



Information communication technology and forensic accounting in Nigeria

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Article History

Received 20 January, 2018
Received in revised form 15
February, 2018
Accepted 20 February, 2018

Keywords:

Information
communication
technology (ICT),
Forensic accounting,
Financial reporting.

Article Type:

Full Length Research Article

ABSTRACT

This study examined the impact of information communication technology (ICT) on forensic accounting practice. A survey was designed and carried out using a questionnaire and the data obtained were analyzed using Kolmogorov-Smirnov (K-S) test, percentage analysis and reliability statistics. However, the outcome of the analysis revealed that information technology (IT) based forensic accounting has significant agreement with the speed of detecting fraud with other financial crimes in the process of forensic investigation. It was concluded that IT based forensic accounting would minimize time spent while performing forensic investigation and also bring about accurate evidence as regards financial reporting and other suspected criminal case investigations. It was therefore recommended that firms, companies and most importantly the public sector should have a review of their plans and strategies to capture forensic accounting in a digitalized environment, taking into consideration forensic software as an aid to speedy investigation of fraudulent cases and other criminal offences in order to get more accurate evidence that would support any litigation.

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INTRODUCTION

Fraud is a worldwide phenomenon that affects all continents and all sectors of the economy, and most organisations may face fraud regardless of the size, industry or country. Forensic accounting therefore has become crucial in untangling the complicated accounting manoeuvres that have obfuscated financial statement (Bhasin, 2013). Forensic accounting as a profession evolved in retort to definite emerging fraud allied cases (Financial Crimes) (Modugu and Anyaduba, 2013).

The scandals that lately rocked the corporate world with typical examples being the frequently cited Enron and WorldCom cases have also brought the field of forensic accounting to the vanguard (Sarbanes-Oxley Act, 2002). In effect, the events raised the consciousness of regulators and policy makers to the negligence of extant corporate governance practices across the board. This however has placed a greater emphasis on integrity

of the financial reporting system and global concern for uniformity in financial reporting framework which has resulted in the international harmonization of financial reporting standards, called the International Financial Reporting Standards (IFRS) (Herbert et al., 2017). The size and complexity of accounting services and the inability of the statutory auditors to engage in dispute resolution and litigation support further constrained by the related clauses in the company laws and standards, present very visible and poor show of the fight against financial crimes in corporate organizations (Izedonmi and Ibadin, 2012).

Corruption and financial crimes have been staunch in most cases by those who are in higher authority, entrusted with duty of taking care of funds. Ogbi (2013) observed that corruption has enveloped all sectors of the Nigerian society, ministries and agencies of government. While considerable literature was developed in the area of forensic auditing and skills acquisition for carrying out effective investigation supported with undeniable evidence, little has been written on the impact of

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information technology (IT) on forensic accounting practice in Nigeria. This study contributes to the existing body of knowledge by filling this gap. However, the identified problems that brought about this study are specifically stated below:

- Lack of comprehensive understanding of forensic accounting and its application using technological facilities to combat fraudulent practices
- Non-awareness of its importance as a branch of the accounting profession
- Absence of trained personnel to meet up with changes in technology as regards forensic accounting

However, in view of the aforementioned identified problems, this study is expected to provide hypothetical answer to the following question:

To what extent can forensic accounting software be used to enhance the speed of fraud detection?

In line with the above question, the specific objective of this study is to examine the extent to which the use of IT facilities can be used to enhance the speed of fraud detection.

Hypothesis: The use of forensic accounting software has no relationship with the speed of detecting fraudulent practices.

LITERATURE REVIEW

Forensic accounting is a new trend particularly in developing economies. Hence, professional accountants with adequate skill and technical know-how on forensic issues are hardly available (Ehioghiren and Atu, 2016). It is an integral part of the accounting profession which has the sole aim of unearthing fraudulent activities within and outside an organization so far as the third party's action is in any way reflective on the activities of that organization (Modugu and Anyaduba, 2013). Forensic accounting is the science that deals with the relation and application of financial accounting, tax and auditing knowledge to analyze, investigate, inquire, test and examine matters in civic law and criminal law (Lohana, 2013).

