Evaluating the Effectiveness of Analytical Tools of the Jordanian Audit Bureau in Detecting Accounting Fraud

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Abstract

The purpose of this study was to assess the effectiveness of analytical procedures that are used by the Jordanian Audit Bureau in the audit process to discover accounting fraud in public institutions. In particular, the study focused on identifying what types of fraud are detected and what types of fraud are missed by the analytical tools. The study attempted to address the challenges and obstacles that the Audit Bureau faces when detecting fraud. The responsibility of the Audit Bureau in Jordan is to maintain and control public funds; this requires using analytical methods and tools to supervise, examine, audit, and review the accounting operations in these institutions. Using a convenience sampling method, the research surveyed 100 auditors in Jordan in order to assess the effectiveness of analytical procedures that are used by the Jordanian Audit Bureau in the audit process to discover accounting fraud in public institutions. The findings of this study revealed that the efficiency of the current Jordanian Audit Bureau analytical tools to detect accounting fraud in public institutions has a significant effect on the occurrence of accounting fraud in Jordanian institutions. In addition, sufficiency of the current Jordanian Audit Bureau analytical tools to detect accounting fraud in public institutions has a significant effect on the occurrence of accounting fraud in Jordanian institutions. The results also indicated that more experienced auditors tend to agree that more analytical tools are still needed to combat accounting fraud, and damaged corporate reputation increases accounting fraud.

Keywords: Accounting Fraud, Analytical Tools, SAS, Efficiency, Sufficiency, Jordan

1. Introduction

Concerns about fraud have been of practical significance for as long as written records have been kept, and indeed may be a key reason for the development of writing and record keeping. Much of the fraud literature starts with a recitation of infamous accounting (Clikeman, 2009) and corporate scandals and frauds (Punch, 1996), which often excite public interest and concern. Concern with fraud and white collar crime affect public confidence in institutions as diverse as stock markets, auditors, bankers, corporate executives and government (Sanders et al., 1996).

Various corporate, social, and political scandals, as well as fraud and corruption in government, politics, financial institutions, corporations, NGOs (non-governmental organizations), and religious institutions impact the legitimacy of such institutions. They also impact how economic, political, and social lives are organized, as well as attitudes and policies toward innovation, entrepreneurship and compliance to rules and law (Snider, 2000). Yet there is much moral ambiguity in life and managers (and accountants) spend much of their life in "moral mazes" (Jackall, 1988, p. 155), negotiating and making sense of everyday fraud and wrongdoing. Fraud, variously defined, is an area that has been discussed and examined from many different perspectives and in relation to many different practices, in varying contexts.

2. Introduction to the Problem

Analytical tools are considered the most important procedures used by the auditors in the audit process; through these procedures, auditors can identify the financial indicators of the institutions and can reveal the strengths and weaknesses of the internal regulation to protect institutional funds. Accounting fraud has increased in recent years, and it has attracted much interest from investors, analysts, and regulators (Kotsiantis, Koumanakos, Tzelepis, & Tampakas, 2006). The financial world has accumulated a large number of cases against accounting auditors, blaming them of negligence in discovering accounting fraud. As a result, many corporations reduced the purchase of audit services (Thomson, Hodge, & Hoskins, 1997).

Several departments practice financial control over government institutions; the Jordanian Audit Bureau is one of the most important of these entities as an independent regulatory entity, which is not an executive department. Hence, the bureau practices its work in the financial control of the government institutions without political and bureaucratic influence.

3. Purpose of the Study

The purpose of this study was to assess the effectiveness of analytical procedures used by the Jordanian Audit Bureau in the audit process to discover accounting fraud in public institutions. In particular, the study focused on identifying the extent and types of fraud detected when using the analytical tools. The study addressed the challenges and obstacles the Audit Bureau faces when detecting fraud. The significance of this research is that it focused on a new issue; it examined the sufficiency and efficiency of the analytical procedures used by the Jordanian Audit Bureau in public institutions to detect accounting fraud.

4. Significance of the Study

Analytical procedures have become increasingly indispensable to the Jordanian Audit Bureau, and the audit companies are considered an important part of the audit process. This research will help the Jordanian Audit Bureau to explore the weaknesses of the analytical tools they use when reviewing institutions' financial and non-financial statements. Moreover, it will provide the auditors and readers with a general understanding of analytical procedures and explain the process that auditors should use in applying analytical procedures. The findings could determine the weaknesses of the analytical tools that are currently used by Jordanian Audit Bureau, and could improve these tools in other ways.

