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UTILIZATION OF DATA MINING AND ANONYMOUS COMMUNICATION TECHNIQUES FOR FRAUD DETECTION IN LARGE SCALE BUSINESS ORGANISATIONS IN DELTA STATE

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ABSTRACT: *This study on utilisation of data mining and anonymous communication techniques for fraud detection in large scale business organisations in Delta State was necessitated by the growing incidence frauds that are crippling businesses and socio-economic development of the state. Two research questions guided the study and two null hypotheses were tested at 0.05 level of significance. Related literature to the study were reviewed. Descriptive survey research design was adopted for the study. The population of the study was 260 accounting staff. A sample size of 160 was selected for the study using simple random sampling technique. A four-point rating scale questionnaire developed by the researchers was used for data collection. Cronbach Alpha method was used to determine the reliability of the questionnaire and this yielded reliability coefficient values of 0.85 and 0.80 respectively for the sections with an overall reliability of 0.83. Data were analyzed using mean and standard deviation to ascertain the homogeneity of the respondent while t-test and analysis of variance were used to test the hypotheses at 0.05 level of significance. The results showed that the accounting staff lowly utilised data mining and anonymous techniques for fraud detection. Furthermore, it was found that types and status of organization in NSE significantly influenced respondents' ratings on the utilization of data mining but did not influence their ratings on utilization of anonymous communications for fraud detection. From the findings of the study, it was concluded that the accounting staff did not utilize forensic auditing investigation techniques for fraud detection in large-scale business organisations as required. Based on the findings, the researcher recommended among others, shareholders and directors of large-scale business organisations should provide regular training on data mining techniques to equip their accounting staff with the relevant and up-to-date skills, abilities, attitude and competences for fraud detection.*

KEYWORDS*:* *Data mining, anonymous communication and large-scale business organisation*

INTRODUCTION

The activities involved in the production of goods and rendering of services constitute business. A business is any organised set of legal activities carried out by an individual or an organisation for the purpose of producing goods or rendering services in exchange for other goods, services or money, for the mutual benefit of the individuals or organisations concerned. The primary objective of a business organisation is to make profit. Other objectives of a business organisation include shareholders' satisfaction, employees' satisfaction, growth, innovation,

productivity, good public image, customers' satisfaction among others. A business organisation may be micro, small, medium or large-scale.

Accounting Technicians Scheme of West Africa (ATSWA) (2009), a large-scale business organisation is an enterprise with fixed assets exceeding ten million naira (₦10,000,000.00). ATSWA added that in terms of size of employment, a large-scale business organisation is an enterprise with employees of more than three hundred (300). A large-scale business organisation was defined by the Australian Bureau of Statistics (ABS) (2008) as any organisation that has over 200 employees. Such an organisation must have substantial value of asset, revenue and large market share. As regard the definition of what constitutes a large-scale business organisation, ATSWA (2009) emphasised that time, country and general economic condition are key factors to be considered. Corroborating this fact, Okandu, Azubuike, Onuoha, Chukwu and Emelike (2013) affirmed that what constitute a large-scale business organisation in Nigeria may not be in the United States of America. More so, with the advancement in technology, most work processes in large entities have been automated and simplified such that the number of employees required to complete a specific job keep on declining. Even robots and some special computers are now carrying out the jobs that were originally done by people. Hence net worth of an entity's assets could also be used as a yardstick for identifying large business organisations.

Large-scale business organisations contribute immensely to the economy development of a nation. According to Eshiotse (2012), large companies help in the utilisation of local raw materials in their production processes. Some of these local raw materials include; maize, yam, cassava, palm oil, plantain, palm kernel and so on. Eshiotse added that they provide employment for Nigerians. Many people earn their living from working for large-scale business organisations as employees. In a related manner, Jimah (2010) averred that big companies provide revenue to the government through payment of taxes such as company income tax. Such taxes are used for the provision of social amenities like good road network, stable electricity supply, pipe-born water, low-cost housing unit and the likes for the benefit of the general public. However, observation by the researchers seem that fraudulent activities have marred the success many large scale business organisations in Delta State in recent times.

Fraud is a menace whose potential impact is devastating to any business, social and economic well-being of a nation. Fraud encompasses a wide range of irregularities and illegal acts characterized by intentional deception or misrepresentation. The Institute of Internal Auditors (2014) defined fraud as any illegal act characterized by deceit, concealment or violation of trust. Fraud is perpetuated by parties and organisations to obtain money, property or service; to avoid payment or loss of services; or to secure personal or business advantage. According to the American Institute of Certified Public Accountants (2016), fraud is any intentional act or omission designed to deceive others, resulting in the victim suffering a loss and the perpetuator achieving a gain.

