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External Auditor Selection Choice: A Multinomial Logistic Regression Approach

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Abstract

This research work examines the factors that determine the selection of external auditor among Global Brand listed companies in Nigeria. The variables of Audit Big 4 firms which include Deloitte, Klynveld Peat Marwick Goerdeler, (KPMG) and Price Water House Coopers (PWC) where selected as choice target **for this research work. Big four audit firm of Ernst's & Young (E&Y)** was excluded in the sample as it is found not to have provided audit services to any of the selected global brand listed company in Nigeria during the period covered by this study. The study employed the methodology of Multinomial Probit Regression (MPR) analysis in X-raying the data. Empirical evidence shows that there is a significant positive relationship between firm size and **choice of external auditor's selection for the big four audit firms** of KPMG and Deloitte. The study also provides a revelation that the relationship between the variable of firm size is negative and statistically significant with audit firm of Price Water House Coopers (PWC). The research work carefully recommends that global brand companies in Nigeria with interest to hire audit services of Deloitte and KPMG must ensure that its total asset is significantly large. But suffice to state here that this may not apply to the audit firm of Price Water House Copper Corporation where the variable of audit fee is a significant determinant in the quest for employing it audit services.

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1. Introduction

The motive for engaging a particular external auditor by firms may be complex and likely to differ across organizations due to the fact that the benefits of acquiring an audit firm are multi-faceted (Knechel, 2002). Various benefits that may be obtainable from engaging an audit has been identified by Wallace (2004). Notable among these reasons are: a decrease in information risk which is as a result of more reliable reporting; improved operational efficiency and effectiveness owing from auditor appraisal of the

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firm internal processes; prevention of management malfeasance; improved compliance with both legal and regulatory constraints, and market consent to undertake certain activities such as participating in public capital markets activities. Going by the multi-dimensional importance of an audit service, the optimum mix of various benefits may vary across stakeholders, groups and organizations. In some instances, management and stakeholders of an enterprise may be most interested in cutting down agency costs and the cost of capital which is strongly associated with reliable financial reporting (Francis et al., 1999; Gul & Tsui, 2001; Krishnan, 2003). However, following Ekumankama & Uche (2009), they document that the dire need to appoint external auditors arises in the quest to find a more efficient and effective way of promoting accountability in complex organizational environments where management interests could conflict with shareholder interests. Interestingly, The World Bank (2011) noted that about 2,000 audit firms currently supply audit services to domestic listed and unlisted companies in Nigeria. But in spite of the availability of a large number of auditing service providers, **the audit market space is dominated by only a few large audit firms known as the “Big Four”.** They include: Klynveld Peat Marwick Goerdeler (KPMG) Professional Services, Ernst and Young (E&Y), Deloitte and Price Water House Coopers (PWC).

Existing related research studies have provided mixed results whose sample covered listed companies in entirety, but this study provide empirical results after isolating global brand companies. A distinct characteristic of these firms is that they engage in products and services exportation outside the shores of Nigeria. However, their operations are carried out in one or more subsidiaries outside Nigeria with investments branches in foreign countries. Hence suffice to say here that the benefits derivable from engaging audit services may be reasonably different from domestic listed companies. This research work is limited to a few firms specific and some **corporate governance factors that determine a firms’ choice of selecting an external auditor among global brand listed companies in Nigeria.**

Nine (9) companies from a list of global brand companies quoted on the Nigerian stock exchange for the period of 2008 and 2016 were selected. The dependent variables of audit big 4 firms in Nigeria are employed by adjusting for Delliotte = 1, Klynveld Peat Marwick Goerdeler (KPMG) = 2 and Price Water House Coopers (PWC) = 3. The audit service firm of **Ernst’s & Young (E&Y) did not audit any of the global brand listed companies in Nigeria during the period of analysis, hence its exclusion from the sample.** This study is significant in directions that would help provide an in-depth understanding into the discussion of major factors that determine external auditor selection; it will provide information on what factors to address in cases where a firm requires the services of an external auditor. To the best of our knowledge, no similar study have been undertaken in Nigeria by employing Multinomial Logit Regression (MLR) technique which is the most appropriate in choice selection studies (Francis et al., 1999).

