

Auditors' Usage of Computer Assisted Audit Tools and Techniques: Empirical Evidence from Nigeria

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Abstract: This study examines use of computer assisted audit tool and techniques in audit practice in the Niger Delta of Nigeria. To achieve this objective, data was collected from primary and secondary sources. The secondary sources were from scholarly books and journals while the primary source involved a well structured questionnaire of three sections of thirty seven items with an average reliability of 0.838. The data collected from the questionnaire were analyzed using relevant descriptive statistics, diagnostics tests, Augmented Dickey-fuller and multiple regressions. The result revealed that performance expectancy, effort expectancy, facilitating conditions and social influence were positively associated at (0.05) to the usage of computer assisted audit tools and techniques by accounting firms. Hence, the study concludes that the adoption of computer assisted audit tools and techniques has become a beneficial choice for auditors in the 21st century complex business environment and an efficient tool to increase the productivity as well as the audit functions. Therefore, professional accountants need to expand their knowledge of information technology and computer accounting audit methodology; the syllabus of accounting programmes for professional and tertiary institutions should be reviewed to include courses in computer accounting information system audit; relevant professional accountancy bodies in Nigeria should also include courses in computer information system audit as part of their training programmes and professional accountants should be made to appreciate the relevance of computer in the 21st century business environment in the provision of relevant accounting services for the sole aim of satisfying their clients and also audit firms need to increase their organizational and technical support to encourage the use of CAATTs.

Keywords: Accounting services, CAATTs, Niger Delta, Nigeria, technology acceptance

INTRODUCTION

The information and communication technology is very important in modern business organizations for the purpose of achieving short and long term objectives. Ofurum and Ogbonna (2008), Appah and Emeh (2011) and Agbatogun *et al.* (2011) stated that technology has been a significant tool in almost all human activity. The impact of information technology in business has grown exponentially in recent years, changing the audit process and resulting in both opportunities and challenges for auditors (Mahzan and Veerankutty, 2011). The audit profession is rapidly advancing in response to changes in its environment. According to Solomon and Trotman (2003), it is argued that auditors are struggling to maintain their identity and purpose as the organizations they audit undergo changes. Therefore, advances in information technology

continuously render control procedures obsolete and the value of traditional audit becomes seriously questioned. Moon (2002) and Hazman and Manian (2004) information technology is an increasingly powerful tool for improving the quality of audit services for businesses and clients. As advances information changes occur more quickly, auditors must keep pace with emerging technological changes and their impact on their clients' computerized accounting systems (Mahzan and Veerankutty, 2011). One means of achieving and understanding clients computerized accounting system is the adoption of Computer Assisted Audit Tools and Techniques (CAATTs) in their day-to-day operations.

According to Singleton and Flesher (2003), Computer Assisted Audit Tools and Techniques (CAATTs) are computer tools and techniques that an auditor uses as part of their audit procedures to process

data of audit significance contained in an entity's information system. Also Gupta (2005) stated that CAATTs are techniques that use the computer as an audit tool. CAATTs comprise computer programs and data that an auditor may use to process information of audit significance contained in the entity's information systems. Grand (2001) stated auditor uses different types of CAATTs to include electronic working papers, fraud detection, information retrieval and analysis, network security, continuous monitoring, audit reporting, database of audit history, computer based training, electronic commerce and internet securities. Many organizations have opted to use sophisticated information technology processing activities (Ramamoorthi, 2004). This increase the need for CAATTs in such businesses to allow auditors to continue to be able to perform their review and monitoring tasks effectively, as well as to play key roles in the process of innovation in these businesses more generally. Wider use of CAATTs has been widely use as an important response to sophisticated information and accounting system used by business organizations (Debreceeny *et al.*, 2003a, b and c; Ramamoorthi, 2004).