There are various cases of fraud in Delta State. For example, $182 million Halliburton energy service bribery scandal of 1994, Delta Steel company valued for $1.5billion which was sold for $30million (Ajibola, 2018). According to Esene (2010), many companies in Delta State have gone into liquidation due to mismanagement, inventory theft, and fraudulent reporting. The author listed Bendel Glass Factory, Delta Shrimp, Sparkling Breweries Ltd, Asaba Textile

Mill, Super Ibru Breweries, Warri Bolting Company, Delta Boat Yard, among others as business entities that wound up due fraudulent activities.Today, organised financial frauds have surfaced and are occurring too frequently in Nigeria generally and Delta State in specific. Financial fraud includes cash theft, fraudulent disbursement, inclusion payroll schemes, cheque tempering, cash theft, inventory theft, income smoothing, fraudulent reporting, cash skimming, kickbacks, swindles among others. The Nigerian Deposit Insurance Corporation report on fraud in Nigeria is provided below.

Year	Total No of Fraud Cases	Total Amount Involved (₦'Bn)	Proportion of Expected Loss to Amount Involved (%)	No of Staff involved
2002	796	12,919.55	10.06	85
2003	850	9,383.67	9.14	106
2004	1,175	11.754.00	22.21	383
2005	1,229	10,606.18	52.82	378
2006	1,193	4,832.17	57.3	331
2007	1,553	10,005.81	28.69	273
2008	2,007	53,522.86	32.78	313
2009	1,764	41,265.50	18.29	656
2010	1,532	21,291.41	54.85	357
2011	2,352	28,400.86	14.33	498
2012	3,380	17,965.50	25.14	531
2013	3,756	21,291.41	26.41	682
2014	10,612	25.61	6.196	465
2015	12,279	18.02	3.17	425
2016	16,751	8. 68	0.760	231
2017	26,182	12.016	0.682	320
Total	**87,411**	**244.06**	**72.17**	**6034**

Fraudsters have continued to wax stronger in the state as they deploy information and communication technology and other devices. Owing to the incessant cases of frauds in Delta State, many LSBOs have resorted to continuous downsizing of workforce for lack of sufficient profit to meet up with important financial obligations such as payment of salaries, corporate taxes, audit fees and dividend and complete winding up. Due to this situation, the state has lost its attraction to investors, standard of living is nose-diving, unemployment and its related social vices are on rise which portend no mean danger to the State. It is in the light of this problem that study was conducted to determine the level of utilization of data mining and anonymous communication techniques for fraud detection in large scale business organisations in Delta State.

Purpose of the Study

The main purpose of the study was to determine the utilization of data mining and anonymous techniques for fraud detection in large scale business organisations in Delta state. Specifically, the study determined the extent of utilisation of:

1. data mining for fraud detection in large-scale business organisations in Delta State;
2. anonymous communication for fraud detection in large-scale business organisations in Delta State;

Research Questions

The following research questions guided the study:

1. What is the extent of utilisation of data mining for fraud detection in large-scale business organisations in Delta State?
2. What is the extent of utilisation of anonymous communication for fraud

Hypotheses

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

1. There is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the extent of utilisation of data mining for fraud detection.
2. Respondents do not differ significantly in their mean ratings on utilisation of data mining for fraud detection based on the status of organisation in the Nigerian Stock Exchange.
3. There is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the extent of utilisation of anonymous communication for fraud detection.
4. Respondents do not differ significantly in their mean ratings on utilisation of anonymous communication for fraud detection based on the status of organisation in the Nigerian Stock Exchange.

LITERATURE REVIEW

Economic and Financial Crimes Commission in Ehioghiren and Atu (2016) defined fraud as the non-violent criminal and illicit activity committed with the objective of earning wealth illegally either individually, in a group or an organized manner thereby violating existing legislation governing the economic activities of a country. Similarly, Idolor (2010) viewed fraud as an intentional misrepresentation of existing material facts, made by one person to another, with the intention of inducing the other person to act and upon which the other person relates with resulting injuries or damages. Udoayang and James, in 2014, concluded that fraud is simply stealing by tricks. It could be any action taken by management at any extent with the intention to deceive, con, swindle or cheat investors or other stakeholders.

