized into several dimensions: (1) fraud risk indicators, (2) auditor's roles, (3) audit firm's roles, (4) audit firm's characteristics, (5) auditor's characteristics, (6) auditor's ethical status, (7) cognitive factors, (8) personality, and (9) audit task.

The fraud risk indicators dimension includes factors such as quality of internal control (Matsumura and Tucker, 1992), and client integrity and competence (Bernardi, 1994). Moet (1997) treated the variable fraud risk indicators in aggregate by referring to them as "high fraud risk" or "low fraud risk". In contrast, Krambia-Kapardis (2002) provided subjects with a list of fraud indicators. Meanwhile, the auditor's roles dimension includes factors such as awareness of the high risk audit areas and evaluation of management integrity and competence (Krambia-Kapardis, 2002). On the other hand, audit firm's role dimension includes providing incentives to probe fraud, ensuring that there is no pressure to complete the audit, and ensuring that management has not restricted the scope of the work (Krambia-Kapardis, 2002). Audit firm's characteristics dimension includes size (Moyes and Hasan, 1996; Owusu-Ansah, 2002), peer-review, prior success in detecting fraud (Moyes and Hasan, 1996), and practice review experience of auditor's firm (Owusu-Ansah et al., 2002). Meanwhile, auditor's characteristics dimension includes experience (e.g. Pincus, 1984, Moyes and Hasan, 1996), ability, motivation, prior probabilities about the existence of fraud (Pincus, 1984), auditor's penalty and audit fee (Matsumura and Tucker, 1997), CPA qualification, types of auditor (Moyes and Hasan, 1996), and tenure of auditor (Owusu-Ansah et al., 2002). In addition, auditor's ethical status dimension includes moral development (Bernardi, 1994). Cognitive factors dimension tests factors such as standard representations and multiple representations (Jamal, Johnson and Berryman, 1995), and perceptual readiness (Moet, 1997). Meanwhile, the personality dimensions includes category width (Pincus, 1984), field dependence/independence (Pincus, 1984; Bernardi, 1994), locus of control (Bernardi, 1994), and ambiguity tolerance/intolerance (Pincus, 1984; Zimelman and Waller, 1999). Finally, the audit task dimension includes audit plan (Matsumura & Tucker, 1992; Moyes and Hasan, 1996; Braun, 2000), and risk assessment (Waller, 1993; Krambia-Kapardis, 2002).

From the analysis of the literature, the present study discovers that many researchers, namely, Pincus (1984), Bernardi (1994), Moyes and Hasan (1996), Owusu-Ansah et al. (2002) and Carpenter et al. (2002) are in agreement that the auditor's experience is a significant factor that may affect the ability to detect the likelihood of fraud. However, Bernardi (1994) reports that only manager with high morals will outperform the senior. Only four studies (Bernardi, 1994; Matsumura and Tucker, 1997; Moet, 1997; and Krambia-Kapardis, 2002) have examined the influence of fraud risk indicators on the auditor's ability to detect the likelihood of fraud. The studies by Matsumura and Tucker (1997) and Bernardi (1994) examine the individual indicator while Moet (1997) examines the indicators in aggregate. The internal control quality (Matsumura and Tucker, 1997) can be classified as an indicator of control risk and client integrity and competence (Bernardi, 1994) as indicators of inherent risk. Meanwhile Moet (1997) in her experiment, controls the inherent and control risks indicators in aggregate. On the other hand, Krambia-Kapardis (2002) provides subjects with a list of fraud indicators and requires them to state which of the fraud indicator/s was/were applicable to the fraud incidence that they had experienced.

Analysis of the previous studies on fraud detection also discovered that only two studies (Waller, 1993; Krambia-Kapardis, 2002) examined the effect of the external auditor risk assessment task on the ability to detect the likelihood of fraud. Waller (1993), however, tests only the association between inherent risk assessment and rate of detection of the misstatement. The AI 400 (MIA, 1997), on the other hand, indicates that the inherent and control risks are highly interrelated and therefore should be assessed in combination. Additionally, Waller (1993) does not specify whether the focus of his study is on unintentional misstatement (error) or intentional misstatement (fraud). Meanwhile, Krambia-Kapardis (2002) develops a model called "Eclectic Fraud Detection" model (EFD) which aims to enhance the auditor's fraud detection ability. According to Krambia-Kapardis (2002), a basic premise of the EFD model is that fraud detection is preceded by a pattern-recognition/fraud risk-assessment decision-making process. In order to adopt the EFD model, rationalizations, opportunity and crime-prone personality (ROP) risk assessment model must be utilized. This fraud risk assessment model, however, is more or less resembled a prediction model when the subjects were actually required to indicate from the list provided, fraud risk indicators that were related to the fraud incidences that they had experienced. As a result her study may have recall and maturation problems because respondents are required to recall those fraud incidences that they had experienced. In addition, researchers (e.g. Arkes, Dawes and Christensen, 1986; Boatsman, Moeckel and Pei, 1997; Sutton, Young and McKenzie, 1994 etc.) have provided evidence that auditors are actually reluctant to use decision model in assessing fraud risk.

The present study notes that in both studies (Waller, 1993; Krambia-Kapardis, 2002) there is no requirement for the auditor to actually perform the fraud risk assessment task. The ability to assess fraud risk had never been tested in the fraud detection literature. This lack of attention by researchers should not be ignored because if research has not been conducted the potential factors influencing external auditors' ability to detect fraud might not be understood. Consequently, the inability of the external auditor to detect the likelihood of fraud remains unresolved or reduced.

In the light of the studies discussed so far, this paper seeks to expand the literature by providing evidences on the fraud detection ability of the external auditors in Malaysia. Particularly, this paper will be focusing on the audit task dimension, specifically fraud risk assessment. Notwithstanding the importance of the other eight dimensions, the focus is given to this dimension because AI 240 stated that fraud risk assessment is one of the tasks that external auditors should perform during the conduct of the audit. As noted by AI 300 and AI 400, the inherent and control risk assessment is among the factors that should be considered by the auditor to enable the auditor to design appropriate audit procedures. In general, an audit plan should be tailored accordingly based on the assessed fraud risk (e.g. Konrath, 1989; Kanter, McEnroe and Kyes,

1990; Morton and Felix, 1991; Byrne, 1991; Sittenfeld, 1991; Waller, 1993; MIA, 19977; Mock and Wright, 1999). When consideration is given to the risk factors during risk assessment, this will influence the effectiveness and/or the efficiency of the audit plan (Zimbelman, 1996).

The above discussion has given insight concerning the importance of the fraud detection issue. With that, the present study takes the first attempt to examine the effect of external auditors' ability to assess fraud risk (i.e. the combined assessment of inherent and control risks) on their ability to detect the likelihood of fraud. The subjects of the present study are required to perform fraud risk assessment within case materials given to them. In compliance with the standard, the focus of the present study will be on the combined assessment of inherent risk and control risk for fraud. It is hoped that the present study may reduce the gap in the fraud detection literature by investigating the said factors (i.e. ability to detect the likelihood of fraud and ability to assess fraud risk) within a decision-making context based on case study information.