Augustine and Uagbale (2014) investigated on the growing relevance of forensic accounting as a tool for combating fraud and corruption with focus on Nigeria experience using descriptive statistics methodology and exploratory design their study revealed that forensic accounting in Nigeria is still in its infancy stage and most Nigerians seemed to assume that there is no difference between forensic accounting and auditing. Similarly, Omar et al. (2013) examined 'The relevance of IT application and forensic accounting' and they came out

with the fact that, the ICT has been practically an important instrument for halting corruption. It enhances true transparent responsibility and accountability of government administration. Okunbor and Osaretin (2010) reported that the spates of corporate failures have placed responsibility on accountants to develop themselves with the skills to identify and act upon indicators of frauds, mismanagement and other wrong doings.

METHODOLOGY

This research work was undertaken in Ondo State Auditor General's Office based on the criteria of convenience. This study area is located in Akure South Local Government and has various government parastatals which boast of a host of professionals such as accountants and auditors who are involved directly or indirectly in forensic accounting practice. The only aspect of forensic accounting practice in this parastatal at the time this research was carried out is the investigation of asset misappropriation, recovery and protection of asset by way of criminal prosecution using forensic accounting techniques such as; Cash T Method which usually utilized when an individual or company's books and records do not clearly show their income leading to a suspicion that omission of earnings for a particular period might have occurred. The study used survey design through questionnaire. The sample size selected for this study was 163 respondents consisting of the roles stated in the population of the study above. The sample size was calculated using an arithmetical formula with 5% level of significance adopted from Adefila (2008) and this is illustrated as follows:

$$n = \frac{N}{1+N(e)^2}$$

Where; n is the sample size; N, is the population size; and e is the level of significance.

For a population size of 205 at 5% level of significance, the sample size n is calculated as 163 from equation " $n = \frac{N}{1+N(e)^2}$ ". The statistical test used for testing the

hypothesis was the K-S test because it is a non-parametric test that encourages equality of continuous, one-dimensional probability distributions that can be used to compare a sample with reference probability distribution and also has the advantage of making no assumption about the distribution of data. Results for the study were analyzed using descriptive statistics of frequency counts, mean, standard deviation and inferential statistics of one sample K-S test. The K-S test shows the correlation between the p-value and the level of significance, that is, where the level of significance is

Table 1. Distribution of gender in the experimental samples.

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Female	41	31.3	31.5	31.5
	Male	89	67.9	68.5	100.0
	Total	130	99.2	100.0	
Missing	System	1	0.8		
Total		131	100.0		

Table 2. Distribution of age group in the experimental samples.

		Frequency	Percent	Valid percent	Cumulative percent
Valid	15-25 years	13	9.9	10.0	10.0
	26-40 years	39	29.8	30.0	40.0
	41 and above	78	59.5	60.0	100.0
	Total	130	99.2	100.0	
Missing	System	1	0.8		
Total		131	100.0		

Table 3. Distribution of marital status in the experimental samples.

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Single	18	13.7	13.8	13.8
	Married	108	82.4	83.1	96.9
	Divorced	2	1.5	1.5	98.5
	Separated	2	1.5	1.5	100.0
	Total	130	99.2	100.0	
Missing	System	1	.8		
Total		131	100.0		

greater than the P-value, we reject the null hypothesis while accepting the alternative hypothesis and vice-versa. The K-S test allows for an assertion which states that it is impossible to prove that the null hypothesis is true. Hypothesis testing is all about gathering evidence to suggest the null hypothesis is not true and the lack of such evidence warrants a "Do not reject" decision.

Data analysis and presentation

Out of 163 copies of questionnaire distributed, 130 copies were returned while 33 copies were not returned at all. The analysis of the response to each question on the questionnaire is provided under the following subheading.

Respondents' demographic data

The demographic data of the respondents is presented in

Tables 1-10. From Table 1, out of the 130 questionnaires collected, 31.3% (41) of the respondents in the study area are female while 67.9% (89) are male. This implies that male has the highest population in the study area. The missing system is the column mistakenly left vacant in the process of analyzing required data using SPSS.