It is vital for a large-scale business organisation to establish an effective fraud detection measure because it will help in reducing the opportunities of fraud occurrence. Detecting fraud is difficult, especially, frauds involving material misstatement, which occur only in about 2 percent of all financial statement frauds. Fraud is generally concealed and often occur through collusion. Normally, the documents supporting omitted transactions are not kept in the company's files. Data mining can be deployed for the purpose of fraud detection.

According to the 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. It is the hidden information in the data that is useful. Data mining refers to the non-trivial extraction of implicit previously unknown and potentially useful information in databases (Adegbie, & Fakile, 2012). It is a key step of knowledge discovery in databases. In other words, data mining involves the systematic analysis of large data sets using automated methods. By probing data in this manner, it is possible to prove or disprove an existing

hypothesis or idea regarding data or information while discovering new or previously unknown information. It is noted for its pattern recognition and ability to ensure that information is obtained from vague data (Barker, 2009).

Patterns that can be identified in data mining include numeric, time, name and geographic patterns. These patterns can be gotten from: corporate and personal emails, minutes of board meetings, company document collections, employees' reviews and performance appraisal, corporate telephone records, public information records and personnel files, interactive activities and computer hard drives (Manning, 2012).

Large-scale organisations that wish to use data mining tools can purchase mining programmes designed for existing software and hardware platforms, which can be integrated into new products and systems as they are brought online, or they can build their own customised mining solution. For instance, feeding the output of a data mining exercise into another computer system, such as a neural network, is quite common and can give the mined data more value. This is because the data mining tool gathers the data, while the second programme (neural network) makes decisions based on the data collected.

Different types of data mining tools are available in the marketplace, each of which has its own strengths and weaknesses. 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 even 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.

Auditors can use spreadsheets to undertake simple data mining exercises or to produce summary tables. Some of the desktop, notebook, and server computers that run operating systems such as Windows, Linux, and Macintosh can be imported directly into Microsoft Excel (Olasanmi, 2013). Using pivotal tables in the spreadsheet, auditors can review complex data in a simplified format and drill down where necessary to find the underlining assumptions or information. When evaluating data mining strategies, companies may decide to acquire several tools for specific purposes, rather than purchasing one tool that meets all needs. Although acquiring several tools is not a mainstream approach, a company may choose to do so if, for example, it installs a dashboard to keep managers informed on business matters, a full data-mining suite to capture and build data for its marketing and sales arms, and an interrogation tool so auditors can identify fraud activity. Apart from data mining, anonymous communication could also be used for fraud detection in business organisation.

Okoye and Gbegi (2013) examined forensic accounting as a tool for fraud detection and prevention in the public sector organisations in Kogi State. It was found, among others, that the use of data mining significantly reduces the occurrence of fraud cases in the public sector. Also, Akenbor and Oghoghomeh (2013) carried out a study on forensic auditing and financial crime in Nigerian banks: A proactive approach. The study's findings showed that there is significant relationship between proactive forensic auditing and managers' financial crime in Nigerian banks. Blessing (2015) empirically analysed the use of forensic accounting techniques in curbing creative accounting. The findings of the study showed that techniques used by forensic accountants have highly helped in curbing creative accounting.

Anonymous tips are by no means new phenomena in the world of business. In Nigeria, however, recent cases of fraud both in public and private sectors have popularized and created awareness on the importance of anonymous communication mechanism. Scott and Rains (2015) supported that anonymous communication is not a new issue because suggestion boxes, whistle blowing and certain types of feedback involving anonymity today, with the variability of new communication technologies availability in business organisations, has aided anonymous communication. Henderson and Greaves (2015) stated that the awareness of anonymous tips, coupled with the dismay of some employees and members of the public that there has been a violation of public trust by some large businesses, which has led to an increase in the number of anonymous tips received by organisations. Anonymous communication, as used in this work, denotes the sending of information, tips and ideas that could aid the prosecution of fraudsters without revelation of identity.

Anonymous tips come in a wide variety of forms and quite a number of channels and are addressed to various individuals and groups within or outside the entity. Henderson and Greaves (2015) stated that recipients of anonymous communications within a business organisation include legal counsel, audit committee members, senior management, departmental supervisors and the compliance or ethics officer. The authors further added that a tip may take the form of a typical business letter addressed to the company, an e-mail usually from a non-traceable account or an official internal complaint. Agbawe, in 2012, maintained that tips may also be duplicated from news agencies, competitors, internet website postings, chat rooms or government agencies. Or they may also be messages to an internal ethics hotlines number.

