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Keywords : *forensic accountants, planning, management fraud, risk detection, investigating.*

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An Evaluation of Forensic Accountants to Planning Management Fraud Risk Detection Procedures

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1. INTRODUCTION

Management fraud is the “deliberate fraud committed by Management that injures investors and creditors through materially misleading Financial Statements” (Elliot and Willingham 1980, Apostolou, et al, 2000). The ability of an auditor to make an accurate assessment of Management Fraud Risk is crucial to the initial assessment of risk in an audit engagement (Hansen and Klamm 2004). If this assessment is incorrect, the planned audit procedures may be inappropriate or insufficient, and this in turn, may reduce the reliability of the Financial Statements and increase the auditor's exposure to litigation and unfavorable outcomes (Palmrose, 1987).

When designing audit procedures to reduce the risk of not detecting a material misstatement in the Financial Statements of an entity, an auditor is required by professional standards to use professional skepticism, to be alert to evidence, not withstanding prior experience with the client's Management, and to be alert to factors that increase the possibility of Management Fraud (Hansen and Klamm, 2004). However, only seven percent of the audit partners experienced five or more material Management Frauds within their careers (Loebbecke, et al 1989), suggesting that auditor' experience with material Management Fraud is limited. One way that auditors can compensate for their limited exposure to fraud is by consulting with fraud experts (Loebbecke, et al 1989).

Asare and Wright (2004) conducted a study in which 69 experienced auditors were provided with a case (based on an SEC enforcement case) and asked to assess the risk of fraud, review and update a standard audit programme for the revenue cycle, and provide an opinion on the necessity of conferring with a risk management partner to finalize the proposed plan. Some of the auditors were given structured guidance in the form of standard risk checklists while other auditors were asked to make their assessments without such structured guidance. Asare and Wright found that the auditors who were provided with structured guidance underestimated the risk of fraud. In contrast, the auditors who were not provided with structured guidance assessed the fraud risk at higher levels and were more likely to refer the file to fraud experts. Nonetheless, the auditors who were not provided with structured guidance were not able to design a more effective audit programme than the other auditors who were provided more structured guidance.

Asare and Wright (2004), recommended that auditors seek the assistance of Forensic Accountants with the development of their audit plan when there is perceived risk of heightened Management Fraud by an auditor client. However, since consultations with experts are costly, auditors would like to avoid referring issues to Forensic Accountants unless they believed that a substantially elevated risk of fraud was present in an engagement. In such setting, auditors may delude themselves into understating fraud risks in an engagement; or, alternatively, auditors may delude

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themselves into believing that consulting with Forensic Accountants would safeguard them against audit programme design weaknesses, while in fact, Forensic Accountants may have limited competencies in audit programme design (AICPA 2006; Dezoort and Stanley 2006, Bedard and Mock 1992).

This study investigate the relative merits of involving Forensic Accountants during the planning stage in assisting the auditor by developing an audit plan that will effectively identify fraud in an audit content. Research reported herein has the potential to contribute to understanding of the usefulness of involving Forensic Accountants in designing an audit plan when the auditors have identified fraud risk factors during the planning stage of the audit. The research was carried out with particular reference to professional Accountants in Kogi State. The work also covered a period of 5 years from 2006 – 2010.

II. STATEMENT OF RESEARCH PROBLEM

It has been observed by practitioners over the years that auditors are able to identify Management Fraud Risk factors, but may not be able to translate this knowledge into an audit plan that effectively takes these factors into account and increase the likelihood of detecting the fraud if it exists. Forensic Accountants may be able to compensate for such limitations. The research seeks to investigate how relevant the involvement of Forensic Accountants can help during the planning stage in assisting auditors in developing an audit plan that will effectively identify Management Fraud Risk.

III. OBJECTIVES OF THE STUDY

The main objective of the study is to evaluate the relevance of Forensic Accountants to planning Management Fraud Risk detection procedures. The specific objectives of the paper are;

- i. Determine how Forensic Accountants effectively modify the extent and nature of audit tests when the risk of Management fraud is high.
- ii. Examine how Forensic Accountants propose unique procedures that are not proposed by auditors when the risk of Management fraud is high.

IV. RESEARCH QUESTIONS

To evaluate the relevance of Forensic Accountants on planning Management fraud risk detection procedure, the following research questions were asked;

- i. To what extent do Forensic Accountants effectively modify the extent and nature of audit tests when the risk of Management fraud is high?
- ii. To what extent do Forensic Accountants propose unique procedures that are not proposed by

auditors when the risk of Management fraud is high?

V. STATEMENT OF HYPOTHESES

H_{01} : Forensic Accountants cannot effectively modify the extent and nature of audit test when the risk of Management Fraud is high.

H_{02} : Forensic Accountants cannot adequately propose unique procedures that are not proposed by auditors when the risk of Management Fraud is high.

VI. CONCEPTUAL FRAMEWORK

Joshi (2003), Forensic Accounting is the applications of specialized knowledge and specific skills to stumble up on the evidence of economic transactions. Zysman (2001) put forensic accounting as the integration of accounting, auditing and investigative skills. Simply put, forensic accounting is accounting that is suitable for legal review offering the highest level of assurance and including the now generally accepted connotation of having been arrived at in a scientific fashion (Crumbley 2006). Coenen (2005) stated that forensic accounting involves the application of accounting concepts and techniques of legal problem. It demands reporting, where the accountability or the fraud is established and the report is considered as evidence in the court of law or in the administrative proceedings (Joshi 2003). It provides an accounting analysis that is suitable to the court, which will form the basis of discussion, debated and ultimately dispute resolution (Zysman 2001) these means that forensic accounting is a field of specialization that has to do with provision of information that are meant to be used as evidence especially for legal purposes. The persons practicing in this field (i.e. Forensic Accountants) investigate and document financial fraud and white-collar crimes such as embezzlement and investigate allegations of fraud, estimates losses damages and assets and analyses complex financial transaction. They provide those services for corporation, attorneys, criminal investigators and the Government (Coenen 2005). Their engagements are usually geared towards finding where money went, how it got there, and who was responsible. They are trained to look beyond the numbers and deals with business reality of the situation (Zysman 2001).