Curtis and Payne (2008) and Janvrin *et al.* (2009) argues that the use of information in business organizations has grown exponentially in the past century, the extent to which auditors have adopted information in the form computer-assisted audit tools and techniques to meet this growth remains an important question. Braun and Davis (2003) stated that computer assisted audit tools and techniques are computer tools that extract and analyze data from computer applications. Zhao *et al.* (2004) and Curtis and Payne (2008) noted that CAATTs permit auditors to increase their productivity as well as that of the audit function; CAATTs reduces total audit hours expended; they enable auditors to test 100% of the population rather than a sample, thereby increasing the reliability of audit test and conclusions. However, despite the current emphasis on the adoption of CAATTs, research indicates that auditors do not frequently and systematically use CAATTs (Kalaba, 2002; Sheikh, 2005; Janvrin *et al.*, 2009). Auditor adoption of CAATTs in their professional engagement may be driven by both financial and other individualistic perceptions. Therefore, the objective of this study is to examine the adoption of Computer Assisted Audit Tools and Techniques (CAATTs) by public accounting firms in Nigeria. The findings of this study are important because the audit profession is rapidly advancing as a result of technological and environmental changes. Since researchers and practitioners argue that CAATTs will improve audit efficiency and effectiveness, the result of this study may assist researchers and practitioners to increase the usage of CAATTs in Nigeria (Bell *et al.*, 2002; Braun and Davis, 2003).

LITERATURE REVIEW

Theoretical background: Several accounting research has used information systems theoretical framework to predict adoption of accounting technology (Walsh and White, 2000; West and Davis, 2008). Therefore, theoretical background on the factors influencing computer assisted audit tools and techniques adoption by auditors is the model of technology adoption called Unified Theory of Acceptance and Use of Technology (UTAUT). This is a unified model of information technology acceptance by individuals developed by Venkatech *et al.* (2003) after reviewing, comparing and testing eight competing theories of Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Motivation Model (MM), Innovation Diffusion theory (IDF), Model of Personal Computer Utilization (MPCU), Social Cognitive Theory (SCT) and a model combining TAM and TPB. Venkatech *et al.* (2003) stated that there are four elements that are significant determinants of usage in one or more of the individual models. These elements are Performance Expectancy (PE), Effort Expectancy (EE), Social Expectancy (SE) and Social Conditions (SC).

Performance expectancy: The performance expectancy refers to the extent to which an individual believes that his or her use of information technology will enhance job performance. Research studies have shown that the use of technology tools could help to enhance efficiency and effectiveness of auditors' professional engagements, to perform other functions such as to test programme control, to gain better understanding of the client's information technology control, to facilitate risk assessment during planning processes (Paukowitz, 2000; Neuron, 2003; Venkatech *et al.*, 2003).

Effort expectancy: Effort expectancy element in the UTAUT's describes the perceived ease of use. Venkatech *et al.* (2003), stated effort expectancy suggest a positive effect of perceived ease of use on behavioral intention. UTAUT suggest that there is a higher likelihood that auditors would adopt CAATTs when they are easy to use and therefore do not have to undergo a difficult learning curve to make use of CAATTs. Bedard *et al.* (2002) noted that ease of use perception were very significant among group of highly experienced auditors.

Facilitating conditions and social influence: Facilitating conditions and social influence are the other two elements in the UTAUTs. The facilitating conditions that can affect the motivations to adopt CAATTs are the adequacy of information on what

Table 1: Summary of empirical studies

Author	Country	Period	Methodology	Major findings
Janvrin <i>et al.</i> (2008)	USA	2008	Data obtained with questionnaire from 181 auditors, factor analysis, descriptive statistics and multiple regression	Their results indicate that performance expectancy and facilitating conditions influence the likelihood that auditors will use CAATTs
Mahzan and Veerankutty (2011)	Malaysia	2010	Data obtained with questionnaire from 79 respondents analyzed using descriptive statistics and multiple regression	CAATTs have been used most frequently as a problem solving aid
Braun and Davis (2003)	USA	2002	Descriptive statistics and questionnaire	The results show that auditors seemed to perceive the potential benefits associated with CAATTs

Adopted from other authors

CAATTs can do, support from software providers and support from top level management in any given organizations. Social influence seeks to understand if any influence of image and normative belief towards intention to adopt CAATTs exists in the adoption structure.