Prior literature on audit quality is structured around four categories (DeFond et al., 2014) which include: The concept of audit quality; motivators of client demand for audit quality; motivators of supply of quality audit; and the concerns of the regulators about audit quality. As reported by DeAngelo (1981); Fuerman (2004), the quality of an audit report directly affects various decisions of users of audited financial statements in terms of the degree of determining GAAP violations. But in sharp contrast to this belief,

(DeFond et al., 2014) argues that apart from violating GAAP rules and regulations, external auditors are responsible for providing assurances of financial reporting quality as a result of professional auditing standards. The IAASB framework for audit quality was issued in February 2014. This framework provides that auditors are expected to comply with relevant auditing standards and quality control through ethics and regulatory requirements. Furthermore, the framework shows that an open and constructive relationship between auditors and management also create an environment in which **management can benefit from auditors' observations on matters relating to possible improvements to the entity's financial reporting practices**, possible improvements in internal control over financial reporting, new financial reporting requirements, perspectives on industry issues, and observations on legal and regulatory matters.

Notably, the requirement of a strong relationship between the auditor and the management emphasizes the significance of auditor selection process. Hence, as the company grow in size and develop in organizational structure, they need more finance to stay in the capital market. This complexity increases the need for high quality financial reporting hence corporate governance processes becomes important. The demand for high quality audit stimulates the selection of the auditors through different factors but especially size, tenure, reputation, concentration and price.

Various studies employ the variable of size as a proxy (DeAngelo, 1981; Lee et al., 2003; Lennox, 2005; Lin & Liu, 2009) but selection is a two-way process between the audit firm and the client. Some of these studies find that audit firm size is positively related with audit quality (Krishnan & Schauer, 2000; Khurana & Raman, 2004) since they have more reputational and legal risk. knowledge from extant literature reveals that large audit firms are associated with lower litigation rates (Palmrose, 1988), higher fees, (Francis & Simon, 1987; Moizer, 1997), lower levels of discretionary accruals (Francis et al., 1999; Krishnan & Schauer, 2000), higher earnings response coefficients (Teoh & Wong, 1993), more informative signals of financial distress (Lennox, 1999), higher rates of compliance with GAAP and less mispricing of IPOs (Beatty, 1989). According to Craswell et al. (1995) and Ferguson et al. (2003), while these attributes are deemed to be manifestations of audit quality, other researchers have been less successful at finding quality differences among these large firms. The remainder part of this section empirically examines some factors that might influence choice of auditor selection.

Extant related studies reveal that firms with concentrated ownership exhibit agency problems which may be exacerbated or mitigated. Effective control in the hands of a dominant shareholder provides an opportunity for the expropriation of corporate resources at the cost of minority shareholders. Cohen et al. (2002), noted that all such poor practices have indirect relationship to financial reporting quality. The study of Chau & Leung (2006) suggests that ownership concentration is negatively related to the strength of internal corporate governance. Opaqueness in financial reporting process may persist, leading the controlling shareholder to accrue private benefits (Fan & Wong, 2002). In such a situation, in order to lower the degree of monitoring so that the expropriation behavior remains uncovered, the controlling shareholder may prefer to have its books audited by a lower-quality auditor (Lin & Liu, 2009).

Hu & Izumida (2008) document that ownership concentration has a positive and significant effect on audit firm selection while Chen et al. (2007) pointed out that the

audit service demand by firms with controlling shareholders could be different from that demanded by firms without controlling shareholders; they found that audit quality is indeed deteriorated and compromised when an auditor faces a business of family-controlled clients. Copley & Douthett (2002) argue that high ownership retention would have an inverse effect on auditor choice selection.

Employing a broad sample from eight East Asian economies, Fan & Wong (2005) documented that firms with agency problems embedded in the ownership structures were more likely to employ big audit firms. The controlling owner may believe hiring a high-quality auditor is a signal of good corporate governance and credible financial reporting to minority shareholders and other investors. As a result, firms hiring Big 4 auditors may receive smaller share price discounts associated with the agency conflicts. Following extant literature, we hypothesize that there is a negative relationship between ownership concentration and choice of auditor selection.

The listing age of a company has been specifically identified in recent studies as a characteristic attribute that impact on choice selection of external auditors. However, in many studies, this attribute has been seen to be very significant. Therefore, the extent to which a company will hire an external auditor can be related to how many years it has been in operation which connotes that the older the firm the more likely they are to rely on strong independent of reporting any breach. The study of Knechel et al. (2008) employed companies in Finland in analyzing the auditor choices for a sample of 2,333 which were predominantly small and mid-sized companies. Their findings reveal a significant positive relationship between firm age and the choice to hire a certified auditor. Based on the reviews above we hypothesize that there is a positive relationship between firm age and choice of auditor selection.