Early literature in the area of fraud risk assessment attempted to gain an understanding of the factors associated with the increased likelihood of management fraud, or act as warning signals or ("red flags") that can help an auditor assess the risk of fraud in a given situation (Albrecht and Romney, 1980; Loebbecke, Eining and Willingham, 1989; Pincus, 1989; Heiman-Hottman, Morgan and Patton, 1997). However, much of this research such as Hackenbrack (1993) and

Eining et al (1993) studied novice rather than expert auditors (Bonner and Levis 1990; Bonner and Pennington 1991). Also they appear to be limited research into judgment processes involved in judgments about the risk of material Management Fraud.

While there have been several process-oriented studies that have addressed other aspects of the audit processes (Biggs and Mock, 1983; Blocher and Copper, 1986), there have been only a few process-oriented studies of Management Fraud Risk assessment. For example, Jamal, Johnson and Baryman (1995) were interested in the way in which framing effects would contribute to the auditor's ability to detect an embedded fraud within the financial statements presented as part of the case materials. Jamal et al (1995) found that over half of their subjects were deceived by Management's frame and thus failed to detect the fraud.

Zimbunan (1997) investigated whether the American Institute of Certified Public Accountants (AICPA) which requires auditors to separately assess the risk of Management Fraud will lead auditor to spend more time reading fraud cues and design audit plans that are more sensitive to fraud risk. Zimbunan provided practicing auditors from two big firms with cases containing cues indicating high fraud risk or low fraud risk and asked them to search information stored on a computer, make inherent risk assessments, prepare a staffing budget, and choose audit procedures to test the client's accounts receivable. Computer software kept track of the time subjects spent reading and this time measure was used to test one of the hypotheses of interest whether subjects would spend more time attending to fraud cues when conducting a separate assessment of Management Fraud Risk as compared with a holistic assessment of inherent risk. Zimbunan (1997) found this to be a case. Also, while subjects increased the numbers of hours budgeted for the higher risk case compared to the lower risk case; they did not produce significantly different audit plans for those cases in terms of the procedures selected.

A follow up study by Glover, Prawitt, Schultz and Zimbunan (2003) compared pre-and post planning judgments and found that post planning judgments were more sensitive to fraud risk factors than in Zimbunan (1997). In their study, auditors adjusted the extent of planned audit tests in response to fraud risk, but made no changes to the nature of their planned tests. Houston et al (1999) had auditors assess the audit risk and business risk for a case where specific errors or irregularities were present, then recommend audit investment and fees. They found that when the likelihood of an error was high, the fee did not contain a risk premium, where as when the likelihood of an irregularity was high, the fee did not contain such a premium.

This suggests that auditors are sensitive to the need for more investment in auditing when high risk of fraud is present, although Houston et al (1999) did not provide evidence on what specific procedures the auditors would perform to compensate for this risk. Auditors could have the desire to compensate for identified risks but not the ability to do so. Some have suggested that an effective way of addressing such risks is to use Forensic Accountants. Asare and Wright (2004) conducted a study wherein experienced auditors' were provided with a case and asked to assess the risk of Management Fraud, and decide whether to consult Forensic Accountants. Some of the auditors were given structured guidance in the form of standard risk questionnaires, while other auditors were asked to make their assessments without structured guidance.

Asare and Wright (2004) found that the auditors who were provided with structured guidance underestimated the risk of Management Fraud. In contrast, auditors who were not provided with structured guidance assessed the Management Fraud Risk at higher levels and were more likely to refer the file to fraud specialists. However as in Zimbunan (1997) and Glover et al (2003), these auditors were not able to design a more effective audit programme like the other auditors.

Mock and Turner (2005) investigated Management Fraud Risk assessments and effects on audit programmes. They sampled clients over a two year period to identify how the auditor's actions changed when the client risk assessment was other-than-low risk versus low risk based on the number of fraud risk factors present. They found that the auditors in their study identified Management fraud risk factors and modified the nature, extent and/or timing of audit procedures, assigned more experienced audit team members to the audit, or added or deleted procedures. Mock and Turner's results showed that the more management fraud risk factors were present, the more changes made to the extent of planned audit procedures. Zimbunan (1997), Glover et al (2003), Mock and Turner (2005) determined that the decision to modify the audit programme in response to Management Fraud Risk assessment was influenced by AICPA. These findings are at odds with those of Asare and Wright (2004). In addition, Mock and Turner addressed auditing standards, and they did not directly look into the use of Forensic Accountants in audit content.

Wells (2004) pointed out that large accounting firms have Forensic Accountants on staff but they are use reactively rather than proactively. He recommended that Forensic Accountants become involved during the audit to help identify key risk areas. The Forensic Accountants would identify the risk areas and communicate these to the auditors for further consideration. Wells (2004) argued that the presence of

Forensic Accountants on an audit would act as a deterrent to fraud-inclined client for there would be a perception that the likelihood of illegal activities being detected would increase. Wells (2004) does not support his conjectures with evidence, so it is difficult to know whether Forensic Accountants could contribute in the way he suggests.

The literature review indicates that there is no published research on the usefulness of seeking the assistance of a Forensic Accountants during the planning stage of an audit. The usefulness of consultations with Forensic Accountants is often based on anecdotal evidence after a fraud has been discovered where it is suggested that the auditors should have sought the assistance of a Forensic Accountants. When auditors fail to detect a Management Fraud the public is usually left asking, where were the auditors? In recent years, there has been a focus on the auditor's need to do a better job at assessing the potentials fraud at their audit client. However, once the auditor has assessed and increased potential risk, what is the next course of action? Presumably the auditor needs to review the audit plan from the standard audit plan to one more likely to detect the existence of fraud. Auditors could either tailor the audit programme themselves or seek the assistance of Forensic accountants if they believe that the Forensic Accountants can do a better job, and they are right, then they should forward the file to the Forensic Accountants. However, if the Forensic Accountants is no more skilled at this than they are in adjusting the audit plan to increase the chances of fraud detection, then the auditors should revise the audit plan themselves, although they may need additional training or decision aids to this effectively.