5. Research Question

In the current study, the independent variables were efficiency and sufficiency of Audit Bureau analytical tools as determinants of Jordanian institutions' financial conditions. The dependent variable was the occurrence of accounting fraud in Jordanian institutions. The goal of the research was to determine the ability of the analytical tools to predict fraud. Therefore, the current study sought to answer the following question:

RQ: Is the effect of efficiency and sufficiency of the current Jordanian Audit Bureau analytical tools to detect accounting fraud in public institutions significant on the occurrence of accounting fraud in Jordanian institutions?

6. Research Hypotheses

In the light of previous studies and based on the research question, this research tested the following hypotheses:

- H1: Efficiency of the current Jordanian Audit Bureau analytical tools to detect accounting fraud in public institutions has a significant effect on the occurrence of accounting fraud in Jordanian institutions.
- H2: Sufficiency of the current Jordanian Audit Bureau analytical tools to detect accounting fraud in public institutions has a significant effect on the occurrence of accounting fraud in Jordanian institutions.

7. Literature Review

Auditing is the examination undertaken by auditors that indicate whether the financial information provided is stated fairly or not (Loughran, 2010). The rampant growth and augmenting uncertainty in the business environment has evolved a massive business risk; to cure it, auditing has become necessary around the globe (Soltani, 2007). It has been particularly important for the stakeholders to know about the business, the practices in which they engage, the transactions in which they are involved, their present and future vision, etc. Such information is usually provided in the form of financial statements, and the financial statement audit is thereby conducted to ensure the fairness of such statements.

The audit program is prepared specifically for a ach audit. It entails the details of the to-do list, i.e., how the auditors are going to accomplish their audit duty. Checklists are part of such an audit program. They contain the essentials of the transactions specific to the client's business and are prepared specifically for every client. The checklists usually contain the list of items on a transaction or event in order to ensure the audit's (a) occurrence, (b) completeness, (c) authorization, (d) accuracy, (e) cutoff, and (g) classification (Porter, Simon, & Hatherly, 2008). Through the use of analytical tools, auditors can ensure the integrity of the balances of the financial statements in the final stage of the audit. Nassar and Bahrami (2008) mentioned that auditors require the collection of sufficient evidence to substantiate their opinion when preparing the reports.

Because of the diversity of public institutions and the diversity of the administrative structure and internal systems in these institutions, understanding the effectiveness of the analytical tools in this industry requires systematic research. Due to increasing control mechanisms and procedures of the Audit Bureau to improve the financial and administrative performance in these institutions and the growing need to improve its services, it is necessary to study the sufficiency and effectiveness of analytical tools in isolation after controlling for the effects of other control mechanisms (Saadeh & Abdullah, 1984).

Al Rahahleh (2011) studied the multiple governmental authorities that control public funds in Jordan, determining their functions, responsibilities, and legal regulations to assess their effects on the control process to preserve public funds, determine the problems faced by these governmental authorities, and make recommendations necessary to develop control processes. The researcher in this study analyzed the legislation related to the control of public funds in Jordan and collected data through a survey distributed to the employees and financial managers in the internal control departments in the Ministry of Finance and to the internal auditing employees in the Jordan Audit Bureau.

Al Rahahleh (2011) mentioned that four authorities practice internal control of the governmental funds in Jordan: the control of the Ministry of Finance (through the Audit Bureau), the internal control units of the departments, the internal auditing units in the departments of financial affairs, and the General Budget Department. The author found that because many authorities control the same departments, this leads to overlap, repetition of the same work, and duplication in the jobs of these authorities. The author also mentioned that there are some advantages for multiplicity of controls. For instance, it will lead to improving audit quality and procedures, make financial statements more reliable, and achieve the overall objectives of internal auditing. Many obstacles were found in this study that the governmental internal control faces, such as weakness in administrative structure organizing, weakness of the regulation and elements of internal control, and the need to issue more special legislation to give more power to internal auditing.

Sadique and Roudaki (2010) reviewed the role of market regulators in Malaysia, in particular the Malaysian Security Commission (MSC), and analyzed the fraud cases posted on the MSC website. The Malaysian capital market focuses on family-owned companies. Most of the company shares are owned by mangers from the same family; because of this, the manager will seek to expand the value of the corporation since ultimately it increases the fortune of the family. The authors mentioned that their analysis of data was implemented in four parts: the criminal prosecution, civil actions, administrative actions, and cases compounded. Descriptive statistics were set up as follows:

- The fraud was classified according to the accounting and auditing process.
- The analysis focused on the perpetrators, the person/people that perpetrated the fraud.
- The general properties analyzed were the type of the corporation and the type of business in which each of the corporations traded.

