



UTILISATION OF FORENSIC AUDITING TECHNIQUES FOR FRAUD DETECTION IN MEDIUM SCALE BUSINESS IN UYO, AKWA IBOM STATE, NIGERIA.

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Abstract

The study examined utilisation of forensic auditing techniques for fraud detection in medium scale businesses in Uyo, Akwa Ibom State. Two research questions were raised to guide the study. Two hypotheses was formulated and tested at .05 level of significance. Related literatures were reviewed and referenced accordingly. Descriptive survey research design was used for the study. The population of the study was 76 accounting staff from 26 registered medium scale businesses in Uyo. A census sampling technique was adopted to select 76 accounting staffs of the 26 registered medium scale businesses in Uyo. A 10 item structured questionnaire titled: 'Utilisation of Forensic Auditing Techniques for Fraud Detection in Medium Scale Business in Uyo, Akwa Ibom State' was used for data collection. The instrument was validated by a lecturer in the Department of Business Education, University of Uyo. Cronbach Alpha reliability coefficient of .91 was obtained. Seventy-six copies of the instrument was administered to the respondents by the researchers and were retrieved on the spot. Data collected were analysed using the mean statistic while t-test was used to test the two null hypotheses. A mean score of 2.50 and above was recommended highly utilised. Based on the findings it was recommended that; Medium scale owners and managers should adopt a strategic approach unknown to employees to enhance proper background checks, which will monitor all employees' activities for prompt action by the management. This will put every worker on check and task accomplishment.

Key words: Utilisation, Forensic Auditing, Fraud Detection and Medium Scale Business

Introduction

Medium scale businesses refer to an enterprises or organisations that operate on an extensive level, often involving a significant volume of resources, capital, and personnel. These businesses typically have a wide reach, serving diverse markets and often operating in multiple locations, regions, or even countries. Medium scale businesses are the life wire of any nation because of the rate at which the economy of a country generates and sustains annual increase in its Gross Domestic Products (GDP) depends, to a great extent, on the volume of activities of medium scale business.



According to the Nigerian Institute of Management (2018), a medium scale business (MSB) is an enterprise that has full-time labour force of more than 100 people and a total cost and working capital, less cost of land, of more than two hundred million naira. Medium scale business contribute immensely to the economic development of a nation.

However, reports in recent times have shown that fraudulent practices pose a serious threat to the existence of MSBs in Uyo, Akwa Ibom State. Fraud impairs the integrity, virtue or moral principle of employment and requires innovative methods such as forensic auditing to detect it. Fraud is so pervasive that it has become the greatest bane on business growth and a clog in the wheel of economic development. The existence of fraud in MSBs is becoming rampant, alarming and unacceptable, and this can be shown in the large percentage of report in issues of financial fraud which includes; cash theft, fraudulent disbursement, inclusion of ghost workers in an organization's payroll, inventory theft, income smoothing, fraudulent reporting, cash skimming, among others.

In medium scale business, forensic auditing can be effective for fraud detection and control. Okoye, *et al* (2013) posited that forensic auditing is the application of auditing skills to situations that have legal consequences. It involves the gathering and presentation of financial information in a form that will be acceptable by a court of jurisprudence against perpetrators of economic crimes. Forensic auditing offers a working set of tools for managers of medium scale businesses to investigate detect and prevent various forms of white-collar financial impropriety and inappropriate or inefficient use of resources. It is carried out to produce evidence by utilizing specialized techniques and skills to carry out an inquiry in such a manner that the outcome will have implication to a court of law. The ultimate goal of forensic auditing is to obtain a confession from fraudsters, if a fraud has actually occurred.

Forensic auditing techniques are used to identify and gather evidence to prove, for example, how long a fraud has been carried out or how it was conducted and concealed by the perpetrators. Forensic auditing techniques refer to the different inquiry methods adopted by auditors for the purpose of providing evidence of fraud against an individual in the court of law. Some of the techniques of forensic auditing according to Okoye and Gbegi (2013) are data mining application, background checks, analytic technique, surveillance performance, investigative technique.