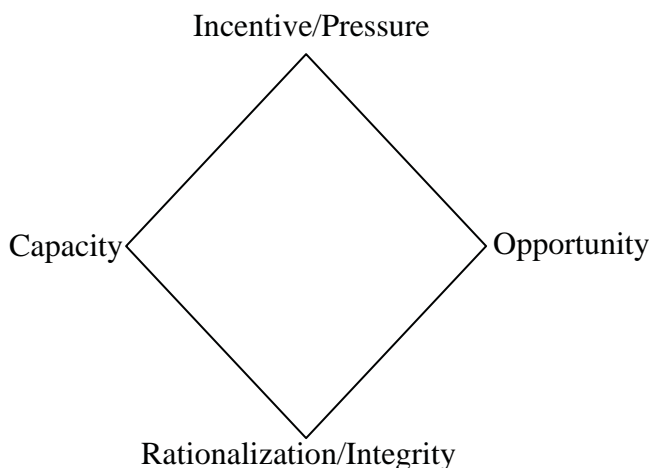
VII. THEORETICAL FRAMEWORK

Expert over time have attempted to formulate theories that explain the mind set of fraudster. Unless *Forensic Accountants* understand the way the fraudster thinks, they will not be able to keep one step ahead of the fraudster. The theories that will guide this study are the theory of fraud Diamond and the white-collar fraudster.

a) *Theory of the Fraud Diamond*

Wolf and Hermanson (2004), cited by Crumbley et al, (2007), proffered the Theory of the Fraud Diamond, in place of the triangle. They argue that the diamond offers a better view of the factors leading to fraud. They add a fourth variables, capacity, to the three-factor theory of Cressey. The fraud perpetrator must have the necessary traits, abilities, or positional authority to pull off his crime.

i. *The Fraud Diamond*



Source: Crumbnley D. L., Heitger L. E., and Smith G.S. (2007), *Forensic and Investigative Accounting*, 3rd Ed, Chicago, CCH

ii. *The White-Collar Fraudster*

Crumbley et al (2007) set out the characteristics of the white-collar fraudster. They include: Likely to be married; Member of a Church (or Mosque), Educated beyond high school, No arrest record, Age range from teens to older than 60, Socially conforming, Employment tenure from 1 to 20 years, Acts alone 70% of the time.

He further concluded that given the right pressures, opportunities and rationalizations, many employees are capable of committing fraud. Fraud identifiers include large ego, drug abuse or gambling addiction, living beyond apparent means, self-absorption, hardworking with very little or no vacations, under financial pressure, and sudden mood changes (Moulton, Cited by Crumble et al, 2007). Senior level management fraudsters tend to be overly ambitions people, obsessed with enhancing power and control, narcissistic personality, with an over-inflated sense of superiority. They are commonly surrounded by "yes men" and believe they are above the rules.

VIII. RESEARCH METHODOLOGY

This study employs both primary and secondary sources of data collection and analysis. The same questions in Asare and Wright (2004) questionnaire were adopted for this study as primary source of data, while secondary sources of data were obtained through internet and library. Also an empirical survey was used to obtain the perception of professional accountants in the area of Forensic Accounting practice in Nigeria.

The population of the study comprises 250 professional Accountants in Kogi State. A purposive sampling techniques which is a non-probability sampling techniques was adopted to choose a sample size of 35 professional Accountants. Thirty five copies of questionnaire were administered and thirty one were filled and returned. The data were presented and

percentages, mean and standard deviation were computed to quantify the weight of variables. Multivariate Analysis of Variance (MANOVA) and Analysis of Variance (ANOVA) were computed for the comparison with the study of Asare and Wright (2004), as this study is based on his previous research. The choice for MANOVA is the fact that, the study has several correlated dependent variables, and the study desires a single overall statistical test on this set of variable instead of performing multiple individual tests, while ANOVA helps to test for the significance of the differences between more than two sample means.

IX. DISCUSSION OF RESULTS

As table 4.1, 4.2 and 4.3 (see appendices) indicates, Forensic Accountants estimated inherent risk similarly to Asare and Wright's auditors who completed the same task. However, the participants rated control risk and fraud risk higher than Asare and Wright's participants. Subjects who completed version B (with checklist) of the case rated control risk and fraud risk higher than the risk levels given in version A of the case.

As mentioned earlier, subjects were asked to perform three audit procedure planning tasks. First, they were given a standard audit programme and asked to select procedures from that programme. Subjects' choice summarized in Table 4.4, Table 4.5 (see appendices) indicates that participants' choice of procedures from the standard audit programme does not appear to be associated with whether they were given the audit team's risk assessments or whether they completed their own risk assessments in either individual groups of procedures, or standard audit programme taken as a whole.

The second task involved revisions to the previous year's budgeted hours for the various categories of procedures, as summarized in table 4.6. In contrast with the findings of table 4.5, table 4.6 (see appendices) indicates that the version of the case presented to participants influenced their proposed revisions to hours budgeted for analytical procedures and cut-off tests, but not other groups of tests. In comparison with Asare and Wright's auditors, who made no meaningful adjustments to the time budget, the Forensic Accountants adjusted the audit plan to respond to the fraud risk in the case, but this was only for version B of the case where they analyzed fraud checklist and performed the risk assessment themselves, as opposed to being given the audit team's summary risk assessment and then being consulted to contribute to the audit plan.

In addition, participants overall revision to the budgeted hours for other tests (i.e. tests not mentioned in the standard programme) are significantly associated with whether they possessed a formal specialist designation (IFA-Investigation Forensic Accounting).

The Forensic Accountants with a formal specialist designation made more normative adjustments to the audit plan to address the Management fraud risks raised in the case than ought other Forensic Accountants. In other words, they increased the amount of time to be spent on non-standard audit procedures to address Management fraud risks.

The third planning task asked participants to identify any additional procedures they thought necessary, as summarized in table 4.7 (see appendices). Asare and Wright (2004) identified the additional procedures which contained a list of benchmark procedure that had been suggested by two advisers based on an analysis of SEC's 1998 Accounting and Auditing Enforcement Release (AAER). Two independent forensic experts assessed the subjects responses against the list of procedures summarized in this benchmark and the results are reported in table 4.7 (see appendices) alongside Asare and Wright's (2004) results for their auditor subjects. Since the subjects in their study completed two different versions of the case (Types A, where subjects were only given the audit team's summary risk assessment, and Type B, where subjects were required to make their own risk assessments given the case information and a risk checklist). Table 4.7 (see appendices) summarizes the audit procedures under these two headings. In comparison with Asare and Wright's auditors, the Forensic Accountants in this study identified a much smaller number of procedures listed in SEC benchmark programme.