Overall, independent directors in the composition of the board of directors are viewed as instruments that reduce conflicts of interest between agents and shareholders (Fama, 1980; Fama & Jensen, 1983). However, there is a difficulty in predicting the sign of the relationship between board independence and choice of external auditor. Firstly, a substitute relationship would predict that the external auditor will play a substitute role when internal corporate governance system appears weak. Therefore in this regard, a negative relationship exists between board independence and the choice of a Big 4 auditor. Alternatively, the study of Beasley & Petroni (2001) suggested a positive relationship between the presence of independent directors and the choice of an auditor. Hence, a non-directional hypothesis will suffice. Carcello et al. (2002) find a significant positive relationship between the number of outside directors as a measure of expertise and audit fees. Their study suggests that boards with greater expertise will employ higher quality auditors in order to improve the overall corporate governance mechanism.

Boo & Sharma (2008) argue that directors who serve on multiple boards will spend less time on their board/audit committee role in any one of the firm they served and, consequently, they may demand additional assurances from external auditors and demand a more extensive audit to protect their reputation and capital investment. From the empirical studies above we hypothesize that there is a positive relationship between board independence and choice of auditor selection.

Prior research on auditor choice and audit fees in corporate organizations presents two possibilities. Firstly, due to lower agency problems, it is expected that firms will have lower demand for audit quality and eventually pay lower audit fees (Ho & Kang, 2013). On the other hand, the presence of strong incentives in corporate organizations to engage in fraudulent activities may increase audit risk. To mitigate such risks, auditors may be required to perform audits that are more extensive hence will charge higher audit fees. From the empirical studies above we hypothesize that there is a positive relationship between audit fee and choice of audit selection

The studies of Healy & Lys (1986); Johnson & Lys (1990); Francis & Wilson (1988); Firth & Smith (1992); Abbott & Parker (2000) document a positive relationship between client firm size and selection of higher quality audit firms and noted that client size is a crucial indicator of the extent of clients' agency costs. The study of Citron & Manalis (2001) finds that client size is positively related with selection of Big Six audit firms at 10 percent significance level in Greece. Similarly, larger clients may have received superior services from a myriad of professional advisors; hence, they may be less satisfied with small audit firms' services. Also the bigger clients may require additional professional services such as consultation, tax and legal services, etc. which are more likely to be supplied by larger audit firms. Based on the above, we hypothesized that there is a positive association between client firms' size and selection of higher-quality auditor.

The relationship between leverage and the demand for higher quality audits has been hypothesized and tested by various researchers (Palmrose, 1988; Firth & Smith, 1992). While Firth & Smith (1992) find a positive relationship between leverage and demand for higher brand name reputation auditors. Johnson & Lys (1990) interpret the positive association as the large audit firms' ability to diversify away the risk associated with high leverage.

In support of the negative relation, Healy & Lys (1986) and Johnson & Lys (1990) find that firms with higher debt levels are more likely to switch to a lower quality auditor. Accordingly, there is an ambiguity in the findings of prior research on the effect of leverage on auditor selection. On the demand side, risky client firms with highly leveraged, capital structures would look for a lenient auditor to get a clean opinion even though the firm might not be a going-concern. On the supply side however, leverage is a factor that increases the audit risk and in turn, affects the audit firms' willingness to be the auditor of such a financially distressed client. Although the cost of borrowing is very high in Nigeria, most of the companies still prefer high leverage due to its tax benefits and hyperinflation been experienced in recent times (Abbott & Parker, 2000). Based on empirical review above, we hypothesize that firm leverage will be negatively associated with the selection of higher-quality auditors.

2. Methods

For the sample, public listed firms from the Nigerian stock market for the period of 2008-2016 were considered. The data for this study are based on secondary data. The financial data on the explanatory and the dependent variables of individual companies have been collated from annual reports and accounts of companies listed on Nigerian Stock Exchange (NSE). In total, the sample population contained 170 listed firms (List updated

as at 31 December 2016) where the final target population is 21 firms and sample was selected down to 9 firms. The resulting data were finally compiled by Machame Ratios.