Fraud risk assessment

Nieschwietz, Schultz and Zimbelman (2000) classified the fraud risk assessment research into three subheadings: 1) research that provides empirical predictors of fraud which test the validity of fraud indicators; 2) research on auditors' unaided fraud risk assessments which investigates the processes auditors use to assess fraud risk and measure their performance in doing so; and 3) research on mechanically aided fraud risk assessments which discusses methods of assisting auditors in their fraud risk judgments.

Various fraud risk indicators have been validated to examine its fraud predictive ability. Some indicators tested are those provided by the SAS No. 53 (e.g. Loebbecke et al., 1989; Bell et al., 1991) and certain study replicated the indicators that have been tested earlier by another researcher, for instance Hansen, McDonald, Messier and Bell (1996) examined the same fraud indicators used by Bell et al. (1991). Types of fraud risk indicators investigated comprises of qualitative factors (e.g. Albrecht and Romney, 1986; Loebbecke et al., 1989; Bell et al., 1991) and quantitative indicators (e.g. Summers and Sweeney, 1998; Spathis, 2002).

The early studies (Joyce and Biddle, 1981a and Joyce and Biddle, 1981b) on unaided fraud risk assessment focus on the psychological aspects related to auditors' fraud risk judgments. Some studies on fraud risk assessment discuss the component of audit risk model. In this regards, the issue varies from the judgment aid uses of the audit risk model (Shibano, 1990); the association between inherent and control risk (Waller, 1993), to the effects on the inherent risk, detection risk and overall audit risk when the auditor uses the auditee's report that contain fraud (Newman, Patterson and Smith, 2001). The present study believes that a discussion of audit risk model is significant because the model may assist the external auditor to plan the work through identifying the various types of risk and collecting sufficient appropriate audit evidence, especially in a situation where fraud may occur. The focus of the present study is indirectly on the components of the audit risk model, specifically on the inherent and control risk of fraud.

Studies on mechanically aided fraud risk assessment discussed the methods that may assist auditors in making fraud risk assessment judgments (Nieschwietz et al, 2000) including methods such as checklist (Pincus, 1989), statistical model (Loebbecke et al., 1989; Krambia-Kapardis, 2002) and expert system (Green and Choi, 1997). With the advancement in technology, Eining, Jones and Loebbecke (1997) and Green and Choi (1997) suggested the expert system and neural network as tools to enhance risk assessment. Meanwhile, Krambia-Kapardis's (2002) rationalization, opportunity and crime-prone personality (ROP) model was developed based on theories of criminal behaviour.

ATTRIBUTION THEORY AND HYPOTHESIS DEVELOPMENT

Attribution theory was introduced by Kelley in 1967. According to the attribution theory, the level of future expected performance, in a particular task depends mainly on the particular causes to which prior success or failure in the same task is attributed. Following this lead, Weiner, Frieze, Kukla, Reed, Rest and Rosenbaum (1971) argue that the effect of previous success or failure on subsequent expectations varies according to whether the attribution is internal (ability, effort) or external (luck, task difficulty). Specifically, Weiner et al. (1971) propose that (a) following a success experience, there is a positive relationship between attribution to stable causes (internal causes, like ability, effort) and expected future performance, and (b) following a failure experience, there is a positive relationship between attribution to unstable causes (external causes: viz., luck, task difficulty) and expected future performance.

The argument for the first prediction is that prior success perceived as due to stable causes, like ability and effort, will be viewed as having a greater chance of being repeated than success due to unstable causes, for the reason that stable factors are seen as more likely to continue in the future than unstable ones (Weiner et al., 1971). Meanwhile, for the second prediction, the argument is that prior failure perceived as due to unstable cause, like luck and task difficulty, will be viewed as easier to overcome in the future than failure due to stable causes, and hence likely to have less of a depressing effect on anticipations of future performance.

Wilks and Zimelman (2004) state that research in attribution theory suggests that people tend to explain or predict negative behaviours (such as fraud) more in terms of a person's attitude or disposition than the situational pressures or opportunities surrounding them (Ybrra and Stephan, 1999).

Example of researches in job performance that adopt this theory are those of Orpen (1980) and Taggar and Neubert (2004). Orpen (1980) examines the predictions of the attribution theory, advanced by Weiner et al. (1971), among employees doing their real-life jobs. The results confirm the argument advanced by Weiner et al. (1971) regarding the effect of past success or failure on future expected performance in the same task. Taggar and Neubert (2004), on the other hand, test assertions that attribution theory can explain the responses of peers to the characteristics of a performing team member. Among others, the study found that behavioural manifestations of cognitive ability and conscientiousness were associated with causal attributions.

In accounting literature, Kaplan and Reckers (1985) and Kaplan and Reckers (1993) empirically applied attribution theory to performance in public accounting. Kaplan and Reckers (1993), examine the effects of subordinate's explanation for substandard performance on evaluation judgments. It was found that causal attributions influence both the subjects' end-of-job performance ratings and their tendency to work with a subordinate on future assignments.

This theory is appropriate to the present study, because of the need to assess the causal attribution of the external auditors' performance, i.e. ability to detect the likelihood of fraud. Applying this theory to the present study, the level of the future expected ability to detect the likelihood of fraud is attributed to the external auditors' prior ability to assess the level of fraud risk. Since the primary interest of the present study is to examine the effect of the external auditors' ability to assess the level of fraud risk on their ability to detect the likelihood of fraud, thus, it is assumed that any prior success (or failure) in assessing the level of fraud risk will have a positive impact (negative impact) on the external auditors' ability to detect the likelihood of fraud, if fraud actually exist.

The external auditor is required by AI 400 (MIA, 1997) to consider, among others, the inherent and control risks assessment in identifying the types of potential material misstatements that could occur in financial statements. Explicitly assessing fraud risk has been recommended as an audit planning task that will improve the auditor's ability to detect fraud (e.g. Loebbecke et al., 1989; Shibano, 1990). The inherent and control risk depends on factors such as auditee conditions, controls, and information about risk factors (Waller, 1993). For instance, an auditor who perceives weak controls would assess both control risk and inherent risk as high because weak controls induce error-prone conditions, assuming other things being equal (Waller, 1993).

According to this theory, the effect of previous success or failure in detecting the likelihood of fraud on subsequent expectations varies according to whether the attribution is internal (i.e. ability to assess fraud risk) or external (e.g. difficulty of the fraud risk assessment task). People tend to ascribe success to high ability or high effort and failure to low ability or low effort (Heider, 1958). In the present study, however, focus is given on the internal attribution. The ability of the external auditors is considered as a stable cause. Therefore prior success (or failure) of the ability of the external auditors to assess fraud risk is viewed as having a greater chance of being repeated, that is through the subsequent ability to detect the likelihood of fraud. In other words, if the external auditors able to appropriately assess fraud risk (AI 240, MIA, 1997) based on their professional judgments (AI 240, AI 400, MIA, 1997), this attribution will subsequently influence the ability of the external auditors to detect the likelihood of fraud as required by AI 240 (MIA 1997).