Nature and scope of computer assisted audit tools and techniques: Computer Assisted Audit Tools and Techniques (CAATTs) are computer programs and data that the auditor uses as part of the audit procedures to process data of audit significance contained in a client Computer Information System (CIS). CAATTs can be portrayed as the tools and techniques used to examine directly the internal logic of an application as well as being used to draw indirectly inference about application logic (Hall, 2000).

Jaksic (2009) stated that the most important Computer Assisted Audit Tools and Techniques (CAATTs) are test data, integrated test facility, parallel simulation and on-line audit monitor. Test data technique is based on auditors' creation of input data that should be processed by client's application. Test data consists of correct and incorrect data. Integrated test facility is used primarily with large-scale online systems serving multiple locations within the organization. Parallel simulation technique is used by the auditor to examine actual data which is processed with clients' and auditors program while online audit monitor provides continuous audit through integration of audit program code into clients' transactional application.

CAATTs improve audit efficiency by allowing auditors to perform previous manual intensive tasks quickly and efficiently (Zhao *et al.*, 2004). CAATTs improve audit effectiveness by enabling auditors to select sample transactions meeting specific criteria; obtain additional information about control effectiveness and test one hundred percent populations (Braun and Davis, 2003; Saygili, 2010). CAATTs aids for audit functions on client acceptance and risk assessment (Dowling and Leech, 2007). Moorthy *et al.* (2011) stated that CAATTs can be used to increase audit coverage, improve the integration of audit skills,

strengthen independence of auditing from information system functions, foster greater credibility and increase cost effectiveness through the development of reusable computerized techniques.

Survey of empirical studies: There are several empirical studies on adoption of computer assisted audit tools and techniques (Table 1). Braun and Davis (2003) surveyed governmental auditors regarding their usage of Auditor Command Language (ACL), a commercially available CAATT. They found that while participants perceived the potential benefits associated with audit command language, they displayed a lower confidence in their technical abilities to use ACL. Debreceny *et al.* (2005) studied bank internal auditors and external auditors in Singapore. They found that auditors tend to use CAATTs for special investigations rather than as a foundation for their regular audit assignment.

Therefore, on the basis of the reviewed literature, the authors formulated the following research questions and hypotheses:

- To what extent do auditors' usage of computer assisted audit tools and techniques in performance expectations in Nigeria?
- To what extent do auditors' usage of computer assisted audit tools and techniques in effort expectancy in Nigeria?
- To what extent do auditors' usage of computer assisted audit tools and techniques in facilitating conditions in Nigeria?
- To what extent do auditors' usage of computer assisted audit tools and techniques in social influence in Nigeria?

Hypotheses:

Ho1: There is no significant relationship between usage of computer assisted audit tools and techniques and performance expectations in Nigeria.

Ho2: There is no significant relationship between usage of computer assisted audit tools and techniques and effort expectancy in Nigeria.

Ho3: There is no significant relationship between usage of computer assisted audit tools and techniques and facilitating conditions in Nigeria.

Ho4: There is no significant relationship between usage of computer assisted audit tools and techniques and social influence in Nigeria.

MATERIALS AND METHODS

Population and sample: The target population of this study was all audit firms in Nigeria. However, the accessible population was all accounting firms in the Niger Delta Region of Nigeria from August 2011 to May 2012. Simple random sampling technique was used to arrive at the sample of the study. The sample size of 500 for the study was derived from the application of Yaro Yamen model.