Lee and Fargher (2013) conducted a study on companies' use of whistle-blowing to detect fraud: an examination of corporate whistle-blowing policies. The result of the study showed that the use of hotline and email were identified as effective ways of detecting fraud in S&P. More so, Akenbor and Ironkwe (2014) conducted a study on the relationship between forensic auditing and fraudulent practices in Nigerian public institutions. The findings of the study showed that whistle blowing has a negative significant relationship with fraudulent practices in Nigerian public institutions. Taiwo (2015) conducted a study on the effects of whistle blowing practices on organisational performance in the Nigeria public sector; with empirical facts from selected local governments in Lagos and Ogun States. The result of the study revealed that there is a significant relationship between whistle blowing practices, protection of whistleblowers, disclosure of unethical practices and the performance in public sectors. It was also found that respondents disagreed on the fact that employees feel confident to report unethical practices within organisation to external bodies.

RESEARCH METHOD

The descriptive survey design was adopted for this study. The study was conducted in Delta State. The population for the study comprise all the 268 accounting staff (manufacturing organisations – 108, trading organisations – 75 and service organisations – 85) in all the 30 large-scale business organisations in Delta State (Corporate Affairs Commission/Managers of Large-Scale business organisations, 2018). The sample size of 160 (manufacturing organisations – 62, trading – 50, service – 48) was used for the study. This sample size was derived statistically using Taro Yamane formulae. A structured questionnaire titled "Utilisation

of Data Mining and Anonymous Communication Techniques for Fraud Detection Questionnaire (UDMACTFDQ)" was used for data collection for the study. The instrument was developed by the researchers based on the research questions that guided the study. It contains 21 items in two sections: Sections A and B. Section A contains three items on the personal data of the respondents while section B was split into two clusters of B1 and B2. Section B is a four-point response scale of Highly Utilised (HU) – 4 points, Moderately Utilised (MU) – 3 points, Lowly Utilised (LU) – 2 points and Not Utilised (NU) – 1 point. The instrument was subjected to face-validity by three validators; one from Nnamdi Azikiwe University, Awka. The internal consistency of the instrument was determined using Cronbach's Alpha technique and a reliability coefficient of 0.85 was obtained. The questionnaire was administered on the respondents by the researchers. Mean and standard deviation were used to answer the research questions and ascertain the closeness of the respondents' means. Decision on the research questions were based on the cluster mean relative to the real limits of numbers as follows**:** Highly Utilised (HU) – 3.50 – 4.00, Moderately Utilised (MU) – 2.50 – 3.49, Lowly Utilised (LU) – 1.50 – 2.49 and Not Utilised (NU) – 0.50 – 1.49. Analysis of Variance (ANOVA) and independent t-test were used to test the null hypotheses at 0.05 level of significance. A null hypothesis was rejected where the p-value was less than or equal to the alpha level of 0.05 otherwise it was not rejected.

RESULTS

Table 1
Respondents' Mean Ratings on the Extent of Utilisation of Data Mining for Fraud Detection in Large-Scale Business Organisations in Delta State.
N= 156

S/N	Data Mining Techniques	Mean	SD	Remarks
1	Installation of dashboard in organisation's computers to monitor information in database	2.58	1.00	MU
2	Comparing data patterns from various periods.	2.38	1.01	LU
3	Mining of text documents from database.	2.63	.60	MU
4	Use of artificial neural networks when reviewing data	2.63	1.11	MU
5	Classification of data base on similarity in a historical data set.	2.26	1.09	LU
6	Use of decision trees to facilitate decision in effective decision making.	2.13	1.16	LU
7	Scanning of transaction list for the purpose of identifying gaps	2.32	.91	LU
8	Comparison of recent invoice prices with the cost on the perpetual inventory records.	2.33	1.10	LU
9	Matching of returns dates memos to test for proper cut-off.	2.19	.96	LU
10	Checking for complete processing of transactions.	2.75	.67	MU
	Cluster Mean	**2.42**		**LU**

Table 1 shows that four of the items with mean ratings ranging between 2.58 and 2.75 are moderately utilised while six items with mean ratings ranging between 2.13 and 2.38 are lowly utilised. The cluster mean score of 2.42 shows that data mining is lowly utilised for fraud detection in large-scale business organisations in Delta State. The standard deviation range is low showing that the respondents were homogeneous in their views.