Table 4.8 (see appendices), panels A and B, summarizes additional procedures that the participants proposed. There were 14 such procedures; with an average of 2 procedures per person (median was 2, and standard deviation was 2). Panel A of table 4.8 (see appendices) describes each procedure and fraud-related specific risks that it addresses; panel B of table 4.8 (see appendices) indicates how many procedures listed in panel A were proposed by the participants in their study. The highest number of additional procedures proposed was five (one person), and the lowest-none (seven people). Interestingly, as many as six participants proposed four additional procedures.

The first question was whether Forensic Accountants effectively modifies the extent and nature of the audit test when the risk of Management fraud is high. The study found that Forensic Accountants inherent risk judgments were indistinguishable from those of auditors who participated in Asare and Wright's (2004) study; however, their control risk and Management fraud risk assessments were higher than those of the auditors. The two different version of the case influenced Forensic Accountants proposed revisions to hours budgeted for analytical procedures and cut-off tests, but not other groups of tests. It appears that being involved in the risk assessment

checklist and assessing inherent, control and Management fraud risk sensitized the Forensic Accountants to the Management fraud risk in the case. This suggest that a consultative role for Forensic Accountants whereby an audit team provides a summary risk assessment to the Forensic Accountants may not result in a satisfactory outcome as a participative role whereby the Forensic Accountants participates in the risk assessment process. Also, overall revisions to the budgeted hours in standard audit programme for the revenue cycle depended on whether they possessed Investigative and Forensic Accountants (IFA) designation. In particular, the amount of time budgeted to other, non-standard procedures, depended on the Forensic Accountants formal designation as a specialist. More so, the testing of hypothesis showed that Forensic Accountants can effectively modify the extent and nature of audit test when the risk of Management fraud is high.

The second question was whether Forensic Accountants propose unique procedures that are not proposed by auditors when the risk of Management fraud is high? Two independents Forensic Accountants reviewed the subjects' responses to the audit procedures and evaluated whether the procedures addressed items in Asare and Wright's (2004). In comparison with Asare and Wright's auditors, the forensic accounting participants identified a much smaller number of procedures listed in the SEC benchmark programme. However, they identified a significant number of additional procedures that were not contained in Asare and Wright's but would effectively address some of the risks in the case. The Forensic Accountants in this study rated all the procedures identified by the Forensic Accounting participants and compiled the list of procedures in table 4.8 that they assessed as being as effective as or more effective than the procedures listed in Asare and Wright's (2004). Thus, if assessed solely against the benchmark contained in Asare and Wright's, it would appear that Forensic Accountants do not perform the type of audit planning task involved in this study as effectively as auditors. However, it assessed against the benchmark contained in table 4.8, the Forensic Accountants perform the task very well. Asare and Wright (2004) concluded that their auditors' willingness to consult with Forensic Accountants is a boon because the Forensic Accountants would compensate for the auditors inability to develop more effective audit tests and by suggesting such tests to them when consulted. This study confirms the assumption. However, if only Asare and Wright's procedures were used to judge Forensic Accountants procedures the conclusion would be quite different. Also, the hypothesis shows that Forensic Accountants can adequately propose unique procedures that are not proposed by auditors when the risk of Management Fraud is high.

More so, previous studies indicate that auditors are able to identify Management fraud risk factors, but may not be able to translate this knowledge into an audit plan that effectively takes them into account and enhance their chances of detecting the Management fraud if it exists. Forensic Accountants may be able to compensate for such limitations, but the study shows that in comparison with Asare and Wright's auditors who did not make meaningful adjustments to the audit plan, the Forensic Accountants adjusted the audit plan to respond to the Management fraud risks in the case, but this was only the case when they performed the risk assessment, as opposed to being given the audit team's risk assessment and then being consulted to contribute to the audit plan. Also, in comparison with the additional procedures that Asare and Wright's auditors identified to address the risks in the case, the fraud specialists in this study identified many more such procedures. This finding supports the important contribution that Forensic Accountants can make to the effectiveness of an audit plan when the risk of Management fraud is high.

In particular, the study findings suggests that involving the Forensic Accountants in the risk assessment process leads to better results than simply consulting with them by providing summary risk assessments and asking for input. The results of this study may also provide guidance on the training of Forensic Accountants. Current Forensic Accountant training tends to be focused on the investigation of Forensic Accountants once a fraud has been detected within their organization. Should auditors become more likely to consult with Forensic Accountants then the education of such Forensic Accountants may need to be revised to increase the usefulness and effectiveness of their counsel.

A limitation of the study is that Forensic Accountants in this study were Nigerian whereas the auditors in Asare and Wright's (2004) study were U.S. auditors. In an extension of this study, it is interesting to note that when comparing the Forensic Accountants with a formal specialist designation with those without such a designation, it was found that those with designated specialists made more normative adjustments to the audit plan to address the Management fraud risks raised in the case.

X. SUMMARY OF FINDINGS

The summary of findings for the research is as follows;

- (i). That Forensic Accountants inherent risk judgments were indistinguishable from those of auditors who participated in Asare and Wright's (2004), however their control risk and Management Fraud risk assessment were higher than those of the auditors.

- (ii). That a consultative role of Forensic Accountants may not result in a satisfactory outcome as a participative role whereby the Forensic Accountants participates in the risk assessment process.
- (iii). That Forensic Accountants can effectively modify the extent and nature of audit tests when the risk of Management Fraud is high.
- (iv). That Forensic Accountants can adequately propose unique procedures that are not proposed by auditors when the risk of Management Fraud is high.
- (v). That auditors are able to identify Management Fraud Risk factors, but may not be able to translate this knowledge into audit plan that effectively takes them into account and enhance their chances of detecting the Management Fraud if it exist. Forensic Accountants may be able to compensate for such limitations.
- (vi). Forensic Accountants can make to the effectiveness of an audit plan when the risk of Management Fraud is high.

XI. CONCLUSION

In conclusion, this study has analyzed why attention has to be given to issue of planning Management Fraud Risk detection procedures with the aid of Forensic Accountants. The study appreciates the potentials to contribute to further understanding of the usefulness of seeking the assistance of a Forensic Accountant and help in determining the best strategy for auditors to use when they encounter risk factors that signal a higher than normal risk of Management Fraud.