Data mining application is a used by forensic auditors to examine data sets or metadata to identify patterns, anomalies and trends to answer business questions and provide predictive values for future events. Unusual transactions (those falling outside expected norms) may signal the need for an investigation by forensic auditors who apply their experience in data mining. According to Stilltow (2016), data mining automates the detection of relevant patterns in a database using defined approaches and algorithms to look into current and historical data that can be analyzed to predict future trend.

Forensic auditors use background checks for a variety of purposes. Sometimes, background check is used to seek direct evidence of fraud, digging deeply into related party transactions. Background information can help to stem the tide of fraudulent practices which could be sourced from government agencies; commercial media database providers, local and international bodies among others. Data and information obtained from different sources need to be analyzed.

Data Mining and Fraud Detection in Medium scale Business Organizations

Adeyemo and Oriola, (2020) observed that data mining originated from forensic science, it is described as the application of data mining techniques and scientific tools to investigative process for good and sound evidence. The term "data mining" involves digging down into a database (data warehouse) and looking for gold nuggets of valuable information. According to ICAN (2014), data mining is a variety of techniques to identify nuggets of information or decision-making knowledge in bodies of data, and extract these in such a way that they can be put to use in areas such as decision support, prediction, forecasting and estimation.

Sirikul, (2021) observed that in recent years, database technology has advanced in stride in business organizations. A vast amounts of data have been stored in the databases. Database can be mined for the purpose of detecting frauds. Data mining is a set of computer-assisted techniques designed to automatically mine large volumes of integrated data for new, hidden, unexpected information or patterns. Manning (2022) noted that data mining is known as Knowledge Discovery in Databases (KDD). It is the use of sophisticated procedures and technologies to identify concealed patterns in financial, non-financial and textual data that would not otherwise be detectable due to the size and complexity of data. Patterns that can be identified in data mining include numeric, time, name and geographic patterns.

Golden, *et al* (2015) provided the following benefits of data mining:

1. The forensic auditor is able to analyse a large number of transactions, identify trends, spot documents that need further review, and gain initial insights without waiting for the cumbersome process of collecting documents by traditional means.
2. Data mining is often a more cost-effective and comprehensive approach than hard copy document review.
3. It enable computerised information which provides reasonable check of findings based on documents, especially in situations in which document sets may be incomplete. It also enables the investigating team to check 100% of an entity's transactions for certain characteristics such as data, time, naira amount, approval, and payee, depending on the nature of the computer record.
4. With data analyses linked to presentation software, findings can be more clearly summarised for board, audit committee, or management presentations.



Advancement in technology has impacted on data mining techniques in business organisations. The introduction of microcomputers and networks, and the evolution of middle wares, protocols, and other methodologies that enable data to be moved seamlessly among programmes and other machines, allow companies to link certain data questions together (Stilltow, 2016).

Different types of data mining tools are available in the market place, each of which has its own strengths and weaknesses (Siriku 2021). Internal auditors need to be aware of the different kinds of data mining tools available and recommend the purchase of a tool that matches the organisation's current detective needs. This should be considered as early as possible in the project's lifecycle, perhaps in the feasibility study. Most data mining tools can be classified into one of the three categories: traditional data mining tools, dashboards, and text-mining tools (Stilltow 2016).

A good way to apply advanced data mining techniques is to have a flexible and interactive data mining tool that is fully integrated with a database or data warehouse. Using a tool that operates outside of the database or data warehouse is not efficient. Using such a tool will involve extra steps to extract, import, and analyze data (Bozkurt, 2023). When a data mining tool is integrated with the data warehouse, it simplifies the application and implementation of mining results. Furthermore, as the warehouse grows with new decisions and results, the organization can mine best practices continually and apply them to future decisions. Regardless of the technique used, the real value behind data mining is modeling, it is the process of building a model based on user-specified criteria from already captured data. Once a model is built, it can be used in fraud detection.