With the assumption that other factors will remain constant, the present study predicts that the external auditors' ability to assess fraud risk will influence their ability to detect the likelihood of fraud in a positive direction. In order to test whether the requirements of AI 240 (MIA, 1997), AI 400 (MIA, 1997), the literature and the insight of the Attribution Theory are held, the present study hypothesizes that the external auditors' ability to assess fraud risk has a positive effect on their ability to detect the likelihood of fraud. With that, the hypothesis to be tested is:

H: Ability to assess fraud risk is positively related to ability to detect the likelihood of fraud.

RESEARCH METHOD

Research design

The present study adopts a factorial experimental design. Many studies in the fraud detection literature adopt experimental approach (e.g. Bernardi, 1994; Jamal et al., 1995; Moet, 1997 etc.), thus the present study may conclude that it is the best approach that may provide practical insights of the external auditors' task performance. The study has only one independent variable, i.e. ability to assess fraud risk with two treatment levels which are correct fraud risk assessed and incorrect fraud risk assessed.

Research instrument

The case material utilized in the present study is adopted from that used by Zimbelman (1996), Brief, Dukerich, Brown and Brett (1996), and Moet (1997). Two versions of case study are developed for XYZ Manufacturing Bhd. and the subjects are required to assume that they are involved in the audit this company. A manufacturing company is selected because companies in the manufacturing industry ranks among the highest in committing fraud (Baglia, 2000; Loebbecke et al., 1989). The two versions of the case materials are classified as follows:

- Version 1 is a high fraud risk case; and
- Version 2 is a low fraud risk case.

In order to create the high and low fraud risk scenarios, each version of the case materials are seeded with fraud risk indicators. Version 1 is seeded with many indicators of high fraud risk and Version 2 is seeded with many indicators of low fraud risk. The fraud risk indicators are operationalised by including the various fraud risk indicators stated in the AI 240 (MIA, 1997) and literature in the case materials.

In order to assess the subjects' ability to assess fraud risk, the case materials require the subjects to provide their assessment of the fraud risk. This task or judgment should be undertaken by considering and evaluating the various fraud risk indicators provided in the case materials.

The case materials are divided into three parts for each version. The divisions are as follows:

- Part A involves the audit planning phase, for fraud risk assessment,
- Part B, some information regarding accounts receivable and sales accounts which was obtained during the course of the audit is provided.
- Part C solicits the demographic information.

In Part A the subjects are required to assess fraud risk of the hypothetical audit client. In Part B, the subjects are assumed to have conducted the audit of sales and collection cycle and additional information is provided regarding the audit evidence, which has been accumulated in the audit assumed to have been undertaken for the sales and collection cycle. The subjects are required to determine whether the amount in two accounts in the sales and collection cycle of the company contain material misstatement/s or not. The specific accounts which are materially misstated are the sales and accounts receivable accounts.

The misstatements included in the case are overstatements of sales and accounts receivable accounts. Ultimately, the misstatements in these accounts will affect the net profits and retained earnings accounts as well. These audit areas are selected because Mitchell (1997) reports that an analysis on the management fraud trends, on 2,608 reported cases of fraud, as indicated in the Report to the Nation on Occupational Fraud and Abuse, discovered that accounts receivable is the most celebrated case of management fraud. He also notes that sales revenue is another account which is highly (i.e. sixth in the rank) exposed to manipulation.

Besides that, studies in fraud detection, Pincus (1984), Bernardi (1994), Moyes and Hasan (1996), Moet (1997), Braun (2000), and Owusu-Ansah et al. (2002), for instance, all had focused on the inventory audit. Pincus (1984), Bernardi (1994), and Braun (2000) utilize case materials which contained intentional misstatement in the inventory accounts, while Moet (1997) seeds misstatements in both inventory and accounts receivable accounts. Moyes and Hasan (1996), and Owusu-Ansah et al. (2002) provide subjects with inventory audit procedures to examine the effectiveness of the procedures in detecting the fraud. Only Moyes and Hasan (1996) examine audit procedures for the sales and collection cycle.

Since limited studies on ability to detect the likelihood of fraud have examined accounts receivable account, the present study thus contributes to the auditing literature. With that, two of the most risky items (inventory and accounts receivable accounts) susceptible to intentional misstatement have now been covered.

Sample

The sample group of the present study is the practicing independent auditor registered in Malaysia, designated as audit partner or audit manager. The subjects consisting of those audit partners or audit managers attached to the auditing firms operating in Malaysia. As such, the sampling frame of the present study is the list of MIA members practicing in Malaysia. As of 13 October 2003, the total number of members registered with the MIA is 19,489. The unit of analysis for the present study is the individual audit partner or audit manager of the auditing firm operating in Malaysia. The population is the audit partners and audit managers attached to the auditing firms operating in Malaysia. However, there is no database available regarding the numbers of audit partners and audit manager in Malaysia.

Administration of the research instrument

The research instruments were mailed directly to the auditing firms. The cover letter accompanying the research instruments stated clearly that the instruments have to be attempted by audit partners or audit managers. While the audit partner has experience in risk assessment task, the audit manager as the personnel "in-charge" of the audit work is expected to have experienced the risk assessment task too (Hackenbrack and Knechel, 1997; Baglia, 2000). Thus, audit partners or audit managers are the most appropriate subjects for the present study.

Initially, the case materials are given to a panel of established researchers (i.e. 5 persons) to evaluate whether the measures of the research instruments include an adequate and representative set of items that tap the concept of ability to detect the likelihood of fraud. According to Sekaran (2000) content validity is a function of how well the dimensions and elements of a concept have been delineated. She states that an instrument can be said to have content validity if a panel of judges evaluates it.

Upon amendment, the research instruments are sent for pilot testing to 30 audit managers who are drawn from the sample firms in the study. Cooper and Schindler (2000) propose that the size of the pilot group may range from 25 to 100 subjects and the subjects do not have to be statistically selected. This test is intended to detect weaknesses in design and instrumentation. In addition, the conduct of pilot testing is viewed as essential in order to gain some assurance that external auditors do perceive that the case with high risk cues present greater risk of management fraud than the low risk case (Zimbelman, 1996; Baglia, 2000). Thus, it may provide evidence whether the case is realistic for instance, the "high fraud risk" case does signal a significantly higher likelihood of fraud than the "low fraud risk" case.

The feedback from the pilot testing requires no amendment on the research materials. Hence, the instruments are validated since the results of the pilot test show that both cases are realistic and that the case with high fraud risk indicator signals greater likelihood that intentional misstatements occur in the sales and accounts receivable balances than the low fraud risk case.