Table 1 Variable Definition and Measurement

Variable	Predicted Sign.	Type	Source	Scale
AUDIC		Dependent	Annual Report	Measured as big four audit companies in Nigeria
AUFEE	+	Independent	✓	Log of audit fee
FAGE	+	✓	✓	Firm age, difference between current year and year of listing
OWNCO	-	✓	✓	Ownership concentration, measured as sum of all above 5% interest
BOIDN	+	✓	✓	Board independence, measured as non-executive directors to total board size
TLBTA	+	✓	✓	Leverage, measured as total Liabilities divided by total asset
FSIZE	+	✓	✓	Log of total assets

The study employed Multinomial Logit Model. The Multinomial Logit Model is a statistical model used to predict the outcome of an unobserved multi-way trial given the associated explanatory variables. In this study, the dependent variables of audit choice was captured as Audit Big 4 firms with the exception of the audit firm of Ernest and Young (E&Y) which have not provided its services to any of the sampled firms during the period under study. For this purpose data were collated from the respective **company's** audited annual reports. The choice of secondary data was informed due to its relative speed, low cost, the possibility of generating longitudinal data sets by comparing data across years and the possibility of generating comparative data sets among the sampled firms.

The following model is used to examine the relationship between the independent and the dependent variables.

$$AUDIC = f(AUFEE, FAGE, OWNCO, BOIDN, TLBTA, FSIZE) \dots (1)$$

This can be written econometrically as:

$$AUDIC_{it} = \eta_0 + \eta_1 AUFEE_{it} + \eta_2 FAGE_{it} + \eta_3 OWNCO_{it} + \eta_4 BOIDN_{it} + \eta_5 TLBTA_{it} + \eta_6 FSIZE_{it} + \Sigma_t \dots (2)$$

Where:

AUDIC = Audit choice

AUFEE = Audit fee

FAGE = Firm age

OWNCO = Ownership concentration

BOIDN = Board independence

TLBTA = Firm leverage

FSIZE = Firm size

Σ = Stochastic or disturbance term

t = Time dimension of the variables

η_0 = Constant or intercept

η_{1-6} = Coefficients to be estimated or the coefficients of slope parameters

The expected signs of the coefficients (a priori expectations) are such that $\eta_1 \eta_2 \eta_4 \eta_6 > 0$ while η_3 and $\eta_5 < 0$.

3. Results and Discussion

The correlation result (Table 2) shows that except for the variable of ownership concentration and firm age, all other explanatory variables are negatively associated with the dependent variable of audit choice selection. This finding implies that there is a negative association between choice of external audit selection and all explanatory variables employed in this study. However it should be noted that the strength of association are relatively weak except for the variable of firm size which showed a moderate strength of 43%. The associational relationship between the independent variables of firm size and firm age is revealed to be 81% which suggest the presence of multicollinearity but was double checked with the variance inflation factor test which provides a better result in terms of confirming the presence of multicollinearity (Gujarati & Porter, 2009).

Table 2 Correlation Matrix Result

	AUDIC	FAGE	OWNCO	BOIDN	TLBTA	FSIZE	AUFEE
AUDIC	1.0000						
FAGE	0.1283	1.0000					
OWNCO	0.3707	-0.0501	1.0000				
BOIDN	-0.1496	-0.2121	-0.0949	1.0000			
TLBTA	-0.1234	-0.2543	0.1835	-0.3254	1.0000		
FSIZE	-0.4379	-0.5439	-0.0509	-0.0095	0.1686	1.0000	
AUFEE	-0.2311	-0.6525	-0.1477	0.0054	0.1190	0.8113	1.0000

The three models showed reported Pseudo R-Square (Cox & Snell, Nagelkerke, & McFadden) values > 0.5 ; which confirmed the statistical significance of the models. The multinomial logit regression result showed that the choice preference for Delloitte (Del) by global brand listed companies in Nigeria is significantly determined by the clients firm size (coef. = -6.889, $z = -2.58$ and P value = 0.010) and its ownership structure (coef. = -0.201, $z = -2.730$ and P value = 0.006). This result show that asset size and ownership structure of global brand listed companies in Nigeria justifies the reason why the attraction for Delloitte (Del) audit firm is poor. This result further suggest that as asset sizes, and ownership concentration of these global brand listed companies increases the choice selection for Delliotte (Del) audit firm services falls. However, this resulting relationship is significant at 5% level of significance. This finding do not corroborate the finding of Knechel et al. (2008) whose study found a positive and significant relationship between firm size, and choice of external audit firm selection. Furthermore, the study also reveal that as the budget for audit fee of global brand listed companies rises, the

chances that they will be able to attract the services of Deloitte becomes higher. This result does not agree with the result of Ho & Kang (2013) who documents that due to lower agency problems, it is expected that firms will have lower demand for audit quality and eventually pay lower audit fees.

