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Full Length Research Paper

Effect of audit quality on market price of firms listed on the Nigerian stock market

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This study examines the effect of audit quality on share prices of Nigerian oil and gas firms using the regression and covariance analyses. Findings from the regression anlysis suggests that the composition of the audit committee and auditor type has significant effect on the market prices of quoted firms. There is a positive and significant relationship between audit committee composition and share prices. The covariance analysis suggests that while auditor type (BIG4/NONBIG4), auditor independence, and composition of the audit committee have a positive and significant relationship with market price of shares, tenure of external auditors has a negative relationship with the market price of shares. The implication of the findings is that audit quality will enhance reported earnings and hence the share market prices. The study recommends that firms should strive to associate with the BIG4 external auditors in Nigeria as such an association could enhance the credibility of the audit process and by extension their share prices; regulatory authorities should discourage joint audit and non-audit services to firms because it could threaten the independence of external auditors. Regulatory agencies should also present distinct statements on the tenure of the external auditors to be clearly stated in annual reports. This is because a long attachment between the external auditors and a client may threaten the independence of the external auditors.

Key words: Share-prices, audit-quality, auditor-independence, auditor-type.

INTRODUCTION

Auditing of financial statements serves as a control mechanism for shrinking information unevenness and safeguarding interests of the differing claimants by ensuring that the audited financial statements are free from contents misstatements (Macharia and Gatuhi, 2013). Auditors help to reduce the perils of significant misstatements by ensuring financial statements are prepared according to preset standards. Lower perils on misstatements intensify confidence in stock markets, which in turn lowers the cost of capital for firms (Hoti, 2012). Standard setters and implementers can increase the effectiveness of public firms by propagating standards that help guarantee that auditing improves the excellence of financial information. This is because both internal and external users of financial statement are interested in the excellency of audits (Miettinen, 2011).

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A quality audit can allow income management so that earnings per share figures reach desired levels. Earnings can be manipulated to ensure that earning per share meets analysts' forecasts. Since current income is a signal of expected cash flows, failure to meet analysts' expectations of earnings per share could result in a dejected share price, while meeting these expectations brings about a maintenance or growth in stock price (Jordan et al., 2010). Signaling theory opines that firms with good performance send a signal to the market through financial information disclosures. Firms are provided an incentive to signal through their choice of an external auditor. Even voluntary disclosures that may be used as signals improve credibility in the presence of a quality audit. A financial statement audited by dependable auditors signals to the market that the financial statements are more reliable than those audited by unreliable auditors. The market perceives size and specialist auditors to be of a higher quality than others and rewards (punishes) companies with larger improvements or falls in share prices accordingly. Bearing the aforementioned in mind, a superior and independent audit plays an important role in maintaining an efficient market environment, underpins confidence in the reliability and veracity of financial statements essential for well functioning markets.

The acknowledged failure of audit process to capture financial misstatements has provoked the ostensible outburst of interest and attention in general financial reporting. The perceived failure of audit to fully alert equity and other claimants concerning misrepresentations has made investors helpless and inept to undertake rational financial decisions affecting entities generally. This is so because the quality of reported earnings and the capability of auditing to efficiently contain management earnings machinations have become highly doubtful. Thus, there is a worry about the truthfulness of reported income and its relationship with the audit process given the pockets of corporate failures. Thus, questions whether these corporate failures and by extension stock price fluctuations are not the result of poor audit process and the incapability of the audit function to cushion earnings misstatements.

Stock price fluctuation is a sudden and negative reverse in investors' prospects about a firm's shares. Studies of stock prices fluctuations discovered two main reasons, namely management activities and accounting systems, which boost them (Khajavi and Zare, 2016). Management tries to mis-represent earnings, which leads to investors' prospects about the earnings of firms and ultimately increases their share price than the actual amount. Also, management illogically raises or hides bad news until they are unable to prevent it from broadcasting. At this point, stock price reacts to such bad news by crashing dramatically (Kim and Zhang, 2015). Stock price fluctuations in recent years due to occurrence

of certain events have become an increasingly important issue among financial and accounting researchers, whereas the main purpose of the auditing function is for reliable financial reporting for decision making. Lotfi (2011) pointed out that accounting was always an accomplice to management in studies regarding stock price fluctuations.

Due to the divorce of firm ownership from management, audit function arises. The agency problem arises from the existence of asymmetric information in the principal agent contracts (Jenson and Messier, 2000). The existence of information asymmetry between firm management and ownership influences the changes in market prices of shares. The audit function in a corporation is an inbuilt system that reduces information asymmetry for the interests of the owners. Auditors' theory of inspired confidence links the users' need for credible financial reports and the capapability of the processes to meet such needs. It reduces the possibility of hidden misstatement to an appreciated assurance level (Knechel, 2009). The quality of an audit process should influence the reported earnings and strongly influence investors' confidence. Conventionally, external audit function is necessary for enhancing confidence in financial reports. However, with the pockets of business collapses, there is a concern about the quality of auditing. This concern could also be extended to the underlying changes in market prices of shares over time, and hence, this study determines the impact of the quality of an audit on the market prices of shares for Nigerian firms.

Conceptual framework

Concept of audit quality

De Angelo (1981) defined the quality of audit services as "the market-assessed joint probability that a given auditor will both (a) discover a breach in the client's accounting system and (b) report the breach." The probability that a given auditor will discover a breach depends on the auditor's capabilities and the audit procedures employed on a given audit (Khajavi and Zare, 2016). After De Angelo, other researchers like (Palmrose, 1988; Teoh and Wong, 1993) jointly agreed that audit quality is perceived as discovering and reporting misstatements in financial statements by the auditor depending on his competence and independence. De Angelo (1981) developed a two dimensional definition of audit quality that set the standard for addressing the issue. First, a material misstatement must be detected, and second, the material misstatement must be reported. De Angelo (1981) further theorizes that larger firms perform better audits because they have a greater reputation at stake. In addition, because larger firms have more resources at their disposal, they can attract more highly skilled employees.