The research instruments are then sent to the actual subjects. In the cover letter it was stated clearly that the subjects must attempt both sets of the research materials. The time to be taken to attempt the research materials was also stated in the letter, which is approximately 45 minutes. Part A and B of both set of research material within 10 minutes each and Part C within 2 minutes. A stamped self-address envelope is provided for the convenience of the subjects to return the questionnaire.

Variables of the study

Dependent variable

The dependent variable is the external auditors' ability to detect the likelihood of fraud. It is measured on a 7-point Likert scaling ranging from extremely unlikely to extremely likely, by asking the subject: "Based on your judgment, what is the likelihood that the management of XYZ Manufacturing Bhd. would fraudulently misrepresent the financial statements? Moet (1997) uses almost similar question to measure certainty of fraud exist in her case materials. She utilizes a scale 0% - 100%. (Question 1 in Part B). An answer "likely" and above indicates that the management fraud is considered to have been detected. In the previous studies, Pincus (1984), Bernardi (1994) and Moet (1997) use a dichotomous measure. The Likert scaling is adopted by the present study because the nature of the case study limiting other information that may be available if the audit is to be conducted in an actual phenomenon. Hence, the present study avoids measuring the dependent variable using "yes" or "no" answer. Nevertheless, another question is constructed regarding the presence of fraud in the financial statements. Question 2 of Part B asks the subjects' judgment of which account/s they think is/are not fairly stated. If the external auditor answers "No" (the account was not stated fairly), the fraud is considered to have been detected." This question is similar to one that was asked by Bernardi (1994) thus the results may offer consistency to Question 1.

Independent variable

The independent variable is the external auditors' ability to assess fraud risk. It is operationalised through the inclusion of a question in Part A requiring the subject to indicate on a 7-point Likert scale ranging from extremely low to extremely high, his/her assessment of the risk of material misstatement in the financial statements due to fraud. Even though in practice, the firm uses a three-point scale (low, medium and high) to assess client risks, the adoption of 7-point scale is to provide a broader discrimination of risk levels (Mock and Wright, 1999). Moreover, this measurement is presumed to be more clearly defined and easier to be attempted by the subjects. The question about the fraud risk assessment is asked first in the case material, in conjunction with the requirement of AI 240 (MIA, 1997) that fraud risk assessment should be made during the initial stage of audit planning.

Control variables

In order to examine the relationships between the variables, some other factors that may influence the dependent variable need to be controlled. If these factors are not controlled, it will not be possible to determine the extent to which the external auditors' ability to detect the likelihood of fraud occurred only because of their ability to assess fraud risk correctly, alone, and to what extent the external auditors' ability to detect the likelihood of fraud is additionally influenced by the presence of the other factor. The procedure adopted by the present study to control the contaminating variable is by sending the research materials to all auditing firms as the perceived population of audit partners and audit managers (See Response Rate). The present study controls the auditor's experience (which falls under the auditor's characteristics dimension) and fraud risk (which falls under fraud risk factors dimension).

i- Auditor's experience

Prior studies have found that the auditor's experience may have a significant effect on the ability to detect fraud (e.g. Pincus, 1984; Bernardi, 1994; Moyes and Hasan, 1996; Owusu-Ansah et al., 2002 etc.). Position level will be used as the proxy for experience (Knapp, 1995; Knapp and Knapp, 2001;

Baglia, 2000; Choo and Trotman, 1991; Abdolmohammadi and Owghoso, 2000). The external auditor's position, audit partner or audit manager, is used because both individuals are as the person in-charge of the audit work and the individuals are expected to have extensive experience in audit. In many audit engagements, generally, the audit manager is the personnel who will decide on the adequacy of the risk assessed. Thus, the present study controls the auditor's experience by selecting the audit partner and audit manager as the subjects. However, due to the difficulties to select the audit manager with a specific number of audit experience, the present study sends the research materials to all auditing firms as the perceived population of audit partners and audit managers. In such a way, the experience variable is controlled and has an equal probability of being distributed among the subjects. Subsequently, the sample has some subjects who have more experience mingled with those who have less experience.

ii- Fraud risk factors

Previous studies offer mixed results regarding the effect of fraud risk indicators on the ability to detect the likelihood of fraud (Bernardi, 1994; Matsumura and Tucker, 1997; Moet, 1997 and Krambia-Kapardia, 2002). Given that AI 240 (MIA, 1997) requires the auditor to assess the risk of fraud and provides some examples of the conditions that may increase the risk of fraud, it is expected that these cues alone may lead the auditor to suspect the possibility of fraud. Moet (1997) stated that since auditors have the responsibility to provide reasonable assurance that there is no material misstatement due to fraud, it is expected that the fraud risk factors alone should provide sufficient cues for suspecting fraud. In addition, the external auditors are expected to use the various fraud risk cues to judge about the likelihood of fraud. Thus, with the fraud being embedded in the case material it is essential that the fraud risk indicators be controlled in the present study. Therefore, the present study may conclude whether the ability of the external auditors to detect the likelihood of fraud is solely affected by their ability to assess fraud risk. Following Moet (1997), the fraud risk indicators are controlled by treating these variables in aggregate and referred them as "high fraud risk" or "low fraud risk". Specifically, the fraud risk indicators are manipulated in the case materials at two levels, high fraud risk and low fraud risk. They are operationalised through the inclusion of many high fraud risk indicators for the high risk scenario and low fraud risk indicators for the low risk scenario.

RESULTS

Response rate

Database of auditing firms operating in Malaysia was obtained from the MIA website. As at May 2006, the MIA website indicates that there are 1370 firms registered with MIA. The present study distributes the research materials to all these auditing firms. As mentioned earlier the total population of audit partners and audit managers attached to the auditing firms operating in Malaysia is unknown, therefore the present study used all auditing firms operating in Malaysia as perceived population.

The research materials were sent out in late June 2006. In late-July 2006, 56 (5%) questionnaires were returned. A follow up was made in early August 2006. The same questionnaires were sent again to all subjects since the first sets of questionnaire are without identification number purposely made in order to ensure anonymity. In early September 2006, another 37 (3%) questionnaires were received from the subjects that led to a total of 93 returned questionnaires. Of these, 80 were usable and are used as the sample size of the present study. 13 questionnaires that were rejected because either the subjects did not attempt any of the questions (6 questionnaires), the subjects did not complete low fraud risk case materials

(4 questionnaires) or different subjects attempting Set A and Set B (3 questionnaires). The response rate of the present study is approximately 6%. Although low and may not be representable of the population, the sample size is considered as adequate for a research, which is experimental in nature. Roscoe (1975) states that a sample size larger than 30 and less than 500 is appropriate for most research. The final reporting sample is shown in Table 1.

Table 1. Response rate

	N	%
Questionnaires distributed	1370	100
Less: Non-replied questionnaires	1277	93
Questionnaires received	93	7
Less: Questionnaires rejected	13	1
Usable questionnaires	80	6

Analysis on the demographic profile of subjects

Table 2 summarises the demographic characteristics of all subjects. It is clear that majority of the subjects, 78 (97.5%) represented by the non-big four audit firms operating in Malaysia. Only 2 (2.5%) of the subjects are from the big four audit firms, who were willing to participate although follow up actions were made to encourage participation from them.