From the Table 2, 9.9% (13) of the respondents in the population are between the age of 15-25 years, 29.8% (39) are between the age of 26-40 years while 59.5% (78) are between the age of 41 years and above. From the Table 3, 13.7% (18) of the respondents are single, 82.4% (108) are married, 1.5% (2) are divorced, 1.5% (2) are separated.

From the Table 4, 81.7% (107) of the respondents are Bachelor of Science degree holders, 12.2% (16) are Masters Degree holders, 0.8% (1) is a Doctorate degree holder and 4.6% (6) of the respondents possess other Educational qualifications.

From the Table 5, 17.6% (23) of the respondents in the

Table 4. Distribution of education qualification in the experimental samples.

		Frequency	Percent	Valid percent	Cumulative percent
Valid	B.Sc.	107	81.7	82.3	82.3
	M.Sc. or MBA	16	12.2	12.3	94.6
	Ph.D.	1	.8	.8	95.4
	Others	6	4.6	4.6	100.0
	Total	130	99.2	100.0	
Missing	System	1	.8		
Total		131	100.0		

Table 5. Distribution of professional qualification in the experimental samples.

		Frequency	Percent	Valid percent	Cumulative percent
Valid	0	23	17.6	17.7	17.7
	ACA	35	26.7	26.9	44.6
	ACCA	10	7.6	7.7	52.3
	CNA	62	47.3	47.7	100.0
	Total	130	99.2	100.0	
Missing	System	1	.8		
Total		131	100.0		

Table 6. Distribution of years of experience in the experimental samples.

		Frequency	Percent	Valid percent	Cumulative percent
Valid	1-10 years	30	22.9	23.1	23.1
	11-20 years	66	50.4	50.8	73.8
	21 years and above	33	25.2	25.4	99.2
	4	1	.8	.8	100.0
	Total	130	99.2	100.0	
Missing	System	1	.8		
Total		131	100.0		

Table 7. Forensic accounting service involvement.

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Undertake service of forensic accountants	44	33.6	33.8	33.8
	Consider myself a forensic accountant	32	24.4	24.6	58.5
	Have forensic accountants as superior/subordinate	28	21.4	21.5	80.0
	Have no involvement	26	19.8	20.0	100.0
	Total	130	99.2	100.0	
Missing	System	1	.8		
Total		131	100.0		

Table 8. Position in the organisation.

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Top management	17	13.0	13.1	13.1
	Middle management	95	72.5	73.1	86.2
	Lower management	18	13.7	13.8	100.0
	Total	130	99.2	100.0	
Missing	System	1	0.8		
Total		131	100.0		

Table 9. One-sample (K-S) test.

	IT causes accounting professionals to spend less time on probing and performing content tests and accuracy of mathematical calculations of office accounts rapidly	The uses of Forensic Accounting do not significantly reduce the occurrence of Fraud cases in the public sector	IT based forensic accounting speeds up the process of investigation in the public sector	CCTV is an effective way of providing an image for digital forensic investigation
N	130	130	130	130
Normal parameters ^a mean	3.99	3.08	3.79	4.05
Std. Deviation	1.138	1.403	0.994	1.044
Most extreme differences absolute	0.295	0.181	0.314	0.241
Positive	0.188	0.173	0.210	0.182
Negative	-0.295	-0.181	-0.314	-0.241
Kolmogorov-Smirnov Z	3.364	2.068	3.575	2.744
Asymp. Sig. (2-tailed)	0.000	0.023	0.010	0.000

a. Test distribution is Normal

Table 10. Speed of fraud detection.

Cronbach's alpha	Cronbach's alpha based on standardized items	N of Items
0.675	0.673	4

population are not professionally qualified, 26.7% (35) are Associate Chartered Accountant (ACA) qualified, 7.6% (10) are Association of Certified Chartered Accountant (ACCA) qualified and 47.3% (62) are Certified National Accountants (CNA). Table 6 describes the years of experience of the respondents broken down into different range, the year of experience of 22.9% (30) of the respondents range from 1-10 years, 50.4% (66) ranges from 11-20 years and 25.2% (33) range from 21 years and above.

Table 7 illustrates the involvement of forensic accounting services by respondents in the study area, 33.6% (44) of the respondents undertakes the service of forensic accountants, 24.4% (32) consider themselves

forensic accountants, and 21.4% (28) have forensic accountants as superior/subordinate and 19.8% (26) have no involvement.