Measures of audit quality

Audit size/fees: Okolie and Izedonmi (2014) pointed out that scholars have theorized that large auditors attract a fee premium because their greater wealth reduces clients' exposures in litigation (the deep pockets theory); while others have theorized that there is no real audit quality difference, but rather that large firms are perceived to have gained experience and reputation for quality. Based on the report of De Angelo (1981), previous studies proxied the size of the auditor categorizing auditing firms belonging to the Big8, Big6 or Big5 as against non-Big8, non-Big6 or non-Big5 to classify levels of audit quality (Copley, 1991; Clarkson and Simunic, 1994; Becker et al., 1998; Krishnan and Yang, 1999). Some studies (Palmrose et al., 2004; Copley, 1991; Colbert and Murray, 1998) have also related audit fees with the quality of audit bearing in mind that firms who charge high fees for audit deliver high quality audit. However, the outcomes are mixed, but show a relationship between the size of the auditing firm and audit quality.

Audit independence: Okolie and Izedonmi (2014) defined audit independence as an auditor's unbiasedness in taking decisions during an audit. Independence implies being free from inspiration, stimulus or guidace of which in the absence of independence, the value of the audit function will be greatly compromised (Sweeney, 1994). Prior studies suggest that high audit fees paid by a company to its external auditor enhances the economic ties between them and as such may compromise the indepence of the auditor (Frankel et al., 2002; Li and Lin, 2005). This weakened unconventionality results in failed audit quality and gives room for earnings manipulations (Okolie and Izedonmi, 2014). In past studies, audit fees have been used to measure auditors' independence (Palmrose, 1986, 1988; Moizer, 1997; Wooten, 2003).

Auditor industry specialization: Auditor industry specialization is another proxy for audit quality (Khajavi and Zare, 2016) bearing in mind that the auditor expertise or incapability in an industry will affect the quality of the audit. Specialized audit firms that audit clients in specific industry is in an advantaged position to view business and operational risks in such industry and conversely. Conclusively, if auditors remain restricted in specialised industries, there are high tendencies of providing higher quality of audit (Yaghoobnezhad and Amiri, 2009). Craswell et al. (1995) opined that auditors with specialty in given industries always demand higher fees due to higher-quality capabilities. Auditors of industries specialty have been shown to have positive and significant relationships with audit quality (Chen et al., 2012; Jubb et al., 2004).

Auditor tenure: Auditor tenure is viewed as the length of time between auditor-client relationship (Okolie, 2014). A lengthy link between the auditor and his client may threaten unconventionality given developed familiarity. This may lead to less caution and compromise on the part of the auditor. Besides, a lengthy engagement may bring about less effort to signal the failings of internal control and risk sources (Okolie, 2014). Knapp (1991) established a linkage between audit tenure and competence. The objectiveness of an auditor in detecting anomalies increases in the first years of engagement but wanes with time, reaching its weakest level after 20 years of service (Okolie, 2014). There has been considerable decrease in number of years for auditor tenure. In the US, auditor tenure was reduced from seven to five years; the European Commission recommended a rotation of engagement partners every seven years; in France, auditors are chosen for six financial years, while in Nigeria audit engagement should not exceed three years (Okolie, 2014). Auditor tenure studies (Knapp, 1991; Lys and Watts, 1994; Geiger and Raghunandan, 2002; Frankel et al., 2002; Myers et al., 2003) abound in literature. For this study, auditor tenure was proxied as length of auditor-client relationship using a dichotoumous variable of '1' if 3 years+ and '0', if otherwise.

Composition of an audit committee: Composition of an audit committee is the percentage of non-executive and executive directors; and audit committees composed of higher non-executive directors viewed to be highly independent (Glover-Akpey and Azembila, 2016). Shivdasani (1993) and Yermack (1996) note that executive directors divulge limited information to non-executive directors and hence the domination of executive directors affects an effective control and management structure. The existence of majority of non-executive directors in an audit committee enhances the independence of the committee (Glover-Akpey and Azembila, 2016). Studies show that non-executive directors are capable of providing unconventional opinions and positive roles in corporate governance given their potents to be more independent than executive directors (Vinten and Lee, 1993; Beasley, 1996). Vicknair et al. (1993) note increasing ratio of non-executive director membership of audit committees and signify the importance of independence of the audit committee. Porter and Gendall (1993) observe that a high ratio of non-executive directors in an audit committee enhances the worth of an audit committee as an internal control mechanism. A high ratio of non-executive directors drastically reduces the probability of financial misstatements (McMullen and Raghunandan, 1996).

Perspective of share price measurement

Blessing (2015) notes that there are two perspectives of share prices measurement in the capital market: information and measurement perspectives. Information perspective measures the usefulness of accounting to

individual users without much emphasis on the precise structure of the relation accounting data and firm value (Bernard, 1995) while the measurement perspective assumes that share price movement can be determined by the degree of volume or price change following release of the information. The study by Ball and Brown (1968) was the first to document statistically a share price response to reported net income and their methodology is still employed today. The measurement perspective is rooted on the theoretical framework of equity valuation models (Ohlson, 1995), which expressed the value of a firm as a function of book value and earnings (Blessing, 2015). However, attention has turned in recent years to valuation models that include dividend per share, net assets per share earnings yield, and others (Francis and Schipper, 1999; Blessing, 2015; Kaplan, 2001).

Theoretical framework

The theoretical framework of this study is the agency theory used to determine the impact of audit quality on the market prices of firms quoted on Nigerian Stock Exchange. According to the agency theory, a company consists of a set of linked contracts between the owners of economic resources (the principals) and managers (the agents) who are charged with using and controlling these resources (Sarens and Abdolmohammadi, 2007). Jensen and Meckling (1976) state that in agency theory, agents have more information than principals and this information asymmetry adversely affects the principals' ability to monitor whether or not their interests are being properly served by the agents.

Sarens and Abdolmohhamadi (2007) opine that an assumption of agency theory is that principals and agents act rationally and use contracting to maximize their wealth. A consequence of this is the moral hazard issue (Farouk and Hassan, 2014) since all available information are not known to the principals at the time a decision is being made by an agent. Thus, the principal fails to determine whether the agent's actions are in the best interest of the firm. To reduce the likelihood of the moral hazard corporate governance ensures the inclusion of auditing as an internal control and mornitoring function. While Defond (1992) stresses the divergence of diffusion, separation of ownership and controlling such divergence demand monitoring. Therefore, numerous auditing processes will be needed to monitor the agent's actions in more diffused ownership structures (Farouk and Hassan, 2014).