Table 2. Demographic breakdown of the sample

	Number	%		Number	%
Firm			Manufacturing clients		
Big four	2	2.5	Less than 5	25	31.1
Non big four	78	97.5	6-10	18	22.5
Total	80	100.0	11-15	37	8.8
			16-20	8	10.0
Position			More than 21	22	27.5
Partner	35	43.7	Total	80	100.0
Audit manager	45	56.3			
Total	80	100.0	Professional certification		
Tenure			MICPA	9	11.3
Less than 1	7	8.8	CIMA	9	11.3
1-3	25	31.3	CPA (Australia)	14	17.5
4-6	16	20.0	ACCA	35	43.8
7-9	7	8.8	Other	13	16.3
10 or above	25	31.3	Total	80	100.0
Total	80	100.0			
Past fraud			Training		
Yes	39	48.8	Yes	40	50.0
No	41	51.2	No	40	50.0
Total	80	100.0	Total	80	100.0

In terms of the current position of the subjects, Table 2 shows that almost equal number of positions, partners 35 (43.7%) and audit managers 45 (56.3%), are represented as the subjects of the present study. Meanwhile, subjects are asked to indicate their length of time (in years and month) they have been in the current position. The present study finds that it ranges from less than 1 year to more than 10 years. Table

2 reports that 25 (31.3%) subjects have been in the position for more than 10 years and between 1 to 3 years, respectively. Meanwhile, 16 (20%) between 4 to 6 years and 7 (8.8%) between 7 to 9 years. This analysis reveals that 7 (8.8%) subjects are very new in the position because they have been in the position for less than 1. In conclusion, majority of the subjects, 48 (60.1%), have been in the current position for at least 4 years.

Next, subjects are asked to state the number of manufacturing clients that they have audited before. They are required to count each annual audit of the same client as a separate audit. The number of manufacturing clients ranges from less than 5 clients to more than 21 clients. Table 2 illustrates that 25 (31.3%) of the subjects have experienced auditing less than 5 manufacturing clients. On the other hand, 22 (27.5%) have experienced auditing more than 21 manufacturing clients, followed by 18 (22.5%) have audited between 6 to 10 manufacturing clients, 8 (10%) from 16 to 20 manufacturing clients and 7 (8.8%) from 11 to 15 manufacturing clients. An analysis of the demographic profiles reveals that majority of the subjects, 35 (43.8%), possess ACCA for their professional qualification. 14 (17.5) of the subjects state that they have CPA (Australia) qualification, 9 (11.3%) have MICPA qualification, 9 (11.3%) have CIMA qualification while 13 (16.3%) indicate other qualifications.

The subjects are further asked whether they have ever worked on an audit client where fraudulent financial reporting of a material in nature was detected. Table 2 shows that almost half, 39 (48.8%), of the subjects have experienced detecting fraud in the audit while the remaining 41 (51.3%) have not. Nieschwietz et al. (2000) indicate that experiences with fraud in audit engagements are rare, so for any single auditor, repeated practice in detecting it is also rare. However, the subjects are also asked whether they have ever participated in a training session that specifically addressed fraud detection issues. As shown in Table 2, 40 (50.0%) of them have participated in such a training while the remaining 40 (50.0%) had never participated.

Hypothesis testing

General linear model univariate analysis is used because of the factorial experimental approach adopted by the present study. The analysis is done separately for the high fraud risk and low fraud risk scenario. Table 3 demonstrates ANOVA tests which indicate for high fraud risk scenario there is a significant ability to assess fraud risk, $F(1, 78), p = 0.006$. This means that the mean on the ability to detect the likelihood of fraud is different between those external auditors who are able to assess fraud risk correctly and those who are not able to assess fraud risk correctly. Figure 1 illustrates a plot that shows there is a positive relationship between the ability to assess fraud risk and the ability to detect the likelihood of fraud under the high fraud risk scenario. However, the strength of association as revealed by the partial eta squared, in Table 3, shows a value of 0.092 which is close to 0. This result indicates that the strength of association between the ability to assess fraud risk and the ability to detect the likelihood of fraud, though positive but is very weak.

Thus the present study concludes that under high fraud risk scenario, the results support the hypothesis that the ability to assess fraud risk is positively related to the ability to detect the likelihood of fraud.

Table 3. ANOVA test (Under high fraud risk scenario)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	0.663 (a)	1	0.663	7.915	0.006	0.092
Intercept	41.263	1	41.263	492.382	0.000	0.863
Ability to assess fraud risk	0.663	1	0.663	7.915	0.006	0.092
Error	6.537	78	0.084			
Total	72.000	80				
Corrected Total	7.200	79				

Notes : (a) R square =0.092, Adjusted R Square =0.080

Figure 1: Plot for the relationship between ability to assess fraud risk and ability to detect the likelihood of fraud (High fraud risk scenario)

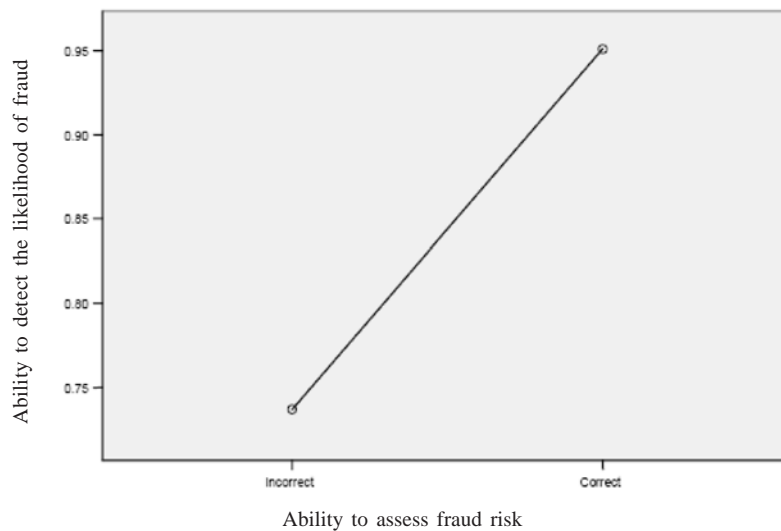


Table 4 demonstrates ANOVA tests which indicate for low fraud risk scenario there is a significant ability to assess fraud risk, $F(1, 78), p = 0.002$. This means that the mean on the ability to detect the likelihood of fraud is different between those external auditors who are able to assess fraud risk correctly and those who are not able to assess fraud risk correctly. Figure 2 illustrates a plot that shows there is a negative relationship between the ability to assess fraud risk and the ability to detect the likelihood of fraud under the low fraud risk scenario.