Involving Forensic Accountants in the risk assessment process leads to better results than simply consulting with them by providing summary risk assessments and asking for input.

XII. RECOMMENDATIONS

- (i). The Institute of Chartered Accountant of Nigeria, Certified National Accountants and other Accounting professional bodies should encourage formalization and specialization in the field of Forensic Accounting.
- (ii). The government and the private sector organizations should develop interest in Forensic Accounting and accountants for monitoring and investigation of any suspected and confirmed Management Fraud Risk.
- (iii). That the practicing accountants should be work towards specialization and possibly establish firm for Forensic Accounting practices only.
- (iv). That academia should emphasis skills development in the field of Forensic Accounting.
- (v). Since Nigeria have the enabling environment to practice Forensic Accounting, the Companies and Allied Matters Act 2004 as amended, should be

review to make it mandatory for every public companies to be audited annually using Forensic Accounting system, by doing so, some major Management Fraud Risk that the conventional audit system will not be able to detect can be uncovered using Forensic Accountants.

- (vi). That Forensic Accountants should be involved in the planning stages of an audit, before and after the auditors has identified Management Fraud Risk factors.
- (vii). There is need for more training and accreditation of Forensic Accountants in Nigeria.

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APPENDICES

Table 4.1 : Descriptive Statistics

Variable	n	Min	Max	Mean	Std. Dev.
Panel A					
Number of fraud risk factors checked off on the checklist	16	4	16	9.19	3.692
Inherent Risk Assessment (IR)**	16	2	9	6.00	2.191
Control Risk Assessment (CR)	16	2	8	4.81	2.040
Fraud Risk Assessment (FR)	16	4	10	6.75	1.571
Panel B					
Number of standard procedures selected to test aged trial balance (out of 3) (stdtestATBscore)	25	1	3	2.52	0.653
Number of standard procedures selected to test confirmations (out of 6) (stdCONFIRMscore)	25	1	6	5.24	1.234
Number of standard procedures selected to test for adequate of bad debt provision (out of 4) (stdBADDEBTscore)	25	0	4	3.04	1.060
Number of standard procedures selected to test cut off (out of 2) (stdCUTOFFscore)	25	1	2	1.80	0.408
Number of standard procedures selected as analytical procedures (out of 8) (stdANALYTICALscore)	25	0	6	4.76	1.562
Percentage of standard procedures selected from the entire standard program (stdPROGRpercent)	25	21.74	91.30	75.47	17.70
Panel A and B					
Proposed revisions to the time budget for the final audit program for tests of aged trial balance, in % relative to original budget (testATBrev)	26	-10	10	1.23	3.819
Proposed revisions to the time budget for the final audit programme for confirmations, in % relative to original budget (CONFIRMrev)	29	-15	15	4.93	5.669
Proposed revisions to the time budget for the final audit programme for tests of adequacy of bad debt provision, in % relative to original budget (BADDEBTrev)	27	0	15	5.59	4.601
Proposed revisions to the time budget for the final audit program for cutoff tests, in % relative to original budget (CUTOFFrev)	26	0	20	7.85	5.856
Proposed revisions to the time budget for the final audit program for analytical procedures, in % relative to original budget (ANALYTICrev)	26	0	20	5.08	5.599
Proposed revisions to the time budget for the final audit program for other tests, in % relative to original budget (OTHERTESTrev)	27	-10	50	7.96	11.203
Proposed revisions to the time budget for the final audit program for all tests, in % relative to original budget (TOTALREVHRSrev)	26	5	70	21.62	15.200

Source: Field Survey (2011)

Notes:

- * Only half of the participants (16 out of 31) were provided with fraud factor checklist, the other half received recommended assessments of inherent, control, and fraud risk.
- * Assessments were performed on a 10 point scale where 1 = extremely low risk, and 10 = extremely high risk.

Table 4.2 : Presence of Fraud Risk Factors in the case as Rated by Participants in “No Risk Assessment Provided (Fraud Checklist provided)” Condition (Version Type B)

Fraud Risk Factors Based on Asare and Wright (2004) Checklist	YES (n,%)	No (n, %)
Management's Characteristics and Influence over the control Environment		
Is a significant portion of management's compensation represented by bonuses, stock options, or other incentives, the value of which is contingent upon the entity achieving unduly aggressive targets for operating results, financial position, or cash flow?	15(93.8%)	1(6.3%)
Is there an excessive interest by management in maintaining or increasing the entity's stock price or earning trend through the use of unusually aggressive accounting practices?	10(62.5%)	6(37.5%)
Is there a practice by management of committing to analysts, creditors, and other third parties to achieve what appear to be unduly aggressive or clearly unrealistic forecasts?	10(62.5%)	6(37.5%)
Does management show an interest in pursuing inappropriate means to minimize reported earnings for tax-motivated reasons?	0(0%)	16(100%)
Does management have an ineffective means of communicating and supporting the entity's values or ethics, or communication of inappropriate values or ethics?	3(21.4%)	11(78.6%)
Is management dominated by a single person or small group without compensating controls such as effective oversight by the board of directors or audit committee?	9(56.3%)	7(43.8%)
Does management fail to correct known reportable conditions on a timely basis?	1(6.3%)	15(93.8%)
Does management see unduly aggressive financial targets and expectations for operating personnel?	9(56.3%)	7(43.8%)
Does management display a significant disregard for regulatory authorities?	0(100%)	16(100%)
Does management continue to employ an ineffective accounting, information technology, or internal auditing staff?	0(56.3%)	16(100%)
Has there been a high turnover of senior management, counsel, or board members?	0(100%)	16(100%)
Are there frequent disputes with the current or predecessor auditor on accounting, auditing, or reporting matters?	0(100%)	16(100%)
Is there any known history of securities law violations or claims against the entity or its senior management alleging fraud or violations of securities laws?	0(100%)	16(100%)
Risk factors relating to industry conditions:		
Is there a high declining of competition or market saturation accompanied by declining margins?	15(93.8%)	1(6.3%)
Is the industry declining with increasing business failures and significant declines in customers' demands?	12(75%)	4(25%)
Risk factors relating to operating characteristics and financial stability:		
Is the client unable to generate cash flow from operations while reporting earnings and earnings growth?	3(18.8%)	13(81.3%)
Are there significant pressures to obtain additional capital necessary to stay competitive considering the financial position of the entity-including need for funds to finance major research and development or capital expenditures?	9(56.3%)	7(43.8%)
Are assets, liabilities, revenues, or expenses based on significant estimates that involve unusually subjective judgment or uncertainties, or that are subject to potential significant change in the near term in a manner that may have a financially disruptive effect on the entity-such as ultimate collectability of receivables, timing of revenue recognition, realizability of financial instruments based on the highly subjective valuation of collateral or difficulty-to-assess repayment sources, or significant deferral of costs?	11(68.8%)	5(31.3%)
Are there significant, unusual, or highly complex transactions, especially those close to year-end, that pose difficult “substance over form” questions?	15(93.8%)	1(6.3%)
Are there difficulties in determining the organization or individual(s) that control(s) the entity?	0(100%)	16(100%)
Has the company experienced an unusually rapid growth or profitability especially compared with that of other companies in the same industry?	5(31.3%)	11(68.8%)
Is the company vulnerable to changes in interest rates?	8(50%)	8(50%)
Does the company have an unrealistically aggressive sales or profitability incentive program?	11(68.8%)	5(31.3%)
Is there a threat of imminent bankruptcy or foreclosure, or hostile takeover?	0(100%)	16(100%)
Is there a poor or deteriorating financial position when management has personally guaranteed significant debts of the entity?	1(6.3%)	15(93.8%)

