Publisher homepage: www.universepg.com, ISSN: 2707-4641 (Online) & 2707-4633 (Print)

https://doi.org/10.34104/ijma.022.001170132

International Journal of Management and Accounting

Journal homepage: www.universepg.com/journal/ijma

Nigeria Listed Companies' Attributes and Environmental Information Disclosures

Eneh Onyinye M[1], Adebunmi Atinuke A[2], Oti Favour A[3], and Jesuwunmi Caleb. D. A[4]*

[1]Dept. of Accountancy, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria; [2]Dept. of Accountancy, Faculty of Management Sciences, University of Lagos, Nigeria; [3]School of Social Sciences, Western Sydney University, Australia; and [4]Dept. of Accountancy, School of Business Studies, Federal Polytechnic Auchi, Edo State, Nigeria.

*Corresponding author: calebian22002@gmail.com (Dr. Jesuwunmi Caleb Adeaga Daniel, Dept. of Accountancy, School of Business Studies, Federal Polytechnic Auchi, Edo State, Nigeria).

ABSTRACT

The study examined the joint prediction of return on asset, board size, and industry type and ownership structure on the likelihood (probability) of disclosing environmental qualitative information. The non-probability sampling technique (judgemental) was used to select 10 industrial and 12 consumer goods companies out of 35 Nigeria listed companies in the two sectors as of 31st December 2017; a total of 132 balanced panels pooled data was obtained via Tabachnick and Fidell, (2007) formula. The study covered a period of six years, that is, 2012-2017. The binomial logistic regression (i.e. linear probability model-LPM) was used to analyze the predictors' effect on the likelihood of disclosing environmental qualitative information proxy. Diagnostic tests such as Homer and Lemeshow test were used to address some basic underlying regression analysis assumptions. The results showed that ROA, board size, industry type and ownership structure jointly explained the likelihood of environmental information disclosure significantly. It is therefore recommended that Financial Reporting Council of Nigeria (FRCN) should improve on disclosure requirements for companies in Nigeria as it would help companies to disclose more environmental qualitative information to boost stakeholders' confidence and reduce host community's grievances.

Keywords: Companies attributes, Environmental information disclosure, and Nigeria.

INTRODUCTION:

Accounting standards setters all over the globe considers the main aim of financial reporting as providing useful information for the benefit of all stakeholders. Management is being required to convey non-financial information that goes beyond what is already contained in quantitative disclosure of the annual report. Financial reporting is expected to include both quantitative and qualitative information. Insalubrious information disclosure would repudiate existing and prospective investors the opportunity to accurately appraise the company. About 68% of investors acknowledged making use of such reports in reaching their investment decisions (Ernst & Young, 2017; IASB, 2015; Serrasqueiro & Mineiro, 2018; Sierra *et al.,* 2018). Non-financial information disclosures is required for a variety of reasons, including changing stakeholder information needs, the need to improve business reporting, encourage transparent disclosure standards, promote corporate accountability, minimizes information asymmetry; improves organizational communication with stakeholders and promulgate good corporate gover-

nance mechanisms so that users can trust and rely on information disclosed for decision-making. Non-financial information disclosure in corporate reports is also a strategic instrument that can help a company raise capital at the lowest cost possible. Non-financial information disclosures give investors and other stakeholders with meaningful, relevant, reliable, accounttable, and dependable information about the business's performance and future prospects to aid decision-making (Eccles and Krzus, 2009; Eccles *et al.,* 2011; Flack & Douglas, 2007; Franke, 2018; Ghasempour & Yusof, 2014; Healy & Palepu, 2001; Maroun, 2017).

Despite the importance of non-financial information disclosure in enhancing the transparency of overall reporting practices and establishment of many financial reporting requirements throughout the years, the issue of information disclosure by Nigerian listed firms has remained unsatisfactory; studies show that, in line with international acceptable regulatory guidelines, the level of non-financial information disclosure in Nigeria is still relatively low, even after the implementation of International Financial Reporting Standards (IFRS), which was intended to improve the level of accounting information disclosure. Furthermore, non-disclosure of qualitative data contributes significantly to the premature development of accounting practice in emerging countries such as Nigeria (Amaeshi *et al.,* 2016; Osisioma, 2001; Owolabi *et al.,* 2016 as cited in Oluwagbemiga, 2014). Divergent studies on the extent of environmental information disclosure have been undertaken, and attempts have been made to explain the various levels of environmental information disclosure based on various firm characteristics. Financial and non-financial company qualities refer to firm characteristics or unique features that distinguish one company from another. There are several corporate qualities; they are characteristics that distinguish one organization from another. The board size, return on assets, industry type, and ownership structure of the organization are all factors that influence corporate actions, including financial report information disclosure (Ali & Isa, 2018; Bose *et al.,* 2017; Islam, 2020; Nassreddine, 2016).