The principal-agent association as shown in agency theory is important to understand how the role of an auditor has developed (Farouk and Hassan, 2014). Watts (1998) observes that auditing is considered as a bonding cost paid by agents to a third party to satisfy the principals' demand for accountability. Like any other cost of running the business, the cost of auditing is borne by principals to protect their economic interests. Louise (2005) states that audits serve as a fundamental purpose in promoting confidence and reinforcing trust in financial information. Agency theory therefore, stresses a useful economic theory of accountability, which helps to explain the development of audit function and by extension the quality of an audit process.

Table 1 shows a summary of empirical literature reviewed in the course of executing the study.

Research gaps

Studies on audit quality in Nigeria center on firms' performance and utilizing various performance measures as well as on earnings management utilizing the discretionary accrual method. Other studies on audit quality reviewed earlier were carried out outside the shores of Nigeria. The gap filled by this study could be viewed as follows: bearing the signaling theory in mind, it is expected that the release of a firm's financial reports and its earnings has a ripple effect on the market price of such firms. Thus, this study moves away from financial performance measures to ascertain the effect of audit quality on the value placed by investors in the stock market, the market price. Secondly, the essence of concentrating on market value is that the value of a firm especially the market value is reflective of the fundamentals of a firm including auditing practices (type, size, independence, tenure and audit committee composition). Thirdly, in the wake of improved financial reporting and by extension, the mandatory International Financial Reporting Standards (IFRS) adoption and its implication for firms, investors and the overall economic performance, this study examines the effect of audit quality on the value placed on firms by the stakeholders.

RESEARCH METHODOLOGY

The research design adopted for this study is the *ex-post facto* as the study relied on historic data. The nature of data for this study is secondary and sourced from the annual reports and accounts of sampled oil and gas firms for audit quality variables. For stock prices, the study used firm-level data bothering on stock prices gathered from the Nigerian Stock Exchange. Stock prices data exist in daily, weekly and monthly forms. This study adopts the monthly stock prices and using the December month as the closing price of the stocks in each of the periods. The population of the study consists of all the firms classified under the oil and gas sector of the Nigerian Stock Exchange.

Model

The Panel Least Squares (PLS) was applied to the series of data; the signs of the coefficients were relied upon in describing the direction and strength of linear relationship between the dependent variable (stock prices) and audit quality (independent) variables (composition of audit, auditor type, auditor independence, and auditor tenure). The general model is represented thus:

Table 1. Summary of empirical literature reviewed in the course of executing the study.

Author(s)	Year	Objective	Methodology	Findings
Jordan, Clark and Hames	2010	Whether audit quality, as proxied by auditor size, in the U.S. constrains earnings management to effect user reference points in earnings per share (EPS)	Simple proportions tests	Audit quality significantly restricts management's attempts at rounding up EPS
Husam, Keith, Simone, Ray and Stephan	2012	Address the question, do governance enhancing Audit Committee (AC) characteristics mitigate the firm performance impact of significant-adverse-economic events such as the Global Financial Crisis (GFC)?	Logit model analysis	Smaller audit committees with more experience and financial expertise are more likely to be associated with positive firm performance in the market. Longer serving chairs of audit committees negatively impacts accounting performance. Accounting performance is positively impacted where ACs include blockholder representation, the chair of the board, whose members have more external directorships and whose chair has more years of managerial experience.
Hoti, Ismajli, Ahmeti, Dërmaku	2012	To study the importance of variables and their significance regarding the audit in explaining the reactions of stock price movements (fluctuations).	Discriminant analysis and logit models	The test results show that audit quality, the auditor's opinion have an impact on the evolution of stock prices.
Macharia and Gatuhi	2013	To establish whether financial performance indicators of listed banks in Kenya influence the market price of shares	Regression analysis	A single financial indicator is not enough to influence the market price of shares
Farouk and Hassan	2014	Impact of audit quality on financial performance of quoted firms in Nigeria	Regression analysis	Auditor independence has more influence on financial performance than auditor size
Okolie	2014	Relationship and effects of auditor tenure and auditor independence on the earnings management	Pooled and panel data regression	Audit tenure and auditor independence exert significant effects and exhibit significant relationship with the amount of discretionary accruals of quoted companies in Nigeria.
Okoloie and Izedonmi	2014	Whether audit quality has any significant impact on and relationship with market value per share of companies in Nigeria.	Multiple regression analyses	The results of the multiple regression analyses show that audit quality exerts significant influence on the MPS of quoted companies in Nigeria.
Rahimi and Amini	2015	Evaluates the relationship between auditing quality and the profitability in the companies accepted in Tehran's securities exchange	Regression analysis	A positive and weak relationship between the auditor size (auditor's good fame) and the auditor's tenure period and the profitability ratios. A positive but non-significant relationship between profitability and auditors size and there is a positive and significant relationship between tenure period and profitability
Bansal and Sharma	2016	Examines the role of audit committee characteristics in addition with components of corporate governance in improving firm performance.	Fixed effect panel data regression	Results did not reveal any additional effect of audit committee independence and its meeting frequency on the financial performance of Indian firms.

Table 1. Cont'd.

				A relationship between the characteristics of the audit committees and the performance of the firms. Meanwhile, the number of independent members on the audit committee had no influence on the performance of the firms. However, the number of independent members of the audit committee with finance or accounting degrees impacted negatively on the firm's performance.
Glover-Akpey and Azembila	2016	Examine the association between the characteristics of audit committees and performance of firms in Ghana	Logit cross-sectional regression	
Khajavi and Zare	2016	Examined the impact of audit quality on stock crash risk in Tehran Stock Exchange	Multivariate linear regression, and logistic regression	A negative and significant relationship between audit quality and DUVOL (Down-to-up volatility). On the other hand, there is an insignificant negative relationship between audit quality and crash.

Source: Author's Compilation.

Table 2. Definition and measurement of the independent variables estimating audit quality.