Source: Field Survey (2011)

Table 4.3 : Comparisons of Risk Assessment provided by participants in Version B- “No Risk Assessment Provided (Fraud Checklist Provided)” Condition against Asare and Wright (2004) (Panel A) and against Values Given to Participants in Version A- “Risk Assessment Provided (No Fraud Checklist provided)” Condition (Panel B)

Panel A : Comparisons of Risk Assessment Provided by Participants in “No Risk Assessment Provided” Condition against Asare and Wright’s (2004) Participants in Similar Condition (with Fraud Checklist)

Type of Risk and Test Value	t	df	p-value	Mean Difference	95% Confidence Interval	
					Lower	Upper
Inherent Risk (IR): 5.47	0.968	15	0.349	0.530	-0.64	1.70
Control Risk (CR): 3.64	2.299	15	0.036	1.173	0.09	2.26
Fraud Risk (FR): 4.67	5.297	15	0.000	2.080	1.24	2.93

Source : Field Survey (2011)

Panel B : Comparisons of Risk Assessments Provided by Participants in “No Risk Assessment Provided” Condition against Values Given to Participants in “Risk Assessment Provided” Condition.

Type of Risk and Test Value	t	df	p-value	Mean Difference	95% Confidence Interval	
					Lower	Upper
Inherent Risk (IR): 5.9	0.183	15	0.858	0.100	-1.07	1.27
Control Risk (CR): 3.7	2.181	15	0.046	1.113	0.03	2.20
Fraud Risk (FR): 5.1	4.202	15	0.001	1.650	0.81	2.49

Source : Field Survey (2011)

Table 4.4 : Participants Agreement with Standard Audit Programme for Revenue Cycle from Asare and Wright (2004)

Standard Audit Programme for Revenue Cycle from Asare and Wright (2004)	YES (n,%)	No (n,%)
Aged Trial Balance: Obtain an aged trial balance of trade receivables as of the date selected for confirmation procedures. Perform the following: a. Cross-foot the totals and re-foot the total column and analysis columns. b. Trace total to the general control account and to the lead schedule or working trial balance c. On a test basis, trace entries for individual customers on the aging analysis (totals and aging detail) to the individual account in the account receivable subsidiary ledger and selected individual accounts from the subsidiary ledger and trace totals and aging detail to the aged trial balance to determine if aging is correct. Test footings of individual customer accounts in the subsidiary ledger.	18(72%) 24(96%) 21(84%)	7(28%) 1(4%) 4(16%)
Confirmations: Select individual customer accounts for confirmation procedures from the aged trial balance and arrange for the preparation of confirmation requests to be mailed under the auditor’s control and tested as follows: a. Trace individual confirmation requests as to balances and addresses to the subsidiary accounts receivable records. b. Send confirmations (using envelopes with the auditor’s return address) and prepare confirmation statistics c. Trace confirmation replies to the trial balance and investigate replies with differences. d. Obtain new addresses for all confirmations returned by the post office and re-mail. e. Send second requests for all unanswered positive confirmation requests. Consider sending third requests by registered or certified mail and performing alternative auditing procedures. f. Ascertain whether any accounts or notes have been assigned, pledged, or discounted by reference to minutes, review of agreements, confirmation with banks, etc	19(76%) 25(100%) 24(96%) 20(80%) 22(88%) 21(84%)	6(24%) 0(0%) 1(4%) 5(20%) 3(12%) 4(16%)

Adequacy of Bad Debt Allowance: Obtain or prepare an analysis of the allowance for doubtful accounts for the period and review adequacy of the allowance and related provision by;		
a. Review the aged trial balance as of the balance sheet date with the client's credit manager or other responsible individual to identify accounts of a doubtful nature and allowances required; review correspondence files and other relevant data in support of client's representations. Items reviewed should include past-amounts and significant amounts whether past due.	22(88%)	3(12%)
b. Examine credit reports for delinquent and large accounts	22(88%)	3(12%)
c. Review confirmation exceptions for indication of amounts in dispute.	22(88%)	3(12%)
d. Consider requesting audited financial statements for large accounts that are past due and appear doubtful.	11(42%)	14(58%)
Cut-off Tests Perform cut-off tests for sales and returns:		
a. Select sales invoice for testing from the sales register for several days before and after year-end and examine shipping records and determine that they were recorded in the proper period.	22(88%)	3(12%)
b. Select credit memos issued after year-end and examine underlying documentation (for example, record of receipt of returned goods) to determine period to which credit memo is applicable and whether it was recorded in the proper period.	23(92%)	2(8%)
Analytical Procedures: Analyze and review trends for the following relationships:		
a. Accounts receivable to credit sales	23(92%)	2(8%)
b. Allowance for doubtful accounts to account receivable (in total and in relation to past-due categories per aging analysis).	23(92%)	2(8%)
c. Sales to return all allowance	23(92%)	2(8%)
d. Expense provisions for doubtful accounts to net credit sales	19(76%)	6(24%)
e. Expenses provisions for doubtful accounts to write-offs	16(64%)	9(36%)
f. Moving average relationship of write-offs to trade receivable	15(60%)	10(40%)
g. Average balance per customer	14(56%)	11(44%)
h. Ratio of account receivable to current asset.	14(56%)	11(44%)

Source : Field Survey (2011)

Table 4.5 : Relation of Participants' Agreement with Standard Audit Program to Provided Risk Assessments (Availability of Fraud Checklist) and IFA Designation

Panel A : MANOVA Between-Subjects Effects Using Group-of Tests' Scores in the Standard Programme as Dependent Variables.