To the best of our knowledge, none of these previous studies from Nigeria have used the afore-mentioned surrogates (board size, return on assets, industry type, and ownership structure) in their studies. Hence, The study objective is to evaluate the combined effect of the aforementioned companies' attributes have on the likelihood of environmental information disclosure with the intention of ascertaining environmental information disclosure that is available to respective stakeholders of both consumer goods and industrial goods companies listed in the Nigerian Stock market.While the research question- what is the joint prediction of return on asset, board size, industry type and owner-ship structure on the likelihood (probability) of environmental information disclosure of listed consumer and industrial goods companies in Nigeria? The null hypotheses (H_0) is the joint prediction of return on asset, board size, industry type and ownership structure on the probability of environmental information disclosure of listed consumer and industrial goods companies in Nigeria is not significant. The study will be of importance to the divergent stakeholders. The research will assess the joint prediction of companies' attributes on probability of environmental qualitative information disclosure in consumer and industrial goods companies listed in the Nigerian stock exchange. The study adopted audited annual reports and accounts as the most important disclosure medium in Nigeria and two sectors of Nigeria stock exchange was studied out of eleven sectors. Based on this limitation, generalizability of the findings should be limited to the same disclosure medium and economic sectors studied.

The study is structured as follows: Section one focuses on introduction, research question and the formulated hypotheses under investigation. Section two presents the literature review, theoretical framework on which the work is based and empirical reviews. Section three is the research method. Section four presents data presentation and analysis while section five details the study findings, conclusion and recommendations.

Review of Literature

Information Disclosure

Corporate disclosure had been referred to as the preparation and presentation of voluntary and mandatory regulatory information disclosure necessary for the optimum operation of an efficient capital market and effective corporate governance system. Disclosure means the dissemination of relevant, material, and understandable information, from the private domain

to the knowledgeable public domain on a consistent basis. It is therefore, the provision of relevant financial and non-financial information about the organisational activities to the stakeholders (Adesina *et al.,* 2015; FASB, 2000; Hassan *et al.,* 2009; Taposh, 2014; Uyar, 2011). While non-financial information disclosure describes disclosures, primarily outside the financial statements, that are not explicitly required by accounting standards, rules and generally accepted accounting principles (GAAP) but they are demanded by government regulatory agencies. When a firm makes the decision to disclose information voluntarily, it assumes that benefits will outweigh costs. Such benefits may come in the form of the reduced cost of financing investment opportunities (e.g. cost of equity), lower transactions costs for investors by reducing information asymmetry between the contracting parties and more efficient functioning of capital markets, information disclosures are being influenced by divergent stakeholders' interests, socio and environmental factors surrounding organizations; these the firms need to balance in order to survive and operate efficiently within its environment (Barako, 2007; Enthoven, 1985; Healy & Palepu, 2001; Street & Shaughnessey, 1998; The Association of Investment Management Research (AIMR), 1992; Zarzeski, 1996). Non-financial information provides evidence of management acumen and operating know-how, and qualitative information usually correlates with quantitative information. Non-financial therefore relates to firm's operating methods (Healy & Palepu, 2001). The fear of market failures and competitive disadvantage has made the state or government to use discretion and free will to create laws to make firms disclose certain qualitative information for the interest of stakeholders (Bos *et al.,* 2008; Vives, 2007). Corporate disclosure falls into two broad categories: mandatory and voluntary. Mandatory disclosure consists of information disclosed in order to comply with the requirements of laws and regulations. On the other hand, voluntary disclosure is any information disclosed in addition to the mandatory disclosure. It is free compliance on the part of managements to provide accounting and qualitative information deemed pertinent to the decision needs of users of their annual reports it also include disclosure "recommended by an authoritative code or body (FASB, 2000; Hassan & Marston, 2010; Meek *et al.,* 1995) which is the focus of the current research. It can be through a variety of means, such as press releases, conference calls, investor and analyst meetings, and field visits with potential and existing institutional investors (Graham *et al.,* 2005; Healy & Palepu, 2001).