Instrumentation: The instrument used for data collection was developed to examine the adoption of CAATTs by auditors in public accounting firms in the Niger Delta Region of Nigeria. This study used instruments developed by Mahzan and Lymer (2008), Venkatech *et al.* (2003) and Janvrin *et al.* (2008). The first part of the questionnaire contains questions on organizations' and respondents' characteristics. The second part of questionnaire examined the CAATTs Usage using 5 point scale of 1-strongly disagree, 2-disagree, 3-neutral, 4-agree and 5-strongly agree for each objective. The third part of the questionnaire examined the UTAUTs elements using the same 5 point scale rated from strongly disagree to strongly agree.

Reliability and validity: The reliability has two aspects, that is, stability (ability to produce consistent results over time despite uncontrollable testing conditions or state of the respondents) and consistency (homogeneity of the items in the instrument tapping the construct) (Ndiyo, 2005; Baridam, 2008). According to Osuala (2005), a reliable measure is one that is consistent. And because it gives a stable measure of a variable, a reliable measure is precise. The test-retest was done for estimating external reliability by using 25 auditors. The test-retest coefficients of the instruments measuring total CAATT usage, performance expectancy, effort expectancy, social influence and facilitating conditions were 0.83, 0.82, 0.75, 0.88 and 0.91, respectively suggesting that each instrument possesses a high degree of test-retest reliability. This suggested that there was a strong consistency of responses between the auditors.

Data collection procedure: A study of this type presents a number of data collection challenges. It requires as broad a sample as possible and at the same

Table 2: Names of accounting firms

Port Harcourt	
1	Akintola Williams Deloitte & Touche
2	Allwell-Brown & Co.
3	Ayo Akinyelure & Co.
4	Amadi Johnson & Co.
5	Aruna Bawa & Co.
6	Bari Bari
7	Babatunde Ibitoye & Co.
8	Ben Omomia & Co.
9	Innocent Anyahuru & Co.
10	Ofo Odo & Co.
11	PricewaterHouse Coopers
12	Ezenwa Okoro & Co.
13	Ernest & Young Osindero Oni
14	Eyewumi, Rone & Co.
15	Ezekiel Udoh & Co.
16	Dele Dina & Co.
17	David Oleneme & Co.
18	G.A. Arueyingho & Co.
19	Maaji & Co.
20	Nnamdi Okwuadigbo & Co.
21	Sak Ladipo & Co.
22	Seyi John Agbeye & Co.
	Yenagoa
1	Freeman Isowo & Co.
2	Ofo Odo & Co.
	Warri
1	Anjous, Uku, Eweka & Co.
2	Ayanbakpore Erhurhu & Co.
3	Ebinum Onah & Co.
4	Emeka Chibundu & Co.
5	Onothome Ofo Thirlwell & Co.
6	Osunbade, Okiti & Co.
7	Peter Edojariogba & Co.
8	Ugolo, Eyefia & Co.
	Benin city
1	Abdulkerim Kadiri & Co.
2	Aneni Dairo & Co.
3	Anjous, Uku, Eweka & Co.
4	Ayela-Uwangué & Co.
5	BDO, Balogun Badejo & Co.
6	Ehemua & Co.
7	Eyewumi & Co.
8	Giwa-Osagie DFK & Co.
9	Maaji & Co.
10	Pius Mmomodu & Co.
11	Precious Irobus Osayagbon & Co.
12	Spiropolos Adiele Okpara & Co.
13	S.S. Afemikhe & Co.
14	Thompson Idumwonyi & Co.
15	Ugbo Oredeinde & Co.
	Calabar
1	Akpan Udo Ebi & Co.
2	Babington-Ashaye & Co.
3	Dan Oku & Co.
4	Eyewumi Rone & Co.
5	I.E. Uboh & Co.
6	James Odocha & Co.
7	Akintola Williams Deloitte & Touche
8	Robert Obot & Co.
	Uyo
1	B.O. Edet & Co.
2	Ezekiel Udoh & Co.
3	Joseph Inyang & Co.