Table 2
Respondents' Mean Ratings on the Extent of Utilisation Of Anonymous Communication for Fraud Detection in Large-Scale Business Organisations in Delta State.
N= 156

S/N	Anonymous Communication techniques	Mean	SD	Remarks
1	Comments from suggestion box	2.92	.66	MU
2	Anonymous Phone calls	1.29	.46	NU
3	Anonymous Letters	1.37	.48	NU
4	Emails messages	1.76	.67	LU
5	Posts on bulletin boards	2.79	1.08	MU
6	Written confirmation from debtors	1.62	.49	LU
7	Written confirmation from creditors	1.51	.50	LU
8	Fax messages	2.02	.70	LU
	Custer Mean	**1.91**		**LU**

Table 2 shows that two items have mean ratings of 2.79 and 2.92 meaning that they are moderately utilised while the remaining six items have mean scores ranging from 1.29 – 2.02 showing that they are lowly utilised. The cluster mean score of 1.91 shows that anonymous communication is lowly utilised for fraud detection in large-scale business organisations in Delta State.
The standard deviation range for all the items is low and indicates that the respondents' views were not widespread.

Table 3
ANOVA Summary of the Difference in the Mean Ratings of Respondents from Manufacturing, Trading or Service Large-Scale Business Organisations on the Extent Of Utilisation of Data Mining for Fraud Detection.

Sources of Variations	Sum of Squares	df	Mean Square	F	P-value	Decision
Between Groups	26.224	2	13.112	167.180	.000	S
Within Groups	12.000	153	.078			
Total	**38.224**	**155**				

*scheffe's test of Sig. = Mgf - -.40000, Ser. – 1.000 & Tra. - .40000

Table 3 shows that the P-value of .000 is less than the α-extent of .05 with the degrees of freedom of 2 and 153 respectively. This means that there is a significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the extent of utilisation of data mining for fraud detection. The null hypothesis

was, therefore, rejected. The scheffe's test shows that ratings of respondents from service organisations were responsible for the observed difference

Table 4
T-test Analysis of the Difference in the Mean Ratings of Respondents on the Extent Of Utilisation of Data Mining for Fraud Detection Based on The Status of Organisation in the Nigerian Stock Exchange

Status in NSE	N	$\bar{X}$	SD	df	t-cal	P-value	Decision
Quoted X_1	21	16.90	1.26				
				154	-19.82	.000	S
Unquoted X_2	135	29.71	5.17				

Table 4 shows that the P-value of .000 at 154 degree of freedom is less than the alpha extent of .05. This means that respondents differed significantly in their mean ratings on utilisation of data mining for fraud detection based on the status of their organisations in the Nigerian Stock Exchange (quoted/unquoted). The null hypothesis was, therefore, rejected.

Table 5
ANOVA Summary of the Difference in the Mean Ratings of Respondents from Manufacturing, Trading or Service Large-Scale Business Organisations on the Extent of Utilisation of Anonymous Communication for Fraud Detection.

Sources of Variations	Sum of Squares	df	Mean Square	F	P-value	Decision
Between Groups	11.690	2	5.845			
				1.313	.229	NS
Within Groups	168.330	153	1.100			
Total	**180.019**	**155**				

Table 5 shows that the P-value of .229 is greater than the alpha extent of .05 with the degrees of freedom of 2 and 153 respectively. This means that there is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations on the extent of utilisation of anonymous communication for fraud detection. The null hypothesis was, therefore not rejected.

Table 6
T-test Analysis of the Difference in the Mean Ratings of Respondents on the Extent of Utilisation of Anonymous Communication for Fraud Detection Based on the Status of Their Organisations in the Nigerian Stock Exchange

Status in NSE	N	$\bar{X}$	SD	df	t-cal	P-value	Decision
Quoted X_1	21	1.7313	.71				
				154	-.407	.685	NS
Unquoted X_2	135	1.7753	.64				

Table 6 shows that at .05 extent of significance with 154 degree of freedom, the P 5-value of .685 which was higher than the alpha extent of .05 is obtained. This shows that respondents do not differ significantly in their mean ratings on utilisation of anonymous communication for

fraud detection based on the status of their organisations in the Nigerian Stock Exchange (quoted/unquoted). The null hypothesis was, therefore, not rejected.