Source	Dependent Variable	Type III Sum of Squares	df	F	p-value
Checklist	stdtestATBscore	0.21	1	0.052	0.821
	stdBADDEBTscore	0.301	1	0.303	0.588
	stdANALYTICSscore	0.007	1	0.003	0.955
	stdCUTOFFscore	0.091	1	0.594	0.449
IFA	stdtestATBscore	1.369	1	3.341	0.082
	stdBADDEBTscore	3.080	1	3.101	0.093
	stdANALYTICSscore	6.786	1	3.247	0.086
	stdCUTOFFscore	0.007	1	0.944	0.835
Checklist IFA	stdtestATBscore	0.386	1	0.943	0.343
	stdBADDEBTscore	1.732	1	1.744	0.201
	stdANALYTICSscore	7.670	1	3.671	0.069
	stdCUTOFFscore	0.479	1	3.070	0.094
Error	stdtestATB score	8.603	21		
	stdBADDEBTscore	20.857	21		
	stdANALYTICSscore	43.881	21		
	stdCUTOFFscore	3.214	21		

Panel B : ANOVA Between-Subjects Effects Using Total Standard Program Score in the Standard Programme as Dependent Variable.

Source	Type III Sum of Squares	df	F	p-value
Corrected Model	92.490	3	2.121	0.128
Intercept	593.285	1	408.023	0.000
IFA	40.702	1	2.800	0.109
Checklist	2.414	1	0.166	0.688
IFA* Checklist	37.951	1	2.611	0.121
Error	305.270	21		
Total	7932.000	25		
Corrected Total	397.760	24		

Source : Field Survey (2011)

Table 4.6 : Relation of Participants' Proposed Revisions to Standard Audit Program to Provided Risk Assessment (Availability of Fraud Checklist) and IFA Designation

Panel A : MANOVA Between-Subjects Effects Using Proposed Revisions to Budget Hours for Groups-of-Tests in the Standard Audit Programme as Dependent Variables.

Source	Dependent Variable	Type III Sum of Squares	df	F	p-value
Checklist	testATBrev	29.630	1	1.914	0.182
	CONFIRMrev	82.212	1	2.526	0.128
	BADDEBTrev	2.107	1	0.081	0.779
	CUTOFFrev	170.801	1	5.246	0.033
	ANALYTICSrev	135.204	1	4.195	0.054
	OTHERTESTrev	46.907	1	0.966	0.337
IFA	testATBrev	8.940	1	0.577	0.456
	CONFIRMrev	59.091	1	1.816	0.193
	BADDEBTrev	1.004	1	0.38	0.846
	CUTOFFrev	4.674	1	0.144	0.709
	ANALYTICSrev	12.618	1	0.391	0.539
	OTHERTESTrev	210.700	1	4.340	0.050
Checklist* IFA	testATBrev	8.940	1	0.577	0.456
	CONFIRMrev	60.833	1	1.869	0.187
	BADDEBTrev	2.107	1	0.081	0.779
	CUTOFFrev	43.674	1	1.341	0.260
	ANALYTICSrev	5.894	1	0.183	0.673
	OTHERTESTrev	19.312	1	0.398	0.535
Error	testATBrev	309.659	20		
	CONFIRMrev	650.845	20		
	BADDEBTrev	521.709	20		
	CUTOFFrev	651.132	20		
	ANALYTICSrev	644.659	20		
	OTHERTESTrev	970.909	20		

Panel B : Anova Between-Subjects Effects Using Proposed Revision To Total Budgeted Hours In Standard Audit Programme Of Revenue Cycle As Dependent Variable.

Source	Type III Sum of Squares	df	F	p-value
Corrected Model	1502.934	3	2.579	0.079
Intercept	12558.258	1	64.654	0.000
IFA	1468.515	1	7.560	0.012
Checklist	29.885	1	0.154	0.699
IFA* Checklist	52.562	1	0.271	0.608
Error	4273.220	22		
Total	17924.000	26		
Corrected Total	5776.154	25		

Source : Field Survey (2011)

Table 4.7 : Participant-proposed Additional Procedures Relative to the SEC Benchmark Used in Asare and Wright (2004)

Asare and Wright (2004) Participants			Expert 1 Assessment of Fraud Specialists' Responses				Expert 2 Assessment of Fraud Specialists' Responses			
Benchmark Program Audit Test Number	Standard Program (n=31)	% of 31	Type A* (n=16)		Type B** (n=15)		Type A* (n=16)		Type B* (n=15)	
			n	% of 16	n	% of 15	n	% of 16	N	% of 15
1	10	32%	-	-	-	-	-	-	-	-
2	13	43%	6	38%	4	27%	2	13%	2	13%
3	-	-	-	-	1	7%	-	-	1	7%
4	-	-	-	-	-	-	-	-	-	-
5	1	3%	-	-	-	-	-	-	-	-
6	15	48%	3	19%	7	47%	-	-	-	-
7	9	29%	-	-	-	-	-	-	-	-
8	4	13%	-	-	-	-	1	6%	-	-
9	9	29%	3	19%	3	20%	6	38%	5	33%
10	2	6%	-	-	-	-	-	-	-	-
11	1	3%	-	-	1	7%	-	-	-	-
12	4	13%	-	-	-	-	-	-	1	7%
13	-	-	-	-	-	-	-	-	-	-
Total	68		12		16		9		9	

Source: Field Survey (2011)

Notes: Benchmark programme Procedures from Asare and Wright (2004)

1. If available, read minutes of the November 13th Meeting with distributors
2. Inquire of distributors who committed on November 13th as to their understanding of the terms of sales,
3. Inquire of distributors who were at the November 13th meeting and who did not commit to participate in the marking programme as to their reasons for not committing.
4. Inquire of undecided distributors who changed their minds between November 13th and year end, the reasons for changing their mind.
5. If minutes of November 13th meeting not available, inquire of sample of distributors at the meeting to ascertain their understanding of the issues discussed.
6. Review correspondence file with distributors for evidence of side agreements.