This research disclosed the number of incidents of corporate fraud reported from 2002-2007, which are classified according to the nature of fraud, perpetrators, ethnicity, and type of corporation. The high percentage of fraud perpetrated by management shows that fraud is a dangerous threat to the corporations, specifically to investors in Malaysia. This study was limited because of its descriptive nature; it depended on information published in the MSC Enforcement Releases. Recommendations for future studies made by the authors included analysis of the nature of crimes and the sanctions, and their effects on fraudulent activities.

Albrecht (2008a, 2008b) focused on accounting fraud, indicating that fraud includes a great variety of activities, including bribery, political corruption, and business and employee fraud. Albrecht mentioned that business fraud (often called professional fraud) is usually the most interesting to accounting experts and university faculty members because it is a dangerous phenomenon faced by institutions, companies and individuals; it has a major impact on institutions, their employees, and economic development. Moreover, fraud may sometimes be the reason for economic crises and the collapse of the financial capacity of individuals, institutions, shareholders, employees, companies, and possibly the state.

Hepworth (2002) showed that the hiring of qualified personnel would increase the effectiveness of the internal audit and internal auditing regulation. However, hiring must be done in accordance with the practice of internal auditing and the organization’s standards in order for it to achieve its strategic objectives.

Hepworth's study found that internal auditing includes the auditing of financial and operational performance and programs and information systems. The author mentioned that the internal auditor should engage in regular practical training.

Wells (2002) aimed to clarify the forms of fraud that have occurred and to identify the perpetrators of fraud, the best possible ways to detect fraud, how to prevent fraud, and the impact of an audit on the size of the fraud. This study used a descriptive methodology approach. Results of the study showed the audit has an important influence on the volume of losses due to fraud because of the following:

- The audit procedures can detect fraud while using routine procedures, like examining documents, analysis of financial data, and confirmation of assets.
- The advanced knowledge of auditors and their efficiency discourage perpetrators of fraud, thereby contributing to fraud prevention.
- The study showed that 64% of fraud is committed by executives, males are more likely to commit fraud than females, and 33% of frauds discovered were committed by two or more people. In addition, the largest fraud loss was found within public companies.

8. Methodology of the Study

The study population represents all auditors of the Jordanian Audit Bureau that are working in Jordanian public institutions (the auditors included Assistant Auditors, Senior Auditors, Executive Assistants, Head controls, Officials officers, and auditors). Thus, the target population was the accounting professionals in the Jordanian Audit Bureau who work as auditors in public institutions because auditors also work in different departments and ministries. The study's target population description also included auditors who had any experience in the accounting or auditing field (in the Audit Bureau).

The sample was a randomly selected group of auditors from different strata who work in public institutions. Stratification refers to auditors at different levels of hierarchy, e.g. Assistant Auditors, Senior Auditors, Executive Assistants, Head controls, Officials officers, or auditors. A random sampling procedure was used to select the sample for this study so as to represent the entire population and give each auditor an almost equal chance of selection (Creswell, 2009; Gerrish & Lacey, 2010). Primary data were collected from questionnaires. A 5-point Likert scale was used to measure the views of respondents, where "5" represented strongly agree, "4" represented agree, "3" represented Neither agree nor disagree, "2" represented disagree, and "1" represented strongly disagree. A survey was the main tool of measurement, which was designed to collect data from respondents for this study. In order to achieve the objectives of the study and to test the hypotheses, descriptive measures were used to characterize the population, such as ANOVAs, Chi squares, percentages, frequencies, and arithmetic mean. The survey had three sections; the first section included general information about sample like the gender, qualifications, specializations, and experiences. The second section asked about the efficiency of analytical tools to predict accounting fraud in public institutions. The third section determined if these tools are sufficient to detect fraud in analyzing financial and non-financial statements in public institutions.

9. Results of the Study

Amongst the total auditors surveyed in the research, a majority (30%) of the respondents had received a Masters degree, followed by 27% of the auditors who had achieved a Bachelors degree, 15% who had earned a Doctorate degree, and 15% who had earned a Higher Diploma. In addition, nine percent of the respondents are Diploma holders whereas four percent had qualifications of high school or less (see Table 1).