ICAN year book 2007

time requires that each data point provide comprehensive information on adoption of computer

assisted audit tools and techniques by auditors in Nigeria. Thus, the sample was drawn from the number of auditors practicing in public accounting firms (Table 2) in Uyo, Yenagoa, Warri, Calabar, Benin and Port Harcourt Cities of the Niger Delta of Nigeria. A total of two hundred and two (202) questionnaires were received with a response rate of forty percent (40%).

Data analysis: The study used quantitative techniques for the analysis of data. Econometric view (e-view) was employed for data analysis. Descriptive statistics, augmented dickey fuller test and ordinary least square were used. The ordinary least square was guided by the following linear model:

$$TCU = \beta_0 + \beta_1PE + \beta_2EE + \beta_3FC + \beta_4SI + \varepsilon$$

where,

- TCU = Total CAATT Usage
- PE = Performance expectancy
- EE = Effort expectancy
- FC = Facilitating conditions
- SI = Social influence
- β_0 - β_4 = Coefficients
- ε = Error term

However, the model was tested using the diagnostic tests of heteroskedasticity, serial correlation, normality and misspecification (Gujarati and Porter, 2009; Asterious and Hall, 2007). Augmented Dickey-Fuller was also used in the study for stationarity of data.

RESULTS AND DISCUSSION

This section of the study presents the results and discussions from the two hundred and two questionnaires received from the respondents.

Research question 1: To what extent do auditors' usage of computer assisted audit tools and techniques in performance expectations in Nigeria?

Table 3 above shows the application of computer assisted audit tools and techniques on the performance expectations of auditors. Seventy respondents representing (35%) strongly agree that computer assisted audit tools and techniques affects the performance of auditors; 53 respondents representing (26%) agree that computer assisted audit tools and techniques affects the performance of auditors; 31 respondents representing (15%) were neutral on the effect of computer assisted audit tools and techniques and performance expectations of auditors; and 28 respondents (14%) disagree that computer assisted audit tools and techniques affects performance of auditors and 20 respondents representing (10%) strongly

Table 3: Computer assisted audit tools and technique and performance expectations

Options	Responses	Percentage of response
Strongly agree	70	35
Agree	53	26
Neutral	31	15
Disagree	28	14
Strongly disagree	20	10
Total	202	100

Field survey

Table 4: Computer assisted audit tools and technique and effort expectancy

Options	Responses	Percentage of response
Strongly agree	60	30
Agree	72	36
Neutral	19	9
Disagree	31	15
Strongly disagree	20	10
Total	202	100

Field survey

Table 5: Computer assisted audit tools and technique and facilitating conditions

Options	Responses	Percentage of response
Strongly agree	61	30
Agree	67	33
Neutral	35	17
Disagree	28	14
Strongly disagree	11	6
Total	202	100

Field survey

disagree on the effect of computer assisted audit tools and techniques on performance expectations of auditors.

Research question 2: To what extent do auditors' usage of computer assisted audit tools and techniques in effort expectancy in Nigeria?

Table 4 above shows the application of computer assisted audit tools and techniques on the effort expectancy of auditors. Sixty respondents representing (30%) strongly agree that computer assisted audit tools and techniques affects the effort expectancy of auditors; 72 respondents representing (36%) agree that computer assisted audit tools and techniques affects the effort expectancy of auditors; 19 respondents representing (9%) were neutral on the effect of computer assisted audit tools and techniques and effort expectancy of auditors; and 31 respondents (15%) disagree that computer assisted audit tools and techniques affects effort expectancy of auditors and 20 respondents representing (10%) strongly disagree on the effect of computer assisted audit tools and techniques on effort expectancy of auditors.

Research question 3: To what extent do auditors' usage of computer assisted audit tools and techniques in facilitating conditions in Nigeria?