Variable	Definition	Measurement
CAC	Composition of Audit Committee	A dichotomous variable, assigned 1 if there are at least one non-executive director that have basic financial literacy in the audit committee, otherwise 0.
Auditor tenure	Length of the auditor-client relationship	A dichotoumous variable of '1' if auditor-client relationship is 3 years+ & '0' if otherwise
Auditor independence	Auditor's unbiased mental attitude in making decisions throughout the audit and financial reporting	Natural log of audit fees is applied to measure auditor independence
Auditor type/size	In the light of recent events, large audit firms are the four largest international accounting and professional services firms referred to as the BIG4	A dichotoumous variable assigned 1 if firm is associated with one of the BIG4 and 0 if otherwise. BIG4 = Delloitte, ERNST&YOUNG, PWC, KPMG.

Source: Author's Compilation.

$$MPS_{it} = a + b_1CAC_{it} + b_2AUDT_{it} + b_3AUDTIND_{it} + b_4AUDTYP_{it} + b_5FS_{it} + b_6AGE_{it} + U_{it} \quad (1)$$

where a = constant; CAC = composition of audit committee for firm i at time t; AUDT = tenure of the external auditor for firm i at time t; AUDTIND = independence of the auditor for firm i at time t; AUDTYP = auditor type for firm i at time t; FS = firm size for firm i at time t; AGE = firm age for firm i at time t.

The definition and measurement of the independent variables estimating audit quality are shown in Table 2.

Dependent variable

Market price per share of quoted firms of each of the firms were obtained directly from www.cashcraft.com at the end of the year.

Control variables

Control variables used in this study are related to firms' size and age. Kinney and McDaniel (1989) find that larger firms tend to have better internal controls, better information systems, more resources for hiring fully qualified personnel, and therefore increased reporting quality. Firm size is measured as the logarithm of the book value of total assets and age was measured as the number of years given for firms' incorporation.

FINDINGS AND DISCUSSION

Here, the result of the general regression model, the correlation analysis and the test of hypotheses was

Table 3. Result of the multiple regression model.

Dependent variable: Market price
Method: Panel Least Squares
Date: 05/22/17; Time: 06:51
Sample: 2011 2015
Periods included: 5
Cross-sections included: 7
Total panel (unbalanced) observations: 33

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COMPAUDITCOMM	99.10391	40.92334	2.421696	0.0227
AUDITORTENURE	-36.71961	25.92141	-1.416575	0.1685
AUDITORTYPE	-48.77747	28.55578	-1.708147	0.0995
AUDITORIND	-36.75149	61.39854	-0.598573	0.5546
FIRMAGE	1.289510	0.865005	1.490754	0.1481
NLOGFIRMSIZE	-20.57044	64.90838	-0.316915	0.7538
C	337.0965	302.7335	1.113509	0.2757
R-squared	0.517947	Mean dependent var		64.14030
Adjusted R-squared	0.406704	S.D. dependent var		81.47161
S.E. of regression	62.75409	Akaike info criterion		11.30216
Sum squared resid	102390.0	Schwarz criterion		11.61960
Log likelihood	-179.4856	Hannan-Quinn criter.		11.40897
F-statistic	4.655993	Durbin-Watson stat		1.735039
Prob(F-statistic)	0.002440	-		-

Source: Author's Eviews Output.

presented. The panel least squares estimates of the study are shown in Table 3.

The result of the multiple regression model in Table 3 shows that why composition of the audit committee is statistically significant at 5% (0.0227 < 0.05), auditor type is significant at 10% (0.0995 < 0.10). The relationship between the variables was estimated with a covariance analysis and the result of the covariance analysis is shown in Table 4.

This study also estimated a correlation analysis to show the strength of the relationship between the audit quality variables and stock market price and the reesult is shown in Table 4.

The covariance analysis result in Table 4 shows that while auditor type (BIG4/ NONBIG4), auditor independence, and composition of the audit committee have positive and significant relationships with market price of shares, the tenure of the external auditor has a negative and insignificant relationship with the market price of shares.

Findings from the test of hypotheses show that the composition of the audit committee has a positive and significant effect on market price of quoted firms. This implies that enhancement in the composition of audit committee improves audit quality. This finding corroborates the findings of Hoti et al. (2012) who determined the effects of stock prices following the announcement of audited financial reports of Slovenian and Croatian public interest entities in the role of audit in explaining the reactions of stock price movements (fluctuations); they found that audit quality has an impact on the evolution of stock prices.

Khajavi and Zare (2016) examined the impact of audit quality on stock crash risk in Tehran Stock Exchange and reported that there is an insignificant negative relationship between audit quality and crash. This finding supports the findings of this study where auditor size, auditor tenure and auditor independence have negative and insignificant effect on stock prices for oil and gas firms in Nigeria.

CONCLUSION AND RECOMMENDATIONS

The quality of stated earnings and capability of the audit function to effectively constrain information missrepresentation of firms across the world have become highly questionable. Concerns abound about the audited reported accounting information and its relationship with the quality of the auditing function. This questions if corporate failures and stock price fluctuations are not outcome of poor audit function particularly in arresting earnings mis-representations. To this extent, this study examines the effect and relationship between

Table 4. Result of the covariance analysis.

Covariance Analysis: Spearman rank-order
Date: 05/22/17   Time: 06:58
Sample: 2011 2015
Included observations: 33
Balanced sample (listwise missing value deletion)
Correlation
t-Statistic
Probability

Observations	MKTPRICE	AUDITYPE	AUDITTEN	AUDITIND	AUDITCOM
MKTPRICE	1.000000 - - 33				
AUDITYPE	0.343055 2.033445 0.0506 33	1.000000 - - 33			
AUDITEN	-0.019177 -0.106794 0.9156 33	-0.124226 -0.697061 0.4910 33	1.000000 - - 33		
AUDITIND	0.469482 2.960514 0.0058 33	0.210906 1.201297 0.2387 33	0.137484 0.772814 0.4455 33	1.000000 - - 33	
AUDITCOM	0.629656 4.512666 0.0001 33	0.285720 1.660021 0.1070 33	0.022222 0.123759 0.9023 33	0.588302 4.050650 0.0003 33	1.000000 - - 33

Source: Author's Eviews Output.

audit quality and the market price of shares of Nigerian quoted firms. Findings from the multiple regression anlysis of the study suggest that the composition of the audit committee and auditor type exerts significant effect on market prices of quoted firms. The covariance analysis suggests that while auditor type (BIG4/ NONBIG4), auditor independence, and composition of the audit committee have a positive and significant relationship with market price of shares, the tenure of the external auditor has a negative relationship with the market price of shares. Conclusively, the adequate pricing of shares of corporations to a large extent depends on the perception of investors as regards the audit fundamentals of such firm.