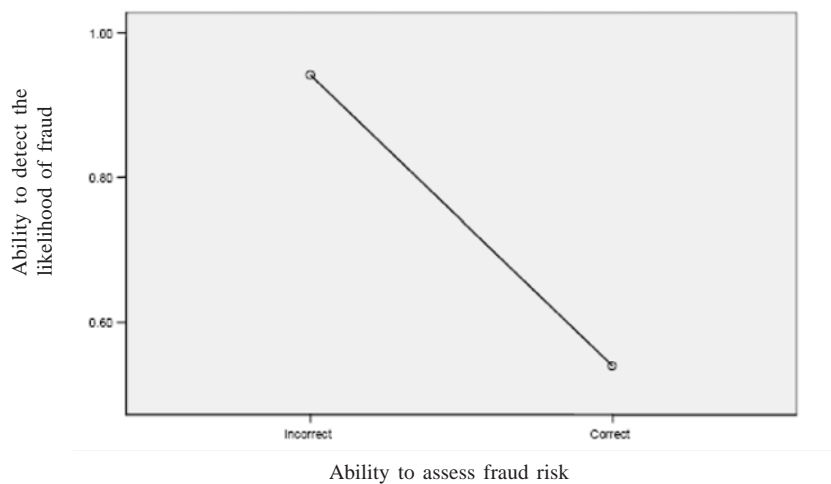
Thus the present study concludes that under low fraud risk scenario, the results do not support the hypothesis that the ability to assess fraud risk is positively related to the ability to detect the likelihood of fraud.

Table 4. ANOVA test (Under low fraud risk scenario)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2.158 (a)	1	2.158	10.145	0.002	0.115
Intercept	29.358	1	29.358	138.014	0.000	0.639
Ability to assess fraud risk	2.158	1	2.158	10.145	0.002	0.115
Error	16.592	78	0.213			
Total	50.000	80				
Corrected Total	18.750	79				

Notes : (a) R square =0.115, Adjusted R Square =0.104

Figure 2: Plot for the relationship between ability to assess fraud risk and ability to detect the likelihood of fraud (Low fraud risk scenario)



DISCUSSION

Despite the increased pressure to the profession concerning the responsibility of the external auditors to detect fraud, no research has been undertaken to examine the impact of the external auditors' ability to assess fraud risk on the external auditors' ability to detect the likelihood of fraud. The primary purpose of the present study is to address this gap in the literature.

The present study reveals mixed results concerning the effect of the ability to assess fraud risk on the ability to detect the likelihood of fraud. In a high fraud risk scenario, the hypothesis of the present study is supported. The results show that the external auditors' ability to assess fraud risk does have a significant effect on the external auditors' ability to detect the likelihood of fraud. This finding corroborates the assumption of the Attribution Theory that the level of the future expected ability to detect the likelihood of fraud is attributed by the auditor's prior ability to assess fraud risk. The findings support the insight of the Attribution Theory where the external auditors apparently have used the fraud risk indicators when deciding on the fraud risk assessment, and their success of assessing the fraud risk does attribute to their ability to detect the likelihood of fraud. Thus, the present study posits that when the external auditors suspect fraud has occurred in the financial statement based on the fraud risk indicators, the assessed fraud risk does serve as a guidance to them to identify the high risk area, for instance an account that is possibly materially misstated.

The findings of the present study indicate that the external auditors' ability to detect the likelihood of fraud, when given several fraud risk indicators, depends on the external auditors' ability to assess the fraud risk after considering those indicators. In other words, the ability to detect the likelihood of fraud is attributed by the ability to assess fraud risk.

Besides, the finding supports the expectations of the standards that if the external auditors able to appropriately assess fraud risk (AI 240, MIA, 1997) based on their professional judgments (AI 240, AI 400, MIA, 1997), this attribution will subsequently influence the ability of the external auditor to detect the likelihood of fraud (AI 240, MIA 1997).

However, in a low fraud risk scenario, the hypothesis of the present study is not supported. The results show that the external auditors' ability to assess fraud risk does not have a significant effect on the external auditors' ability to detect the likelihood of fraud. This finding is not corroborated with the assumption of the Attribution Theory that the level of the future expected ability to detect the likelihood of fraud is attributed by the auditor's prior ability to assess fraud risk. The findings do not support the insight of the Attribution Theory where although the external auditors apparently have used the fraud risk indicators when deciding on the fraud risk assessment, their success of assessing the fraud risk does not attribute to their ability to detect the likelihood of fraud. Thus, the present study posits that when the external auditors suspect fraud has occurred in the financial statement based on the fraud risk indicators, the assessed fraud risk does not serve as a guidance to them to identify the high risk area, for instance an account that is possibly materially misstated.

The findings of the present study indicate that the external auditors' ability to detect the likelihood of fraud, when given several fraud risk indicators, do not depend on the external auditors' ability to assess the fraud risk after considering those indicators. In other words, the ability to detect the likelihood of fraud is not attributed by the ability to assess fraud risk.

The motivation to assess fraud risk accurately may be due to cost factor (Nieschwietz et al., 2000). On the other hand, there are a few external auditors who are unable to assess fraud risk accurately but able to detect the likelihood of fraud. There may be reasons why external auditors' unable to assess the fraud risk correctly. Jindanuwat (1999) states that one suggestion made by Abdel-khalik and Solomon (1988) is that lack of consistency among auditors regarding their risk assessment conclusions may be due to the fact that, not only do risk analysis techniques used by individual auditor vary, but individual risk factors to be included in the analysis are industry- and client-specific. They further state that failure to do enough work to detect fraud when present results in serious expense (Palmrose, 1987); doing too much when fraud is not present does not add economic value. Thus, there is considerable attention to assessing fraud risk correctly.

Moreover, for a low fraud risk scenario, the finding does not support the expectations of the standards that if the external auditors able to appropriately assess fraud risk (AI 240, MIA, 1997) based on their professional judgments (AI 240, AI 400, MIA, 1997), this attribution will subsequently influence the ability of the external auditor to detect the likelihood of fraud (AI 240, MIA 1997).

CONCLUSION

Literature has shown that fraudulent financial reporting has occurred in many countries (e.g. Mitchell, 1997; Grant, 1999 and Spathis, 2002). Nevertheless, after the establishment of the Sarbanes-Oxley Act in 2002, fraud incidence still occurs. Similarly, in Malaysia, despite standards and guidelines were issued, yet the fraudulent financial reporting still occurred in this country as reported by the KPMG Malaysia

(2003). Although guidance has already been provided by the Malaysian standards, KPMG Malaysia (2003) reported that the external auditors discovered only 4% of fraud incidences in Malaysian companies. Hence, the public may question why external auditors are not able to detect fraud during the conduct of the annual audit. Thus the present study advocates that it is important to know the ability of the external auditors to detect fraud.

Future research in this area may be done by adding a situational factor, i.e. level of fraud risk, as another variable that may affect the ability to detect the likelihood of fraud. This is essential since the present study discovers that in a different fraud risk situation the findings demonstrate different results concerning the effect of the ability to assess fraud risk on the ability to detect the likelihood of fraud.