From Table 8, 13.0% (17) of the respondent occupies the top management level, 72.5% (95) belongs to the middle management level and 13.7% (18) operates at the lower management level.

Hypothesis: The use of forensic accounting software has no relationship with the speed of detecting fraudulent practices.

The Table 9 presents the result of analyzed data using (K-S) test at 0.05 level of significance and result made

known a normal test distribution. The null hypothesis tested was rejected while the alternative accepted because the P-values (0.000, 0.023, 0.010 and 0.000) are less than 0.05. This further implies that the use of forensic accounting software enhances the speed of detecting fraudulent practices, that is, IT based forensic accounting causes professional accountant to spend less time on probing and performing content tests and accuracy of mathematical calculations of office accounts rapidly and speeds up the performance of investigation on suspected cases of fraud and also significantly reduces the occurrence of fraud which can be done at times using closed circuit television (CCTV), an effective way providing an image for digital forensic investigation. Empirical evidence from a study by Boritz et al. (2008) confirms that forensic accountants could detect significantly higher number of fraud than auditors at a high speed using forensic software.

Reliability test on the use of IT facilities as an aid to speedy fraud detection

To verify the reliability of the scales summed up to measure the speed of detecting fraud with the aid of IT based facilities, Cronbach's alpha was calculated. The alpha value computed was 0.675 which implies that the construct under test is internally consistent and reliable. This further implies the rejection of the null hypotheses while accepting the alternative which states that there is significant relationship between the use of IT facilities for forensic investigation and the speed of fraud detection.

DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATION

With reference to the above analysis, this study has the following discussion of findings, conclusion and recommendations.

Discussion of Findings

The outcome of this study revealed the use of forensic accounting software has the tendency of reducing time spent in the process of investigating suspected criminal cases. It was also found out in this study that the awareness level of forensic accounting in government parastatal is relatively low owing to the negligence of government to release funds for proper training on the use of forensic accounting software as regards the acquisition of knowledge and skills to aid forensic investigation acquired in a suspected fraudulent cases. This is however similar to the findings of Efiog (2012) who surveyed the level of awareness of forensic

accounting by accounting students in a number of Nigerian universities and outcome revealed a very low level of awareness among students. The findings in this study also reflect the opinion of Pearson and Singleton (2008) who pointed out that knowledge and application of technology is increasingly essential in effective forensic accounting, anti-fraud programs and fraud investigation.

Conclusion

Data collected in this study were subjected to (K-S) test. The analyses revealed that there is enough evidence to assert that IT based forensic accounting would significantly bring about speedy process of generating relevant information to serve as evidence support suspected fraudulent cases whereas there was no enough evidence to support the fact that there is a significant relationship between the accuracy of evidence gathered in the process of investigation using ICT facilities.

Recommendations

It has been discovered in this study that forensic accounting is more effective when it is computerized and done in a digitalized environment; it is therefore recommended that firms, companies and most importantly the public sector should have a review of their plans and strategies to capture forensic accounting in a digitalized environment and forensic accounting software as an aid to speedy investigation of fraudulent cases and other criminal offenses. However, in the course of doing this, there is the need for the following.

1. The government need to create the awareness of employees or staff on the comprehensive understanding of forensic accounting which is also known as investigative accounting so that it will be well known that its application is not the same as auditing. Government should also ensure that appropriate sanctions are applied when fraud is detected and make sure that proper forensic procedures are followed during investigation by trained experts like professional forensic accountants. In addition, the government also need to support work related training and induction particularly for employees involved in internal control system and the accounting sector.
2. In a country like Nigeria for instance where corruption has eaten deep into their fabrics and where the unethical aspects of creative accounting are rampant, the practice of forensic accounting (that is, investigative accounting done by forensic accounting consultants to solve problems in courts) needs to be

introduced and recognized. Besides this, it can also be recommended that some courses, related to this issue should be launched by public and private institutions to make the accounting students expert for detecting fraud and corruption using forensic accounting enabled IT facilities and qualified accountants should also broaden their knowledge by striving for certification in forensic accounting and become professional in the field.

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