Background Checks and Fraud Detection in Medium scale Business Organisations

Background checks is a crucial activity in a bid to detect and prevent fraud in a business organisation. Jonny and Gregory (2015) observed that background checks is used to seek direct evidence of a fraud. In a related study, Chianese, et al (2021) opined that background checks can help to identify investigative leads, locate investigative, and perform asset search. Songer (2016) posited that enormous growth in information resources available on the Internet has revolutionized the investigative process. Songer further explained that in a matter of hours, a skilled forensic auditor can develop critical leads and make connections that may never be found through traditional investigation.

Jonny and Gregory (2015) submitted that most valuable sources of information fall into two main categories, news and media coverage and public record. In Nigeria, financial dailies and law reports give information on various cases of financial misappropriation and developments in the business world. Media can provide historical and background information regarding entities and individuals. According to Jonny and Gregory (2015) these source includes: local, national and international newspapers, magazines, trade publications, radio and television broadcasts. A high profile subject's legal, financial or business trouble are often published in news media in well-researched and thoughtful articles.



Okoye, *et al* (2013) stressed that the media can also be helpful in identifying a subject's employment history and personal history as well as charitable and philanthropic relationships. Hence, information obtained from these sources can be used to facilitate admission from a fraudster in a business organisation. Public records can support the investigation process in fraud cases. The authors noted that records such as birth, marriage and divorce certificates can help in an investigation process. These records could be helpful in locating sources, as well as providing information about the subject under investigation. More so, professional registration board provides information on the status of a registered business or person. Business registration board such as Corporate Affairs Commission could provide information that can help in detecting fraudulent activities.

Undisclosed related-party transactions are common. In some nations and industries, doing business with friends and relatives is common place. For global entities, even though there may be a requirement to disclose related-party transactions and business interests, there is no guarantee that the practice is being followed or even communicated at remote locations. Agbawe (2022) stressed that what may be a sound policy in the handbook may not be practiced. Related-party transactions bear a higher risk of including sham transactions. Transactions between related parties are often difficult to audit because they are not always accounted for in a manner that communicates their substance and effect with transparency. Adeniyi (2021) argued that the possibility of collusion always exists given that the parties are, by definition, related. Internal controls, moreover, might not identify the transactions as involving related parties. While related-party transactions may involve improper revenue recognition, they may also involve other parts of the statement of financial position or income statement.

International Accounting Standard (IAS) 24, on related-party disclosures in Adeniyi (2021), stated that parties are said to be related if one party has the ability to control the other party or exercise significant influence over the other party in making financial and operating decisions. Sytel (2016) opined that the auditor may inquire about an individual outside business interests and then tries to determine whether they have properly disclosed the volume of transactions, if any is occurring between the entities. If certain entities are under scrutiny, the auditor may consider requesting a public records check of the entity to see whether there are indicators of undisclosed ties to a particular individuals. Ekpo (2020) maintained that an auditor needs to review information provided by those charged with governance and management, identify the names of all known related parties and should perform the following audit procedures in respect of the completeness of this information:

1. Review the nature and level of business transacted with major suppliers, customers, borrowers, and lenders to look for previously undisclosed relationships.
2. Review confirmations of loans receivable and payable for indications of guarantees.
3. Review material cash disbursement, advances, and investments to determine whether the company is funding a related entity.
4. Test supporting documentation for contracts and sales orders to ensure that they have been appropriately recorded.



5. Inquire whether management, owners, or certain individuals conduct business with related parties.
6. Inquire about side agreements with related parties for right of return or contract cancellation without recourse.

Background checks could facilitate fraud detection and also act as a deterrent to criminally minded individuals who may want to engage in fraudulent activities in the future. The above review activities could help to expose related-party fraudulent activities, thereby nipping them in the bud. Relatedly, an analytic technique could also be helpful in fraud detection in medium scale business organisations.