Given a positive and significant effect of audit committee composition, firms should strive to increase the number of non-executive directors in the audit committee. This will enhance audit quality and by extension share prices. Although the size of the external auditor constitutes an insignificant effect on share prices, firms should strive to associate with the BIG4 external auditors in Nigeria as such an association could enhance the credibility of the audit process and by extension their share prices. Regulatory authorities should discourage audit firms from rendering non-audit services to firms because the joint provision of audit and non-audit services may eventually become a threat to the independence of the external auditor. This is because the joint provision of audit and non-audit services may lead to personal ties and familiarity may develop between the parties. This may lead to less vigilance on the part of the external auditor and even to an obliging attitude of the latter

towards the top managers of the company and by extension to poor audit quality. In order to improve the quality of audit in Nigeria, the regulatory agencies should present distinct statements on the tenure of the external auditor and this should be clearly stated in annual reports. This is because a rather too long association between the external auditor and his client may constitute a threat to the independence of the external auditor.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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Full Length Research Paper

Investment in accounting information system and sales growth: An investigation of Nigeria small and medium enterprise

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Previous studies indicated that most organizations do not invest in AIS because they do not know the importance of AIS to their organizational growth, while some that invested do not know it impacts on their organizational growth. This study examined investment in accounting information system and its effect on sales growth of Nigeria Small and Medium Enterprises (SMEs). The specific objectives of the study are to; identify the factors that influence sales growth, and examine the relationship between investment in Accounting Information System (AIS) and sale growth. A total of 120 questionnaires were administered to management staff of each selected Small and Medium Enterprise (SME) in Lagos State, Nigeria. Both descriptive and inferential statistics were employed for the study. The descriptive statistics employed include percentage frequency and charts to achieve the study objectives. The inferential statistics employed is multiple regression analysis while ANOVA was used to examine the relationship between investment in accounting information system and sales growth. Findings revealed that AIS investment, non AIS labor and AIS labor accounted for 82% of the variation in sale growth in the study area and that there is a relationship between investment in accounting information system and sale growth. Furthermore, it was revealed that AIS investment have the highest impact on sales growth (beta value = 0.944) followed by AIS labor (beta value = -0.018) while the variables that had the least impact on sales growth was Non AIS labor (beta value = -0.052). Conclusively, it was affirmed that a relationship existed between investment in AIS and sales growth. Consequently, government should implement a policy that will stimulate the investment in AIS by SME in order to improve their sales and in return have positive impact on economy development of the nation.

Key word: Sales growth, Accounting Information System (AIS) investment, non AIS labor, AIS labor.

INTRODUCTION

Small and Medium Enterprises (SME) are an important vehicle that address the challenges of job creation, sustainable economic growth, equitable distribution of income and the overall stimulation of economic

development in developing nations. The main objective of any business set-up; be it small, medium or large is to maximize profit either in terms of improving performance and increases in business productivity and sales or by achieving rapid expansion in market shares domination (Harash et al., 2014). In order to achieve this main objective, SMEs need to be responsive to the changes in the environments as well as technology, in particular to the use of Accounting Information System (AIS). Today, using AIS in business is a must for it is difficult to gain competitive advantage and survive without some adoption or implementation of this advancement in technological products. Thus, AIS is most widely used in businesses, specifically in financial reporting aspects (Harash et al., 2014). AIS is defined by Saira et al. (2010) as a system that processes data and transactions to provide users with information. Business needs to be planned and controlled before operation is carried out. Lallo and Selamat (2014) said it is the system that processes data and transactions to provide users with information. In this case, AIS is seen as a happening process that helps management in planning and controlling processes by providing relevant and reliable information for decision making.

The needs for decision making cut across all the department of any organization, with sale department inclusive. The sale department needs strategic approach to operationalize sale. Sale is the act of selling something; the exchange of goods, services, or property for money. Furthermore, it is the total amount of money that a business received from selling goods or services. In similar manner, sale is any activity related to selling or the amount of goods or service sold at a given time or period, the seller and the buyer complete a sale in response to acquisition, appropriation and requisition or a direct interaction with the buyer at the point of sale. One would not be mincing words to say that sale is the act of transferring the ownership of goods or delivering service to customer or consumer, for the fact that this is a way of exchange for mutual benefit to both the seller and the buyer. This sale relies on proper accounting information system.

According to Hadi (2014), the use of accounting information system should include planning and managing business activities. They further said accounting information system could be used as a mechanism for controlling financial and non-financial operation such as budgeting planning. Thus, it is salient to look into the import of investment in accounting information system and its effect on sale growth.

Modern literature shows that AIS characteristics such as: reliability, relevance, and timeliness have significant effects on the use of AIS and SMEs' performance (Harash, 2014). Furthermore, prior researches have shown that it is crucial for SMEs to use AIS to ensure business continuity and survival in the increasingly competitive environment and to enhance their business operations capability and efficiency. In other words, since sale is the major source of revenue, for organization to continue to exist, AIS is germane to organization survival. The work of Grande et al. (2011) show that large companies were more likely to use AIS than SMEs, although the work was not being centered on sale growth. Large companies are more likely to perform well and are more likely to use accounting information system than SMEs because companies with greater sales and higher revenue from using AIS are better able to cover the costs.

Taiwo (2016) said ICT has been a major factor of efficient accounting system and great organizational performance recently, and that it has been used to augment the reliability of accounting information and organizational performance. They opined that organizational performance was related to ability to meet set goals and actions. The study further put it forward that, to maximize the benefits of information technology systems, the appropriate implementation and adoption procedures have to be used, or else, there will be little or no impact of these technologies on the earlier mentioned variables. Again, the research work of Taiwo (2016) reported that there is a significant positive relationship between ICT system and accounting system with a significant positive relationship between ICT and organizational performance.