Table 5 above shows the application of computer assisted audit tools and techniques on the facilitating conditions of auditors. Sixty one respondents

representing (30%) strongly agree that computer assisted audit tools and techniques affects facilitating conditions of auditors; 67 respondents representing (33%) agree that computer assisted audit tools and techniques affects facilitating conditions of auditors; 35 respondents representing (17%) were neutral on the effect of computer assisted audit tools and techniques and facilitating conditions of auditors; and 28 respondents (14%) disagree that computer assisted audit tools and techniques affects facilitating conditions of auditors and 11 respondents representing (6%) strongly disagree on that facilitating conditions of computer assisted audit tools and techniques affects the facilitating conditions of auditors.

Research question 4: To what extent do auditors' usage of computer assisted audit tools and techniques in social influence in Nigeria?

Table 6 above shows the application of computer assisted audit tools and techniques on the social conditions of auditors. Fifty respondents representing (25%) strongly agree that computer assisted audit tools and techniques affects the social conditions of auditors; 63 respondents representing (31%) agree that computer assisted audit tools and techniques affects the social conditions of auditors; forty one 41 respondents representing (20%) were neutral on the effect of computer assisted audit tools and techniques and social conditions of auditors; and 38 respondents representing (19%) disagree that computer assisted audit tools and techniques affects social conditions of auditors and 10 respondents representing (5%) strongly disagree on the effect of computer assisted audit tools and techniques on the social conditions of auditors.

Hypotheses testing: Table 7 shows the Breusch-Godfrey Serial Correlation LM test for the presence of auto correlation. The result reveals that the probability values of 0.12 (12%) and 0.10 (10%) is greater than the critical value of 0.05 (5%). This implies that there is no evidence for the presence of serial correlation.

Table 8 shows the White Heteroskedasticity test for the presence of heteroskedasticity. The econometric result reveals that the probability values of 0.496 (50%) and 0.483 (48%) are considerably in excess of 0.05 (5%). Therefore, there is no evidence for the presence of heteroskedasticity in the model.

Table 9 above shows the Ramsey RESET test for misspecification. The econometric result suggests that the probability values of 0.794 (79%) and 0.789 (79%) are in excess of the critical value of 0.05 (5%). Therefore, it can be seen that there is no apparent non-linearity in the regression equation and so it would be concluded that the linear model for the accounting services is appropriate.

Table 6: Computer assisted audit tools and technique and social conditions

Options	Responses	Percentage of response
Strongly agree	50	25
Agree	63	31
Neutral	41	20
Disagree	38	19
Strongly disagree	10	5
Total	202	100

Field survey

Table 7: Breusch-Godfrey serial correlation LM test

F-statistic	6.929189	Probability	0.121336
Obs*R-squared	13.34731	Probability	0.101264

E-view output

Table 8: White heteroskedasticity test

F-statistic	0.942165	Probability	0.496821
Obs*R-squared	9.519861	Probability	0.483577

E-view output

Table 9: Ramsey reset test

F-statistic	0.067894	Probability	0.794795
Log likelihood ratio	0.071133	Probability	0.789695

E view output

Table 10 shows the Augmented Dickey-Fuller unit root test for stationary of the variables. The result suggests that use of CAATTs, performance expectancy, effort expectancy, facilitating conditions and social influence with ADF of -3.816986, -3.759500, -4.792773, -3.105035 and -4.355909 is less than 1% of -3.4755 and 5% of -2.8810. The result reveals that the variables are stationary at I (0). Therefore, ordinary least square can be applied in the analysis of data when data is stationary at I (0) (Greene, 2002; Wooldridge, 2006; Asterious and Hall, 2007; Brooks, 2008; Gujarati and Porter, 2009; Kozhan, 2010).