Statement of the Problem

The frequent occurrence of fraud in medium scale business organizations in Akwa Ibom State has become rampant and persistent. Report shows several cases of misappropriation, embezzlement, cash theft, inventory theft, cheque tampering, payroll scam, swindle, forgery and kickbacks practices. This has resulted in huge financial scandals and bankruptcies of medium scale business organizations. Many MSBs have resorted to liquidation and continuous downsizing of workforce due to lack of sufficient funds to meet up with financial obligations such as payment of salaries, corporate taxes, audit fees, dividend and others. Due to this situation, many people have lost their jobs and many more will continue to be affected adversely because of the present economic situation. It is sad to say that no business is immune to fraud. Despite the fact that Nigerian government has set up two key anti-graft agencies: the Economic and Financial Crimes Commission (EFCC) and the Independent Corrupt Practices and Other Related Offences Commission (ICPC) to fight fraud and corruption in the country, significant change in their activities is yet to be seen as the business environment is still soaked and characterized by fraud.

To this effect, the problem of this study connotes that high level frauds practices are occurring frequently in medium scale business organisations (MSBOs) in Uyo, Akwa Ibom State leading to the downsizing and complete winding-up of many such organizations due to financial insolvency. This have results in the fall of investment by local and foreign investors in medium scale business, foreign investors are discouraged, if the ugly trend is not urgently reversed, the state will lose its attraction to investors, standard of living will fall and Uyo being the capital of Akwa Ibom State will lag behind in socio-economic development.

MSBOs employees continue to device methods of fraud, despite the application of traditional auditing practices. This poses a great problem and hence the need for urgent utilization of forensic auditing techniques to prevent, detect or reduce fraud to the barest minimum. Hence, this provided a fertile ground for this study; utilization of forensic auditing techniques for fraud detection in medium scale business organizations in Uyo, Akwa Ibom State, Nigeria.



Purpose of the Study

The purpose of this study was to determine the level of utilisation of forensic auditing techniques for fraud detection in medium scale businesses in Uyo, Akwa Ibom State, Nigeria. Specifically, the study sought to determine the level of utilisation of:

1. data mining application for fraud detection in medium scale business in Uyo, Akwa Ibom State;
2. background checks for fraud detection in medium scale business in Uyo, Akwa Ibom State;

Research Questions

The following research questions are developed to guide this study:

1. What is the level of utilisation of data mining application for fraud detection in medium scale business in Uyo, Akwa Ibom State?
2. What is the level of utilisation of background checks for fraud detection in medium scale business in Uyo, Akwa Ibom State?

Hypotheses

The following null hypotheses were tested at .05 level of significance.

1. There is no significant difference of data mining application on fraud detection in medium scale business in Uyo, Akwa Ibom State.
2. There is no significant difference of background checks on fraud detection in medium scale business in Uyo, Akwa Ibom State.

Research Method

Descriptive survey design was adopted for this study. The study was a survey of forensic auditing techniques for fraud detection in medium scale business in Uyo, Akwa Ibom State. The population for this study comprised all the accounting staff in all the 26 registered medium-scale business organisations in Uyo, Akwa Ibom State (Corporate Affairs Commission/SMEDAN, 2023). The choice of this population was as a result that they were more familiar with forensic auditing and fraud detection. Census sampling technique was adopted as the population was small to manage.

The researchers designed a 10 item questionnaire titled "Utilisation of Forensic Auditing Techniques for Fraud Detection Questionnaire (UFATFDQ)" and was used for data collection. A four-point rating scale of Highly Utilised (HU) = 4points, Moderately Utilised (MU) = 3points, Lowly Utilised (LU) = 2points and Not Utilised (NU) = 1point, was adopted. The instrument was face validated by an expert in the Department of Business Education, Faculty of Vocational Education, University of Uyo. Cronbach Alpha reliability



coefficient of .91 was obtained. The instrument was considered suitable and was used to gather data for this study. Seventy-six (76) copies of the questionnaire were administered and all were retrieved. Mean and standard deviation was used to answer the research questions while dependent t-test analysis was used to test the hypotheses at .05 level of significance.