The present study is that it focused on one of the major indicators of performance measures, which is sales growth and how AIS investment could be used to improve this performance indicator. Researchers are yet to exploit this problem, thus, this research will bridge the gap in the literature. Also, apart from financial and non-financial performance indicators like: profitability, quality of service and productivity that researchers like Ajanthan et al. (2013), Korir and Imbaya (2013), Uadiale and Fagbemi (2012), Özer (2012), Sacristán-Navarro et al. (2011), and Thrikawala (2011) have worked on, sales is also important because without sales there is no profit. Moreover, most organizations have invested in AIS without knowing whether it has really contributed to their sales growth or not. Thus, that is why it is Germane to research into this research topic.

Most organizations do not invest in AIS because they do not know the importance of AIS to their organizational growth and some invested in AIS but do not know it effect on their organizational growth. However, according to Harash (2014), the use of AIS has certainly played an important role that contributes to company's value added by providing internally generated input, that is, financial statements, such information should help the company make better strategic plan. Therefore, investment in AIS must be strategically aligned with organization policy in order to have a positive effect on the organizational sales. Thus, it is pertinent to research into this topic, to inform those companies that have not invested in AIS of the need to know the effect and value of it on their sales

growth in other to statistically align investment in AIS to their company policy.

Sales concept

This is a concept or an idea that emphasized sale of goods and services and not underlying need or want of customers. It does not really consider whether the products are actually needed by the customer or not. The focus is on sales (profit) first and then on marketing. Another term for sales concept is selling concept where the sole aim is sales, and not whether the product is actually required. It is one of the parts of the marketing concept. Profitability is achieved through sales volume but it is not favorable in a competitive environment. Here, the buyer beware concept is followed where buyer should be vigilant because making sales becomes the primary concern of companies and customer satisfaction is secondary. Operating under the sales concept, a business would produce goods that it anticipated a profitable return from and then attempt to persuade consumers to purchase them by using advertising and other sales techniques.

Sales growth model

Liu (2009), in his work said, the establishment of sales growth model based on the theory of marketing force firstly, introduced a physical model as a body M moves following the path L. He said, if the quantity is not taken into consideration, there are only two main factors determining the body's speed. The first is the ΣF and the second is the length of L (assuming it is S). Suppose the circular frequency is Q. Then,

$$Q = \Sigma F/S \tag{1}$$

He further introduced another model into the marketing static circular system. In the marketing static circular system, the product's circular speed determines the growth of sales. Q stands for the sales growth, which is related with the forces and the perimeter S. He then said the relationship is similar to the physical model namely:

$$Q = \Sigma F/S \tag{2}$$

Forces exert different effects in different enterprises, for different products, at different time, and under different market conditions. Therefore, suppose the weight of each force is K_n, then:

$$\Sigma F = k_0 f_0 + k_1 f_1 + k_2 f_2 + k_3 f_3 \tag{3}$$

S stands for the path of the circular system. It represents the middlemen between products and demands. It is the

distance for starting a new cycle by the repetitive force of quality and service.

$$S = S_0 + S_1 \tag{4}$$

Where,
S_0 - psychological distance,
S_1 - spatial distance and time distance.

Liu (2009) sums up to conclude that:

$$Q = K \times \varepsilon \times [\Sigma F_1/S_1 + \Sigma F_2/S_2 + \ldots\ldots + \Sigma F_n/S_n] \tag{5}$$

Here, k is the resource coefficient; ε is the channel barrio coefficient which reflects the impact of channel conflicts on sales growth.

Subjected to $0 < \varepsilon \leq 1$.

As no channel conflicts, $\varepsilon = 1$;

As channel conflicts exist, $0 \leq \varepsilon < 1$.

Liu (2009) also quantitatively analyzed marketing force and sales growth by taking two products, A and B, in one brand in an enterprise. Before listing in market, analyze their sales growth trend and compare the possibility of their successes. Make quantitative analysis of elements in marketing static circular system. He discovered that future sales growth of product static pulling force is bigger than that of product without static pulling force, in which investment in accounting information system is paramount.

Small and Medium Enterprises (SME)

SMEs have various definitions which vary from country to country, and organization to organization. Thus, there is no universally accepted definition of SMEs because it is impossible to capture all the characteristics of SMEs or to highlight the differences between firms in different industrial sectors or countries. Most definitions of SMEs are based on the number of employees, capital base of the firm, market share, sales turnover and the infrastructure of the firm (Nyoni, 2018).

The European Commission (2016) defines SMEs as firms which hire fewer than 250 employees and has sales turnover of not more than EUR 50 million, and annual financial position (balance sheet) total not more than EUR 43 million.

According to Nyoni (2018), in Japan an SME is defined using three criteria which are type of industry, number of paid employees and paid up capital. In manufacturing, in order for a firm to be defined as small it must have paid up capital of 100 million yen and 300 employees; in the wholesale industry, a company is regarded as small or

medium enterprise if it has 30 million capital and it hires 100 employees; in the service and retail industry, a company is regarded as small if it employs 50 employees and the paid up capital is 10 million yen. In USA, for a firm to qualify as a small firm, it must have fewer than 500 employees. In Canada, a small firm is defined as one with 100 and less employees.

In Jordan, SMEs are defined using one criterion which is number of employees, and further distinguishes between small and medium enterprise. The Ministry of Planning and International Cooperation (2014) in Jordan, define small enterprises as those with less than 20 employees, and medium enterprises as those with between 20 to 99 employees.

In developing countries, like Nigeria, SMEs is defined as an organisation that hires not more than 50 employees while a medium enterprise is one hiring 75 to 100 employees. Small Enterprise Development Corporation (SEDCO) (2010) does not highlight any differences between small and medium entities. It defined Small and Medium Enterprise as an entity that has less than 100 personnel with maximum annual sales revenue of US$830 000.

Importance of Accounting Information System (AIS)

Harsh (2014) postulated a definition for AIS, as 'a system that processes data and transactions to provide users with information needed to plan, control and operate their businesses'. Here, AIS is viewed as a system that helps management in planning and controlling processes by providing relevant and reliable information for decision making. It suggests that AIS's functions are not solely for the purpose of producing financial reports. Its role goes beyond this traditional perspective. AIS should be utilized to include planning and managing business activities. It could also be used as a controlling mechanism such as budgeting. Therefore, full adoption of the system is essential to fully attain the system's benefits. AIS usage has certainly played an important role that contributes to company's value added by providing internally generated input, that is, financial statements, such information should help the company make better strategic plan (Harash, 2014). Developments in the areas of accounting and information system (IS) over the last decades of twentieth century have widened the range and roles of AIS (Abdallah, 2014; Emeka-Nwokeji, 2012). Amidu et al. (2011, and Grande et al. (2011) found out that SMEs used AIS for the preparation of management accounting information, but usually not to their full potential.