Table 11 shows the multiple regressions analysis for the use of computer assisted audit tools and techniques by auditors in practice. The result suggests with p-values of 0.0254 (2.5%), 0.0030 (0.3%), 0.0413 (4.1%) and 0.0227 (2.27%) is less than the critical value of 0.05 (5%). We fail to accept the null Hypotheses (H₀), hence we accept the Alternative Hypotheses (H_A) that performance expectancy, effort expectancy, facilitating conditions and social influence significantly affect the use of computer assisted audit tools and techniques in audit practice by auditors in Nigeria. Hence, we deduce that there is a positive and significant relationship between the use of CAATTs and the efficient and effective performance of auditors in practice. The R² (coefficient of determination) of 0.174889 and adjusted R² of 0.158136 shows that the variables combined determines about 17 and 16% of CAATTs usage by professional accountants in Nigeria. The F-statistics and its probability shows that the regression equation is well formulated explaining that the relationship between the variables combined of are statistically significant (F-stat = 10.43896; F-pro. = 0.000000). This result is consistent with study conducted by Janvrin *et al.* (2008) that performance expectancy and facilitating conditions such as organizational and technical infrastructure support

Table 10: Augmented dickey-fuller unit root test

Variable	ADF	1%	5%	Test for unit root
Use of CAATT	-3.816986	-3.4755	-2.8810	I (0)
Performance expectancy	-3.759500	-3.4755	-2.8810	I (0)
Effort expectancy	-4.792773	-3.4755	-2.8810	I (0)
Facilitating conditions	-3.105035	-3.4755	-2.8810	I (0)
Social influence	-4.355909	-3.4755	-2.8810	I (0)

E-view output

Table 11: Multiple regression output

Variable	Coefficient	S.E.	t-statistic	Prob.
C	6.291738	1.533195	4.103677	0.000100
PE	0.182626	0.081095	2.251998	0.025400
EE	0.316890	0.074394	4.259630	0.003000
FC	0.279363	0.123197	2.267612	0.041300
SI	0.258639	0.099398	2.602054	0.022700
R-squared	0.174889	Mean dependent var.		12.633660
Adjusted R-squared	0.158136	S.D. dependent var.		2.855466
S.E. of regression	2.619980	Akaike info criterion		4.788652
Sum squared residual	1352.267	Schwarz criterion		4.870540
Log likelihood	-478.6538	F-statistic		10.438960
Durbin-Watson stat	1.964276	Prob. (F-statistic)		0.000000

Dependent variable: TCU; Method: Least squares; Date: 05/11/12; Time: 22:18; Sample: 1 202; Included observations: 202; E-view output

influence the likelihood that auditors will use computer assisted audit tools and techniques. The result also confirms with the study of Mahzan and Veerankutty (2011), that CAATTs have been used mostly as a problem solving aid. Our results revealed that the desire to use computer assisted audit tools and techniques are more likely from the popular accounting firms who audit companies with sophisticated accounting information and this clients with complex accounting information motivates auditors to acquire more knowledge and skills in computer audit to be able to satisfy their clients.

CONCLUSION AND RECOMMENDATIONS

The study examined the use of computer assisted audit tools and techniques by accounting firms in the Niger Delta of Nigeria. The study reviewed relevant literatures that provide strong evidence on the effectiveness and efficiency of computer assisted audit tools and techniques and audit practice in the provision of accounting services in the Niger Delta of Nigeria. Our research empirically substantiated the results of prior studies of the relationship between CAATTs and performance expectancy, effort expectancy, facilitating conditions and social influence. The empirical analysis provided an association between usage of CAATTs and all the explanatory variables in the model. On the basis of the empirical result, the study concludes that the adoption of computer assisted audit tools and techniques has become a beneficial choice for auditors in the 21st century complex business environment and an efficient tool to increase the productivity as well as the audit functions (Zhao *et al.*, 2004). Therefore, professional accountants need to expand their knowledge of information technology and computer accounting audit methodology; the syllabus of accounting programmes for professional and tertiary institutions should be reviewed to include courses in computer accounting information system audit; relevant

professional accountancy bodies in Nigeria should also include courses in computer information system audit as part of their training programmes and professional accountants should be made to appreciate the relevance of computer in the 21st century business environment in the provision of relevant accounting services for the sole aim of satisfying their clients and also audit firms need to increase their organizational and technical support to encourage the use of CAATTs.

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