Results

Research Question 1

What is the level of utilisation of data mining application for fraud detection in medium scale business in Uyo, Akwa Ibon State.

Table 1: Mean and Standard Deviation scores on Data Mining Application and Utilization of Forensic Auditing for Fraud Detection N = 76

S/N	Items	X	SD	Remark
1	Installation of software programmes (dashboard) in organisation's computers to monitor information in data	3.28	0.80	HU
2		3.42	0.49	HU
3	Mining of text documents from database	3.19	0.54	HU
4		3.44	0.32	HU
5	Use of artificial neural networks when reviewing data			
	Classification of data based on similarity in a historical data set	3.16	0.53	HU
	Scanning of transaction list for the purpose of identifying gaps			
	Cluster mean	3.62	0.51	HU

Source: questionnaire 2024, HU-Highly Utilised

The result presented in Table 1 above is sample data on mining application. From the above data all the items measured data mining application in medium scale businesses in Uyo, Akwa Ibom State and were based on the mean cut-off point of 2.50. The cluster mean score of 3.62 shows that there was high level of utilisation of data mining in fraud detection. The standard deviation range of 0.58 shows that the respondents were not divergent in their opinions. This implies that if medium scale businesses take into consideration all the listed items on table 1 it will enhance quick fraud detection perpetrated by employees.

Research Question 2

What is the level of utilisation of background check for fraud detection in medium scale business in Uyo, Akwa Ibom State.

Table 2: Mean and Standard Deviation scores on Background Checks and Utilization of Forensic Auditing for Fraud Detection N=76

S/N	Items	X	SD	Remark
1	Search of details of conflict among employees of the organization	3.45	0.61	HU
2	Inquiry into transactions that deviate from the business culture	3.01	0.72	HU
3		3.26	0.44	HU
4	Search of transactions with parties lacking capacity	3.39	0.62	HU
5	Investigation of transactions with employees' family relations	3.61	0.48	HU
Information from private records				
Cluster mean		3.46	0.57	HU

Source: questionnaire 2024, HU-Highly Utilised

The data presented in Table 2 shows that the mean of the items ranged from 3.01 - 3.61 indication high level of utilisation. It is also represented with a standard deviation of 0.44 - 0.61 indicating that the respondents were not divergent in their views. It is also noted that all the mean scores were above the cut-off point of 2.50 showing that all the items were perceived as factors to background checks for medium scale businesses. The cluster mean score of 3.46 shows that there was a high level utilisation of background checks in medium scale business in Uyo. This implies that if background check approaches are put in place by owners and managers of medium scale business it will act as a check to curtail the level of fraud and will provide means for easy detection of fraudulent practices by accounting employees.

Research Hypothesis 1

There is no significance difference between data mining application and fraud detection in medium scale business in Uyo. Akwa Ibom State.

Summary of t-test analysis on Data Mining Application and Utilization of Forensic Auditing for Fraud Detection N = 76

Respondents	N	X	SD	Df	t-cal	P-value	Decision
Data mining Application	76	3.62	0.51	74	-4.31	.000*	Accepted
Fraud Detection	76	3.42					

Source: questionnaire 2024, .05 level of significance

Table 3 shows that the calculated t-cal -4.31 and p-value of .000 is less than .05 level of significance. This means that there is high utilisation level of data mining application for fraud detection in medium scale business in Uyo, Akwa Ibom State therefore, the null hypothesis was rejected and the alternate is upheld.

Research Hypothesis 2

There is no significance difference between background check and fraud detection in medium scale business in Uyo, Akwa Ibom State.