Besides, future research may be conducted by allowing the subjects to perform audit in a controlled environment. This is to actually capture the audit plan and see whether the external auditors are able to detect fraud based on the plan that they actually performed. For instance, the experiment may require the subjects to perform analytical procedures to detect the likelihood of fraud. Analytical procedures have been found to be effective in signaling financial statements errors (Hylas and Ashton, 1982; Blocher, Esposito and Willingham, 1983). Thus, the realism of the case is reflected by the experiment.

REFERENCE

- Abdolmohammadi, M. J. and Owghoso, V. D. (2000). Auditors' ethical sensitivity and the assessment of the likelihood of fraud, *Managerial Finance*, 26, 21-32.
- Albrecht, W. S. and Romney, M. B. (1986). Red-flagging management fraud. In J. R. Nieschwietz, J. J. Schultz and M. F. Zimbleman (2000). Empirical research on external auditors' detection of financial statement fraud, *Journal of Accounting Literature*, 19, 190-246.
- Ali, M. A. (1994). *Accountability in the audit profession in Malaysia*. Kuala Lumpur: University of Malaya Press.
- Bernardi, R. A. (1994). Fraud detection: The effect of client integrity and competence and auditor cognitive style, *Auditing: A Journal of Practice & Theory*, 13, 68-84.
- Blocher, E., Esposito, S. R. and Willingham, J. J. (1983). Auditors' analytical review judgments for payroll expense, *Auditing: A Journal of Practice & Theory*, 3(1), 75-91.
- Boatsman, J. R., Moeckel, C. and Pei, B. K. W. (1997). The effects of decision consequences on auditors' reliance on decision aids in audit planning, In J. R. Nieschwietz, J. J. Schultz and M. F. Zimbleman (2000). Empirical research on external auditors' detection of financial statement fraud, *Journal of Accounting Literature*, 19, 190-246.
- Braun, L. R. (2000). The effect of time pressure on auditor attention to qualitative aspects of misstatements indicative of potential fraudulent financial reporting, *Accounting, Organizations and Society*, 25(3), 243-259.
- Brief, A. P., Dukerich, J. M., Brown, P. R. and Brett, J. F. (1996). What's wrong with the Treadway Commission report?, *Journal of Business Ethics*, 15(2), 183-198.
- Byrne, T. (1991), Optimising the Audit Resource, *Financial Management*, 69(2), 34-36.

Choo, F. and Trotman, K. T. (1991). The relationship between knowledge structure and judgments for experienced and inexperienced auditors, *The Accounting Review*, 66(3), 464-485.

Cooper, R. D. and Schindler, S. P. (2000). *Business research methods*, Singapore: McGraw Hill.

Elliott, R. K. and Willingham, J. J. (1980). *Management fraud: Detection and deterrence*. New York: Petrocelli Books Inc.

KPMG Malaysia (2003). *Fraud Survey 2002 Report*. Kuala Lumpur: Malaysia.

Grant, J. (1999). Detecting management fraud, *Balance Sheet*, 7(3), 14-15.

Green, P. B. and Choi, H. J. (1997). Assessing the risk of management fraud through neural network technology, *Auditing: A Journal of Practice & Theory*, 16(1), 14-28.

Hackenbrack, K. and Knechel, R. W. (1997). Resource allocation decisions in audit engagements, *Contemporary Accounting Research*, 14(3), 481-499.

Hansen, J. V., McDonald, J. B., Messier, W. F. Jr and Bell, T. B. (1996). A generalized qualitative-response model and the analysis of management fraud, *Management Science*, 42(7), 1022-1032.

Heider, F. (1958). The psychology of interpersonal relations, In S. E. Kaplan, and P. M. J. Reckers, (1985). An examination of auditor performance evaluation, *Accounting Review*, 60(3), 477-488.

Hylas, Robert E. and Ashton, R. H. (1982). Audit detection of financial statement errors, *The Accounting Review*, LVII(4), 751-765.

Jamal, K, Johnson, E. P. and Berryman, G. R. (1995). Detecting framing effects in financial statements, *Contemporary Accounting Research*, 12(1), 85-105.

Jindanuwat, N. (1999). Auditors' causal inference judgments during audit planning: a model of reasoning and judgments, Unpublished doctoral dissertation, California: University of California.

Joyce, E. and Biddle, G. (1981a). Anchoring and Adjustment in are auditors' judgments sufficiently regressive?, *Journal of Accounting Research*, 19(2), 323-349.

Joyce, E. and Biddle G. (1981b). Anchoring and adjustment in probabilistic inference in auditing, *Journal of Accounting Research*, 19(1), 120-145.

Kaminski, K. A. (2002). Financial ratios and fraud: an exploratory study using Chaos Theory, Unpublished doctoral dissertation, Oklahoma: Oklahoma State University.

Kanter, H. A., McEnroe, J. E. and Kyes, M. C. (1990). Developing and installing an audit risk model, *The Internal Auditor*, 47(6), 51-55.

Kaplan, S. E. and Reckers, P. M. J. (1985). An examination of auditor performance evaluation, *Accounting Review*, 60(3), 477-488.

Kelley, H. H. (1967). Attribution Theory in social psychology, In C. Orpen (1980). The relationship between expected job performance and causal attributions of past success or failure, *The Journal of Social Psychology*, 112(1), 151-152.

Jaffar et al. "The Effect of the External Auditors' Ability to Assess Fraud Risk on Their Ability to Detect the..."

Knapp, C. A. (1995). The use of fraud schema during analytical procedures: effects of experience, client explanations and attentional cues, Unpublished doctoral dissertation, Oklahoma: The University of Oklahoma.

Knapp, C. A. and Knapp, M. C. (2001). The effects of experience and explicit fraud risk assessment in detecting fraud with analytical procedures, *Accounting, Organisations and Society*, 26(1), 25-37.

Konrath, L. F. (1989). Classification of audit risk factors for planning and program design, *Ohio CPA Journal*, 48(4), 6-11.

Krambia-Kapardis. M. (2002). A fraud detection model: a must for auditors, *Journal of Financial Regulation and Compliance*, 10(3), 266-278.

Loebbecke, K. J., Eining, M. M. and Willingham, J. J. (1989). Auditors' experience with material irregularities: Frequency, nature, and detectability, *Auditing: a Journal of Practice & Theory*, 9(1), 1-28.

Malaysian Institute of Accountants (MIA) (1997). Malaysian Approved Standards on Auditing, Kuala Lumpur: Malaysia.

Matsumura, E. M. and Tucker, R. R. (1992). Fraud detection: A theoretical foundation, *The Accounting Review*, 67(4), 753-782.

Mitchell, H.S. (1997). Management fraud trends, *The Secured Lender*, 53(6), 104-108.

Mock, J. T. and Wright, M. A. (1999). Are audit program plans risk-adjusted?, *Auditing: A Journal of Practice & Theory*, 18(1), 55-74.

Moet, L. K. (1997). Will SAS No. 88 aid auditors in financial statement fraud detection, unpublished doctoral dissertation, Colorado: University of Colorado.