Table 1: Qualifications of Participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High school or less	4	4.0	4.0	4.0
	Diploma	9	9.0	9.0	13.0
	Higher Diploma	15	15.0	15.0	28.0
	Bachelor degree	27	27.0	27.0	55.0
	Masters Degree	30	30.0	30.0	85.0
	Doctorate	15	15.0	15.0	100.0
	Total	100	100.0	100.0	

10. Testing Research Hypotheses

- H1: Efficiency of the current Jordanian Audit Bureau analytical tools to detect accounting fraud in public institutions has a significant effect on the occurrence of accounting fraud in Jordanian institutions.

From Table 2 it is observed that the *p* value 0.00, which is less than the maximum acceptable *p* value of 0.05 for a 95% confidence interval, has the F- statistical value as 2.680. Thus, the F-statistic is significant and the Null hypothesis is rejected. Therefore, it could be said that the efficiency of the current Jordanian Audit Bureau analytical tools to detect accounting fraud in public institutions has a significant effect on the occurrence of accounting fraud in Jordanian institutions.

Table 2: ANOVA: Efficiency of the Jordanian Audit Bureau Analytical Tools

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	55.072	13	4.236	2.680	.000
Within Groups	135.928	86	1.581		
Total	191.000	99			

- H2: Sufficiency of the current Jordanian Audit Bureau analytical tools to detect accounting fraud in public institutions has a significant effect on the occurrence of accounting fraud in Jordanian institutions.

From Table 3 it is observed that the *p* value is 0.00 which is less than the maximum acceptable value of 0.05 for a 95% confidence interval. The F- statistical value is 3.083. Thus F-statistic is significant and the Null hypothesis is rejected. In other words, the sufficiency of the current Jordanian Audit Bureau analytical tools to detect accounting fraud in public institutions has a significant effect on the occurrence of accounting fraud in Jordanian institutions.

Table 3: ANOVA: Sufficiency of the Jordanian Audit Bureau Analytical Tools

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	69.105	13	5.316	3.083	.000
Within Groups	148.285	86	1.724		
Total	217.390	99			

11. Summary and Conclusion

The purpose of this study was to assess the effectiveness of analytical procedures used by the Jordanian Audit Bureau in the audit process to discover accounting fraud in public institutions. In particular, the study focused on identifying the extent and types of fraud detected when using the analytical tools. The study attempted to address the challenges and obstacles the Audit Bureau faces when detecting fraud. The responsibility of the Audit Bureau in Jordan is to maintain and control public funds; this requires using analytical methods and tools to supervise, examine, audit, and review the accounting operations in these institutions. Using a convenience sampling method, 100 auditors in Jordan were surveyed in order to assess the effectiveness of analytical procedures used by the Jordanian Audit Bureau in the audit process to discover accounting fraud in public institutions.

The findings regarding efficiency in the first hypothesis specifically indicated and supported previous findings that the use of analytical procedures during the test stage helps to predict the existence of manipulation in financial and non-financial statements (Lenard & Alam, 2009). In addition, the use of analytical tools while conducting audit procedures adds more evidence for the auditors, which helps them construct their opinion on the accuracy of the statements (Hoffman & Zimbelman, 2009). The findings also showed that the financial and non-financial statements that auditors analyzed are scalable for analytical procedures and conducting comparisons. Moreover, the findings showed that the results of using the analytical tools are accurate, so outcomes can be predicted. In addition, the use of analytical tools can help auditors detect normal or unexpected relationships in financial and non-financial statements (Coram, Ferguson, & Moroney, 2008).

The findings related to sufficiency in the second hypothesis specifically indicated and supported the previous findings that analytical tools can help to complete the audit task efficiently (minimal resources) and sufficiently (achieving the goal of the audit obtaining sufficient and appropriate evidence; Coram et al., 2008).

In addition, the findings indicated that analytical procedures can help to judge the integrity of financial and non-financial statements (Hoffman & Zimbelman, 2009). Additionally, the findings indicated that analytical tools are used after the completion of audit procedures (Lenard & Alam, 2009). Also, the findings indicated that the use of analytical tools helps auditors solve problems related to misappropriation of assets by employees and top management. It was also found that the analytical tools are comprehensive enough to achieve objectives given the determined time and recourses allocated, and that the use of analytical tools reduced losses from fraud.

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