METHODOLOGY

This study was carried out in Lagos State, Nigeria in 2017. The respondents were purposively selected, while questionnaire used for the study was administered on management staff of 120 SMEs randomly selected from the study area. Therefore, a total of 120 questionnaires were administered. Questions raised in the

questionnaires were to elucidate the respondents view on the impact of investment in AIS on sale growth. Their opinion on the impact of investment in AIS on sales growth for a period of ten (10) years was collected. Also, the companies' data on AIS investment, non AIS labor, AIS labor and sales of each company for a period of ten years (2007-2016) was extracted from the companies' financial record. AIS investment is all cost involved in the purchase of both hardware and software excluding labor. Non AIS labor is all cost of labor that is not related to AIS while AIS labor is the cost related to AIS service. Thus, any company that cannot present or supply 10 years account or summary of her operation are not suitable for the work and cannot be sample, as it does not have data needed for the study. In similar manner, the questionnaire was used to extract data from the company's record. This implies that both secondary and primary data was employed for the study. The questionnaire collected data on the respondent information while at the same time extracted ten years relevant information from the company record.

The variables (AIS investment, non AIS labor, AIS labor and sales) were quantitatively measured by using their cost value. Both descriptive and inferential statistics were employed for the study. The cost value extracted from the firms' record was used for this purpose. The data generated from the questionnaire was analyzed with bar chart and percentage frequency while the data extracted from the firms' ten years record was analyzed with the use of multiple regression analysis. Furthermore, ANOVA was used to examine the relationship between investment in accounting information system and sales growth.

RESULTS AND DISCUSSION

The data generated from the respondents and the extraction made from the record was the base for analysis in this work. The variables (AIS investment, non AIS labor, AIS labor and sales) in monetary term were extracted from the record while the respondents' opinion was collected alongside. The opinion was based on yearly view of the respondent on what transpired within each year understudy.

Figure 1 presented the respondents view on sale after investment in AIS is better than before investment in AIS. 20 percent accounted for indifferent, 50 percent accounted for agreed while 30 percent accounted for strongly agreed. It was observed from Figure 1 that the respondents were of the opinion that investment in AIS influence growth in sale in the organization. This was in line with the finding of Saeidi (2014).

Figure 2 revealed that the comparative analysis of the respondents' views showed that sale before investment is better than after investment. It was observed that 30% of the sampled respondents strongly agreed, 50% agreed and 20% were indifferent to sale after investment is better than sale before investment. On the other hand, 2, 20, 29 and 49% agreed, indifferent, disagreed and strongly disagreed respectively to the question on sale before investment is better than sales after investment. Since the trend for sale after has higher positive response value, while sales before investment in AIS has higher negative response value, it was adduced that, the opinion of the respondent was that sale after investment in AIS was better that sale before investment in AIS.

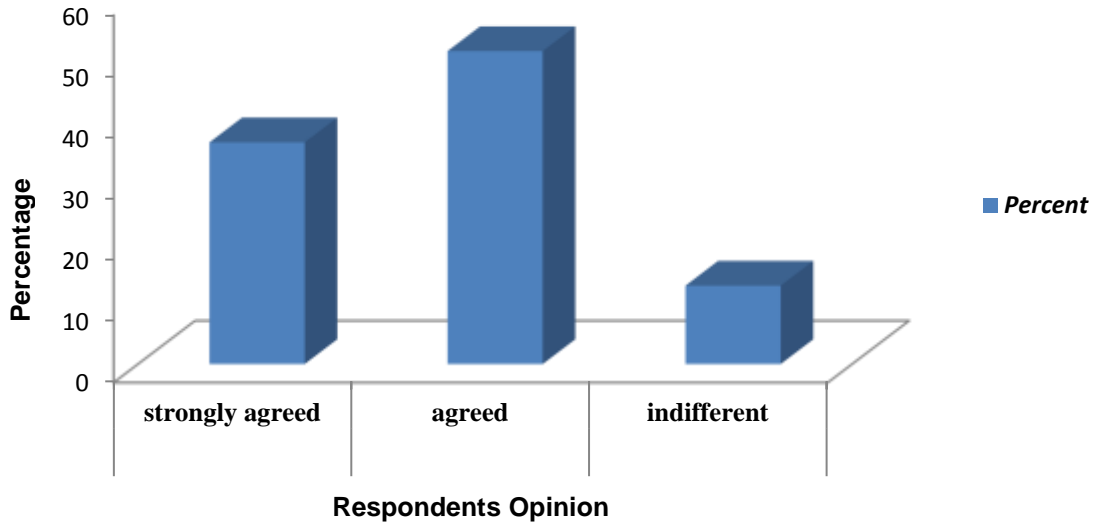Table 1 presented the view of the respondents on

Figure 1. Sales after Investment in AIS is better than before Investment.
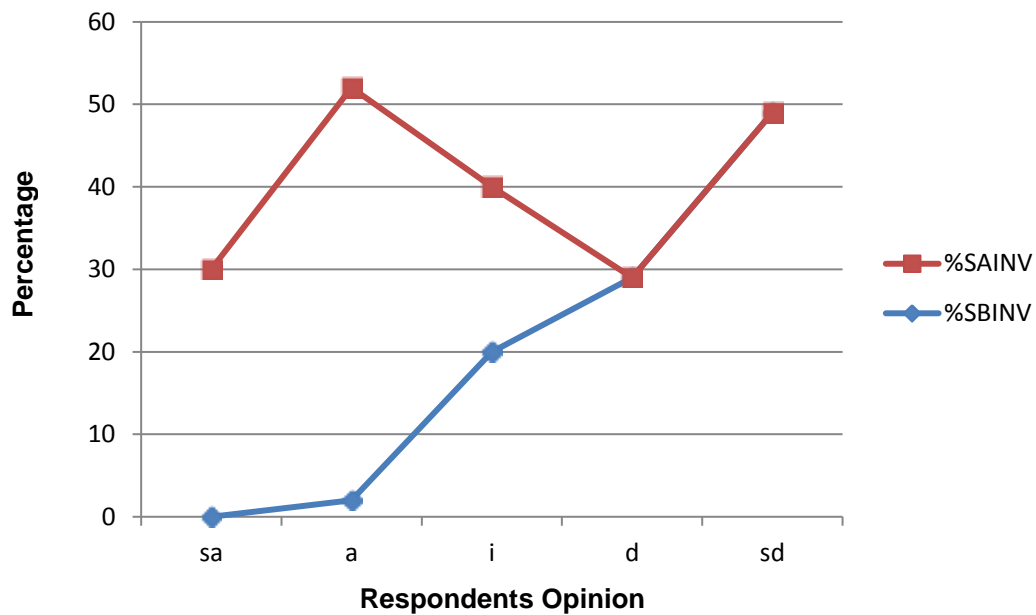Source: Field survey (2017).