Morton, J. E. and Felix, W. L. Jr. (1991). A critique of statement on auditing standards No. 55, *Accounting Horizons*, 5(1), 1-10.

Moyes, G. D. and Hasan, I. (1996). An empirical analysis of fraud detection likelihood, *Managerial Auditing Journal*, 11(3), 41-46.

Newman, D. P., Patterson, E. and Smith, R. (2001). The influence of potentially fraudulent reports on audit risk assessment and planning, *The Accounting Review*, 76(1), 59-80.

Nieschwietz, J. R., Schultz, J. J. and Zimbelman, M. F. (2000). Empirical research on external auditors' detection of financial statement fraud, *Journal of Accounting Literature*, 19, 190-246.

[No Author] (2005). Nine Charged in Ahold Fraud Case [Online] retrieved June 2005 from <http://www.foodproductiondaily.com/news/ng.asp?n=57354-nine-charged-in,2005>.

Orpen, C. (1980). The relationship between expected job performance and causal attributions of past success or failure, *The Journal of Social Psychology*, 112, 151-152.

Owusu-Ansah, S., Moyes, D. G., Oyelere, B.P. and Hay, D. (2002). An empirical analysis of the likelihood of detecting fraud in New Zealand, *Managerial Auditing Journal*, 17(4), 192-204.

Palmrose, Z. (1987). Litigation and independent auditors: The role of business failures and management fraud, *Auditing: A Journal of Practice & Theory*, 6(2), 90-103.

Pincus, V. K. (1984). Fraud detection ability: Individual differences and their relationship to cognitive style difference, unpublished doctoral dissertation, Maryland: The University of Maryland.

Ribstein, L. E. (2002). Market vs. regulatory responses to corporate fraud: a critique of the Sarbanes-Oxley Act of 2002, *Journal of Corporation Law*, 28(1), 1-67.

Roscoe, J. T. (1975). *Fundamental research statistics for the behavioural sciences*. New York: Rinehart & Winston.

Sekaran, U. (2000). *Research methods for business*. New York: John Wiley & Sons.

Selto, F. H. and Cooper, J. C. (1990). Control of risk attitude in experimental accounting research, In S. Ayers (1995). Risk assessments of potential clients and the review process: A study of auditor judgment, unpublished doctoral dissertation, Arizona: Arizona State University.

Shibano, T. (1990). Assessing audit risk from errors and irregularities, *Journal of Accounting Research*, 28(Supplement), 110-140.

Sittenfield, I. (1991). Audit planning with the Grid Model, *The Internal Auditor*, 48(1), 32-37.

Spathis, T. C. (2002). Detecting false financial statements using published data: Some evidence from Greece, *Managerial Auditing Journal*, 17(4), 179-191.

Summers, S. L. and Sweeney, J. T. (1998). Fraudulently misstated financial statements and insider trading: An empirical analysis, *Accounting Review*, 73(1), 131-146.

Sutton, S. G., Young, R. and McKenzie, P. (1994). An analysis of potential legal liability incurred through Audit Expert Systems, in Nieschwietz, J.R., Schultz, J.J. and Zimbelman, M.F. (2000). Empirical research on external auditors' detection of financial statement fraud, *Journal of Accounting Literature*, 19, 190-246.

Taggar, S. and Neubert, M. (2004). The impact of poor performers on team outcomes: an empirical examination of Attribution Theory, *Personnel Psychology*, 57, 935-968.

Trompeter, G. (1994). The effect of partner compensation schemes and Generally Accepted Accounting Principles on audit partner judgment, *Auditing: A Journal of Practice & Theory*, 13(2), 56-67.

Tyler, G. (1997). Corporate fraud: Buy into the fraud squad, In S. Owusu-Ansah, D. G. Moyes, B. P. Oyelere, and D. Hay (2002). An empirical analysis of the likelihood of detecting fraud in New Zealand, *Managerial Auditing Journal*, 17(4), 192-204.

Vanasco, R. C. (1998). Fraud auditing, *Managerial Auditing Journal*, 13(1), 4-71.

Waller, W. S. (1993). Auditors' assessments of inherent and control risk in field settings, *The Accounting Review*, 68(4), 783-803.

Weiner, B., Frieze, I., Kukla, A., Reed, L., Rest, S. and Rosenbaum, R. M. (1971). Perceiving the cause of success and failure, In C. Orpen (1980). The relationship between expected job performance and causal attributions of past success or failure, *The Journal of Social Psychology*, 112, 151-152.

Wells, J. T. (1997). Occupational fraud and abuse, In T. C. Spathis (2002). Detecting false financial statements using published data: some evidence from Greece, *Managerial Auditing Journal*, 17(4), 179-191.

Jaffar et al. "The Effect of the External Auditors' Ability to Assess Fraud Risk on Their Ability to Detect the..."

Wilks, J. T. and Zimbelman, F. M. (2004). Decomposition of fraud-risk assessments and auditors' sensitivity to fraud cues, *Contemporary Accounting Research*, 21(3), 719-745.

Ybarra, O. and Stephan, W. G. (1999). Attributional orientations and the prediction of behaviour: The attribution-prediction bias, *Journal of Personality and Social Psychology*, 76(5), 718-727.

Zimbelman, M. F. (1996). Assessing the risk of fraud in audit planning, unpublished doctoral dissertation, Arizona: The University of Arizona.

Zimbelman, F. M. and Waller, S. W. (1999). An experimental investigation of auditor-auditee interaction under ambiguity, *Journal of Accounting Research*, 7(supplement), 135-155.

Submitted: 15 January 2008

Revised version submitted: 4 April 2008

Accepted: 6 April 2008

Double-blind refereed anonymously

Author(s) Information:

Nahariah Jaffar is a PhD candidate in Graduate School of Management, Universiti Putra Malaysia. After receiving her BAcc from National University of Malaysia and MBA from University of Hull, United Kingdom, she taught accounting courses in Multimedia University, Cyberjaya, Malaysia. Her main research interests are auditing and financial accounting and reporting. E-mail: nahariah.jaffar@mmu.edu.my

Arfah Salleh is an Associate Professor in Department of Accounting and Finance, Faculty of Economics and Management, Universiti Putra Malaysia. She has been teaching accounting courses more than 20 years in Universiti Putra Malaysia. Her main research interests are accounting information system and accounting education. E-mail: arfah@econ.upm.edu.my

Takiah Mohd Iskandar is a Professor in the Department of Accounting, Faculty of Economics and Business, National University of Malaysia. She has been teaching accounting courses more than 20 years in National University of Malaysia. Her main research interests are auditing and financial accounting. E-mail: takiah@pkrisc.cc.ukm.my

Hasnah Haron is a Professor in the School of Management, Universiti Sains Malaysia. She has been teaching accounting courses more than 20 years in Universiti Sains Malaysia. Her main research interests are auditing and financial reporting. E-mail: hhasnah@usm.my