The KPMG result revealed that the relationship between the audit firm and the asset size of global brand listed companies in Nigeria is positive and significant. The variable of firm size (coef. = 15.531, $z = 4.08$ and $P \text{ value} = 0.000$) is significant at 1% level of significance and as such good enough to hire the services of KPMG audit firm. However, audit fee charges (Coef. = -0.513 and $P \text{ value} = 0.008$) and ownership concentration structure (Coef. = -0.048 and $P \text{ value} = 0.002$) showed a negative relationship with KPMG audit firm. This finding follows that strict control creates an entrenchment problem that **allows controlling owners' self-dealings** to go unchallenged internally by the boards of directors or externally by takeover markets. In **addition, with a high ownership concentration, the firm's financial reporting is likely to be opaque** due to the incentives from the controlling shareholders' rent-seeking and expropriation behaviors. Hence, this finding negates the findings of Chau & Leung (2006); Claessens et al. (2000); Copley & Douthett (2002); Fan & Wong (2002). It suggest that a cut in audit fee from these Big 4 audit firms and an ownership concentration policy from global brand listed companies, geared towards encouraging patronage of Big 4 audit firms in Nigeria will be a welcome development.

Table 3 Multinomial Logit Regression Result

	DEL Model	KPMG Model	PWC Model
AUFEE	25.825 (2.88) {0.004}**	-0.513 (-2.650) {0.008}**	0.051 (2.650) {0.008}**
FAGE	-0.047 (-0.960) {0.336}	0.124 (1.680) {0.092}*	-0.124 (-1.680) {0.092}*
OWNCO	-0.201 (-2.730) {0.006}**	-0.048 (-0.670) {0.002}	0.048 (0.670) {0.500}
BOIDN	3.400 (1.290) {0.197}	3.911 (1.920) {0.054}	-3.911 (-1.920) {0.054}*
TLBTA	0.039 (1.060) {0.291}	0.052 (1.960) {0.050}*	-0.052 (-1.960) {0.050}*
FSIZE	-6.889 (-2.58) {0.010}**	15.531 (4.080) {0.000}***	-15.531 (-4.080) {0.000}***
Notes ***, **, * represents level of significance at 1% 5% and 10% (2-tailed)			

Furthermore, the result reveals that global brand companies in Nigeria hire the services of PWC as a result of its age status. Coef. = -0.124 and $P \text{ value} = 0.001$ hence the older the firm the higher the chances of choice selection of PWC for better quality of audit services. Furthermore, the result suggests that audit fee (Coef. = 0.051 and $P \text{ value} = 0.008$) and ownership concentration (Coef. = 0.048 and $P \text{ value} = 0.004$) are significant factors that motivates global brand listed companies to patronize the audit firm of Price

Water House Coopers. This finding is consistent with the result of Johnson & Lys (1990); Abbott & Parker (2000).

The relationship between the variable of leverage and choice for global brand listed companies under review showed positive choice selection for the services of Deloitte and KPMG. Their coefficient estimate of 0.039 and 0.052 respectively accounts for such inferences. However, this relationship does not pass the test of significance even at 10% level. Furthermore, the result reveals that as global brand listed companies accumulates more and more leverage, the motivation to hire the services of a Big 4 such as Price Water House Coopers audit firm shrinks.

4. Conclusion

This research work tends to find out the determinants of external audit choice selection of Global Brand listed companies in Nigeria. Audit Big firms consisting Deloitte, KPMG, and Price Water House Coopers were selected as choice target for the study. The study employed Multinomial Logit Regression (MLR) analysis in x-raying the data. Panel data referring to listed companies for the period of 2008–2016 show a significant positive relationship between firm size **and choice of external auditor's selection. This suggests** that as the asset size of global brand listed companies expands, the need to hire the services of Big 4 becomes stronger. So also is the variable of ownership concentration, and audit fee. The study also reveals that board independence and firm leverage are no significant factors that drive the need to hire the services of audit big four by global brand listed companies in Nigeria

Therefore, this study carefully recommends that Global Brand Listed Companies who wish to employ the audit services of Deloitte and KPMG should follow policies that will enhance the total asset of the firm. However, this recommendation does not apply to firms who seek the services of Price Water House Coopers as higher patronage from global listed companies will get a boost when its audit fee budget is improved upon.

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