DISCUSSION

The findings of the study shows that data mining is lowly utilised for fraud detection in large-scale business organisations in Delta State. This finding is in consonance with the finding of Okoye and Gbegi (2013) who found that Kogi State public sector organisations do not use the services of professional forensic accountants. However, Blessing (2015) reported that techniques used by forensic accountants have highly helped in curbing creative accounting in business organisations. In view of the above finding, the low extent of utilisation of data mining in large scale business organisations in Delta state could account for the high incidences of fraud perpetrated without the notice of management which may crumble their going concerns. Obviously, adequate utilisation of data mining techniques would enable a large-scale business organisation dive into data sets and visually find new trends, patterns and threats that could expose it to fraud risks. Data mining technique could help a forensic auditor to check the completeness and accuracy of business transactions with a view to discovering fraud.

The findings further showed that there is a significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations, quoted or unquoted on the extent of utilisation of data mining for fraud detection. However, Akenbor & Oghoghomeh (2013) found a significant relationship between proactive forensic auditing and managers' financial crime detection in Nigerian banks. This observed difference in the results could be due to various reasons. Unlike the unquoted large-scale business organisations, quoted company needs to comply with the requirements of the Nigerian Stock Exchange, Security and Exchange Commission, Companies and Allied Matters Act (CAMA) and other applicable laws and regulations, which could make them utilize data mining technique more than unquoted companies to ensure the security of shareholders' investments and maintain a good standing in the stock market.

More so, the service organisations that were responsible for the observed difference may have deployed more sophisticated computer programmes, devices, employ more qualified staff and provide requisite training for their staff on the use of data mining techniques for fraud detection in their organisations. Employment of qualified staff and regular training will help understand employees' individual traits, skills and abilities in order to assess their potentials and possibilities in engaging in fraudulent behaviours and this is in consonance with the tenets of the Fraud Diamond theory as postulated by Wolfe and Hermanson in 2004 which emphasized capacity as the major reason why people commit fraud.

The finding indicates that anonymous communication is lowly utilised for fraud detection in large-scale business organisations in Delta State. The finding of Taiwo (2015) who found that respondents disagreed on the fact that employees feel confident in reporting unethical practices within an organisation to external bodies supported the finding of this study. Also, Akenbor and Ironkwe (2014) found that whistle blowing has a negative relationship with fraudulent practices in Nigeria in public institutions. The difference in the finding could be due to difference in business environments. Even though, anonymous communication could be effective in unraveling fraudulent practices in a large-scale business organisation, its utilisation

could be marred by fear of victimization (including loss of job), cultural influence, ethnic sentiment, overriding of fraud detection system by management and lack of protection of the anonymous communicator. In spite of the availability of suggestion boxes and hotlines in many organisation, data obtained from boxes or calls through hotlines are hardly acted upon.

The findings from the study show that there is no significant difference in the mean ratings of respondents from manufacturing, trading or service large-scale business organisations (quoted or unquoted) on the utilisation of anonymous communication for fraud detection. Relatedly, Lee and Fargher (2013) found the use of hotline and email as effective ways of detecting fraud. Indubitably, the effective utilisation of comments from suggestion boxes, anonymous phone calls, email messages, post on bulletin boards and anonymous text messages could facilitate fraud detection in business organisations in no mean way. It is vital that management put a reward and punishment system in place where employees who acts or provide information that can lead to fraud detection will be rewarded and those who aid, abet or suppress fraud detection processes will be punished. This is in conformity with the tenets of the differential reinforcement theory by Akers and Robert in 1965.

CONCLUSION

From the findings of the study, it was concluded that accounting staff did not utilise data mining and anonymous communication for fraud detection in large-scale business organisations in Delta State as expected. As such, fraudulent activities like bribery, embezzlement, cash theft, inventory theft, cheque tempering, payroll scheme, swindle, forgery and kickbacks are causing incessant winding-up of large-scale business organisations in Delta State and these portend a no mean danger for socio-economic development of the state if not properly checked and nipped in the bud.

Recommendations

Based on the findings of the study, the following recommendations are therefore made:

1. Shareholders and directors of large-scale business organisations should provide regular training on data mining techniques to equip their accounting staff with the relevant and up-to-date skills, abilities, attitude and competences for fraud detection.
2. Employees of large-scale business organisations should endeavour to give timely information that could lead to fraud detection to ensure that the occurrence of fraud is minimized to the barest minimum.
3. Shareholders in large scale business organisations should insist that the techniques used in the study and other forensic auditing techniqnues are adequately utilized by holding and management accountable for fraud occurrences

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