Summary of t-test analysis on Background Check and Utilization of Forensic Auditing for Fraud Detection N = 76

Respondents	N	X	SD	Df	t-cal	P-value	Decision
Background Check	76	3.46	0.57				Accepted
Fraud Detection	76	3.42		74	-2.11	.004	

Source: questionnaire 2024, 0.05 level of significance

Table 7 show a t-cal of -2.11 and degree of freedom and p-value of .004. The p-value is less than 0.05 level of significance. This means that there is high utilisation level of background check for fraud detection in medium scale business in Akwa Ibom State. Therefore, the null hypothesis was rejected. Hence the alternate hypothesis was upheld.

Discussion

Data Mining on Fraud Detection

The finding of this study revealed high level of utilisation of data mining application in the detection of fraud in medium scale business in Uyo, Akwa Ibom State. Also the corresponding hypothesis tested revealed the extent to which data mining utilisation influence fraud detection in medium scale business is significant. The findings is in line with that of Sirikul (2012) whose study revealed that database technology has advanced in stride in business organisation and database can be mined for the purpose of dictating frauds. As data mining is a set of computer-assisted techniques designed to automatically mine large volumes of integrated data for new, hidden, unexpected information or pattern. The author concluded that data mining is a knowledge discovery in database (KDD).

The study is also in line with Golden *et al* (2015) who noted that data mining includes scanning transaction list, identifying gap in cheque, identifying duplicate invoice numbers, payments or payroll transactions to the same payee, matching returns dates and credit memos to test for proper cut-off., comparing recent invoice prices with costs on the perpetual inventory record and in conclusion that data mining can assist in providing reasonable check of findings based on documents especially in situations in which document sets may be incomplete.



Background Checks on Fraud Detection

Findings of this study revealed high level of utilization of background checks on fraud detection in medium scale business in Uyo, Akwa Ibom State. Background checks according to Agbawe (2022) is a sound policy of an organisation may not be practiced, but is related-party transactions that bear a higher risk of including scammed transactions. Transaction between related parties is often difficult to audit because they are not always accounted for in a manner that communicates their substance and effect with transparency. The findings of this study collaborate with Adeniyi (2022) who noted that parties are said to be related if one part has the ability to control the other part or exercise significant influence over the other party in making financial and operational decisions.

Sytel (2016) opined that the organisation may inquire about an individual outside business interests and then tries to determine whether the transactions are properly disclosed with the volume of transaction. If certain entries are under investigation the auditor may consider requesting a public records check of the entity to see whether there are indicators of undisclosed information to a particular individual. Jonny, et al (2018) added that a forensic auditor may also focus on the relationship and identity of the other party to the transaction and on whether the transaction emphasizes form over substance.

Conclusion

Conclusions were drawn based on the findings of this study; Utilisation of Forensic Auditing Techniques for Fraud Detection in Medium Scale Business in Uyo, Akwa Ibom State. This study concluded that data mining application and background checks in medium scale business in Uyo all have high utilisation level for fraud detection. Therefore, if proper utilisation level of forensic auditing techniques for fraud detection is applied in medium scale business in Uyo, it will enhance early detection of fraud perpetrated by employees or fraud that has already been committed. Also, medium scale business in Uyo should employ the services of auditors for proper records/financial checks.

Recommendation

Based on findings and conclusion of this study, the following recommendations were made:

1. Owners of medium scale business and managers should adopt data mining application to ensure that records are properly kept and handled by authorised employee to avoid fraudulent practices and to ensure sustainability of the business.
2. Medium scale owners and managers should adopt a strategic approach unknown to employees to enhance proper background checks, which will monitor all employees' activities for prompt action by the management. This will put every worker on check and task accomplishment.
3. Medium scale owners/management should encourage good relationship with staff; this will enhance friendly interaction and in the process carry out checks unknown to the employee. This approach will encourage some employees to give hidden information unknown to management.



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