Figure 2. Comparative analysis of Sales after Investment in AIS and before Investment in AIS.
Source: Field survey (2017).

Table 1. Factors influencing sales growth.

S/N	Variable	SA (%)	A (%)	I (%)	D	SD
1	Sales growth is been influenced by your company policy	100 (8.3)	1100 (91.6)	0	0	0
2	Investment in AIS enhances sales growth	333 (27.8)	867 (72.2)	0	0	0
3	Price of product influenced sale	157 (13)	1043 (87)	0	0	0
4	Government policy influenced sale growth	189 (15.75)	900 (75)	111 (9.25)	0	0
5	Increase in population influenced sale growth	700 (58.3)	500 (41.7)	0	0	0

Source: Field survey (2017).

Table 2. Model summary of the relationship between investment in accounting information system and sales growth.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.910(a)	0.828	0.827	495.27059

[a] Predictors: (Constant), invAIS, AISI, nAISl.
Source: Researcher's computation (2017).

Table 3. ANOVA of the relationship between investment in accounting information system and sales growth.

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1409112672.501	3	469704224.167	1914.870	0.000
Residual	293370381.320	1196	245292.961		
Total	1702483053.821	1199			

[a] Predictors: (Constant), invAIS, AISI, nAISl; [b] Dependent variable: Sale.
Source: Researcher's computation (2017).

factors that influence sale growth. It was interesting to know that the entire respondents concurred to the fact that company policy influence sale growth. This is obvious as 8.3% accounted for strongly agreed and 91.6% of the sampled population accounted for agreed. It was deduced that company policy influenced growth in sales.

Also, another factor is that investment in AIS enhances sales growth which was presented. 27.8% of the respondents strongly agreed while 72.2% agreed to the fact that investment in AIS enhance sales growth. It was deduced that investment in AIS influence sales growth.

In similar manner, it was revealed that price of product influence sale growth as all the respondents concurred positively to the fact that price of product influence sale. 13% strongly agreed and 87% agreed.

It also presented the respondents view on government policy influence sale growth. 15.75% strongly agreed, 75% agreed and 9.25% indifferent. It was generalized that government policy influenced sales growth in the study area.

Furthermore, the respondents' view on increase in population influenced sales growth showed that 58.3% of the respondents accounted for strongly agreed and 41.7% accounted for agreed. It was observed that the respondents were of the opinion that increases in population influence sales growth, and is in agreement with the work of Olugbenga et al. (2013).

The coefficient of determinant of the relationship between investment in accounting information system and sales growth have a value of $R^2 = 0.828$. This implied that, the extent to which the independent variables (AIS investment, AIS labor and non AIS labor) explain the variation in the dependent variable (Sale Growth) is 82%. In other words, the proportion of variance in sale growth in the study area that is predictable by AIS investment, AIS labor and non AIS labor is 82%. It can also be

explained that AIS investment, AIS labor and non AIS labor accounted for 82% of the variation in sale growth in the study area (Table 2).

In order to examine the relationship between investment accounting information and sales growth, ANOVA was employed. The golden rule stated that when the critical p-value is lower than 0.05 level of significance the null hypothesis is rejected. The F-ratio value was 1914.870 while the critical p-value was 0.000 which is lower than the 0.05 level of significance. Thus, the null hypothesis which stated that there is no relationship between investment in accounting information system and sales growth was rejected. While on the other hand, the alternative hypothesis which was that there is a relationship between investment in accounting information system and sale growth was accepted (Table 3).

Also, the individual impact of the variables was examined in Table 4. it was observed that AIS investment have the highest impact on sales growth with beta value of 0.944 followed by AIS labor with beta value of -0.018 while the variables that had the least impact on sales growth was non AIS labor with beta value of -0.052. The impact of the variables was based on the beta value as presented in Table 4. Thus, the regression formula;

$$S = 263.785 - 0.083NAISL - 0.153AISL + 1.246INVAIS$$
(6)

Equation 1 explains the predicting value and impact of investment in AIS on sales growth (Table 4).

CONCLUSION AND RECOMMENDATIONS

Based on the findings of the study, it was concluded that the factors that influenced sales growth are company policy, investment in AIS, government policy, and

Table 4. Individual impact of the variables coefficients.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	**Std. Error**	**Beta**	**B**	**Std. Error**
1	(Constant)	263.785	18.318		14.400	0.000
	NAISI	-0.083	0.033	-0.050	-2.534	0.011
	AISI	-0.153	0.119	-0.018	-1.285	0.199
	InvAIS	1.246	0.025	0.944	50.547	0.000

[a] Dependent variable: Sale.
Source: Researcher's computation (2017).

increase in population. Furthermore, the study affirmed that a relationship existed between investment in accounting information system and sales growth which corroborated with the findings of Taiwo (2016) and Saeidi (2014). The descriptive approach had similar result with the result obtained from inferential approach. The respondents view on the impact of AIS investment on sale growth was positive and agreed with the result from the multiple regression analysis and the F-ratio that relationship existed between investment in accounting information system and sales growth.

It was recommended that organization should invest more in accounting information system so that other derivable benefits will be achieved. Also, organization should endeavor to train their staff on AIS uses to improve their working performance and enhance sale growth. Also, government should formulate a policy that will promote the adoption of AIS in a bid to assist SMEs sale growth which will in turn, help keep a track record of SMEs sale and at the same time better the standard of living of the firms.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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