* Type A is version of the experimental case where subjects only given the audit team's summary risk assessments;

* Type B is version of the experimental case where subjects were required to make their own risk assessments given the case information and a risk checklist.

7. Investigate the rationale for precision's involvement in the storage and warehousing of distributors sales.
8. Ascertain ability of distributors to store huge orders and the responsibility for paying storage costs.
9. For all increase in credit limits, review client analysis of distributor credit-worthiness. If no analysis exists, perform probing, substantive analysis of distributors; creditworthiness.
10. Test with end-users to confirm that precision as encouraging them to buy from the distributors.
11. Compare sales in the first quarter of 2000 to that indicated by precision's operating plan.
12. Look at subsequent cash receipts for some of the large distributor's sales.
13. Compare orders taken via the marketing programme to authorize credit limit.

Table 4.8 : Participant-Proposed Additional Procedures beyond those Listed in Asare and Wright (2004)

Panel A : Description of Additional Procedures Proposed by Forensic Accountants.

No.	Description of Risk	Procedure
1	Revenue Recognition: Revenue are recognized by precision before they are ended (Fraud specialist referred to this risk by such labels as "Channel Stuffing", "Bill and Hold")	Sales to distributors and not sold on to the end user should be measured against the revenue recognition criteria. Abnormal finance terms are indicators of non-compliance with GAAP. Perform the following on sample of distributors: Obtain the contract;

		Ascertain whether the 4 revenue recognition criteria are met; and Determine whether precision assisted the customer in obtaining financing or provided direct financing for the sale.
2	Precision is shipping goods in excess of what distributors have committed to and/or have the capacity to sell.	Select key item sample of distributors for confirmation of inventory on hand and amount receivable by Precision. Contact any non-replies by phone directly to enquire of status of account (in the circumstances shipment records or subsequent payments may be inappropriate and of questionable value). Make enquiry of 4 distributors regarding their allotment minima. Request and review schedule of allotments of product that must have been prepared by the company and probably revised several times.
	Channel Stuffing	Review the terms under which precision ships goods to customers to ensure they are based on a purchase contract and that no channel stuffing has occurred.
3	Analog sales/ purchases	Analyze monthly analog sales and order trends of for company and industry. Assess impact of programme on historical purchases by each of the known customers. If end users would be increasing analog purchases to an implausible level, assessment of the consequences of the distributors were still having significant quantities on hand. Ultimately, if end uses cannot absorb the equipment what happens? (e.g., bed debts, damage to distribution chain or does precision step into rescue the distributors and or provide additional incentives for the end users).
4	Consignment	Ensure no consignment type arrangement exist especially for customers who don't have warehouse capacity.
5	Customers verification	Obtain listing of customers who have been distributed funds by precision. Investigate any distributors and sales that are comfortable in timing or amount. Obtain supporting documentation to understand the nature of the distribution as well as whether all revenue recognition criteria have been met.
6	Precision recognizes revenue upon shipment. If they ship to warehouse, but customer does not have the need/capacity for such goods, the company may be improperly recognizing revenue, when all required criteria for recognition have not been met.	Assess ownership of good in offsite storage Has legal title passed Who owns offsite storage Who is responsible for rent Who pays insurance (many)
7	Confirmation with distributors	Confirm with distributors all amounts; Removed from precision's inventories but not delivered to distributors; and held at warehouse or under accommodations to ensure they meet the requirements for revenue recognition according to GAAP. Tie these amounts into sales contracts.
8	Allowance for doubtful accounts Provision for bad debts is not adequate	Obtain download of customers list. Run customer list against credit rating agency database. Focus particularly on sales near period end. Examine supporting documentation to ascertain whether amounts were collectible at point of revenue recognition.
9	Account receivables and doubtful account	Assess the reasonableness of accounts receivable collection and allowance for doubtful accounts. (Although credit has been extended, it is uncertain on what basis credit history would support collectability since credit history reflects past, but customers already acknowledge difficulty in paying for new management initiative. Uncertain if they can sell analogue if precision is already experiencing difficulty selling).
10	Analog sales on precision estimate	Obtain analog sales data for distributors participating in the marketing programme. Compare distributors' sales to third parties to distributor's analog purchase from precision. Determine if distributors are on track for selling 30% (based on precision estimate) of their inventory when their promissory notes are due to precision.
11	Right to return Distributors will ship back product prior to or on June 2006	Review the terms under which precision will accept return of their goods.
12	Historical rates of returns	Analysis and assess the historic rates of returns for participation in

		marketing programmes and actual returns during field work period to determine if provision needed and if so the adequacy of management's provision.
13	Understated Expenses Precision has not recorded all the expenses associated with the programme. As this is a new programme management judgment will be used to determine expenses.	Review the documentation prepared by precision to estimate the effects of the new marketing programme. Identify costs factored into the analysis of the programme and what costs have been omitted (if any). Examine and recalculate company's estimate of costs and revenue contra amounts and those actually accrued (if any).
14	Motivation for programme The establishment of the marketing programme was motivated by management compensation plan rather than sound business rational and therefore reflects a conflict of interest.	Determine the impact of the marketing programme in management compensation by comparing the year's bonus to top management (by employee) to prior year's to see how much individuals are benefiting from marketing programme.

Source : Field Survey (2011)

Panel B : Frequency of Additional Procedures Proposed by Forensic Accountants

Number of Additional Procedures Proposed	Number of participants	%	Cumulative %
0	7	22.6	22.6
1	8	25.8	48.4
2	7	22.6	71.0
3	2	6.5	77.4
4	6	19.4	96.8
5	1	3.2	100.0
Total	31	100.0	

Source : Field Survey (2011)