There are varieties of recommended frameworks companies can select from in reporting voluntary information disclosure (non-financial report) that are not legally binding, but provide necessary and helpful guidance while drafting a report. The non- financial reporting frameworks are initiatives which are jointly seeking to help the organization in non-financial reporting by ensuring legitimacy, clarity of standards, functionality, learning and engagement, clear communication and significance. According to the Non-financial reporting Directive, in providing the non-financial information companies may rely on national frameworks, Union-based frameworks such as the Eco-Management and Audit Scheme (EMAS), or international frameworks. International frameworks for non-financial reporting are: the United Nations (UN) Global Compact, the Guiding Principles on Business and Human Rights implementing the UN "Protect, Respect and Remedy" Framework, International Integrated Reporting Council (IIRC) measures and contribute to long-term value and societal organizational roles, the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises, the International Organisation for Standardisation's ISO 26000, the International Labour Organisation's Tripartite Declaration of principles concerning multinational enterprises and social policy, the Global Reporting Initiative. If a reporting company relies on a specific framework (national, European or international), it must state it in its report.

FASB (2000) explained that qualitative and quantitative information disclosure can be voluntary or mandatory disclosure in the corporate report suggesting that information primarily outside of the financial statements that are not explicitly required or those required by accounting rules or standards. Accounting Standards are the authoritative statements of best accounting practices issued by recognized accountancy bodies relating to various aspects of measurements, treatments and disclosures of accounting transactions and events, relating to how the items which form part

of financial statements in the corporate report should be dealt with and presented in firm's yearly report. Before adoption of IFRS in Nigeria, financial reporting and preparation of financial statements were basically on the (GAAPs). Auditors' decision to accept or reject an engagement was on the GAAP approach before adoption of IFRS as basis for financial reporting with effect from 2012. Generally Accepted Accounting Principles, (GAAPs) vary from one country to another. There is a US GAAP, a UK GAAP and Nigeria GAAP etc. The GAAP in Nigeria refers to: Local company law such as Company and Allied Matters Act, (CAMA), 2004. The Nigeria accounting standards (Statement of Accounting Standards-SAS) are issued by Nigeria Accounting Standards Board (NASB) now Financial Reporting Council of Nigeria (FRCN). However, the annual report has been detected in many studies as a significant source of voluntary information and reflects company's overall attitude towards information disclosure to the public.

Environmental Information Disclosure Variables

Environmental disclosure is the combination of narrative including objectives, explanations and numerical information such as emission amount, resources consumed on a corporations' environmental impact for the particular accounting period. It is defined as a systematic statement that describes the burden and environmental efforts including company's' objective, environmental policies, environmental activities and impacts, reported and published periodically to the public.

Environmental disclosure is not mandatory in Nigeria that is, not required by law. They do this from pressures from divergent stakeholders. Culture of the organization may also influence such disclosures as may be the preference of dominant management and CEOs. Organizations do this as a way of remaining legitimate in the eyes of the society as there may be benefits to be reaped. Many companies in Nigeria attempt to disclose the measures they take in environmental protection for instance, gas emission, water discharge, solid waste disposal, environmental policies; conservation of natural resources, recycling plant of waste products, installation of effluent treatment plant, anti-litter and conservation campaign information. The disclosure of environmental information is based on the document analysis as it is been promoted by previous studies (Bowen, 2009; Gray & Collison, 2002). Although, environmental disclosure is already a widespread tendency in organizations, companies do not address this issue on their audited annual report. Indeed, it constitutes a change to firms whose current environmental focus is presented on monetary terms. Another example are the corporate annual report that, usually, disclose their "good" business practices that ensure the sustainability of the business in order to contribute to the maximization of shareholder value, but nothing related to the "bad" business practices of the environment. But, there is a danger of transmitting a false image of firms' reports, emphasizing those that are managed positively there are evidence about environmental reporting (ER) to be subjective, because the environmental disclosure can change due to the voluntary basis. Disclosure could be the publication of standards by National Entities or Standard Setting Bodies in different countries about environmental responsibility. In Portugal there is an Accounting and Financial Reporting Standards 26 - Environmental issues, that prescribes the accounting treatment for environmental information in terms of recognition, measurement and disclosure (Chan & Welford, 2005; DeVilliers, 2003; Lamberton, 2009).

Much research in the field of environmental disclosure was conducted through the lens of organizational legitimacy. The management signals its efforts towards the welfare of particular stakeholders (i.e. the natural environment) and, consequently, communicates a congruency of actions and values with those of stakeholders seen as important in the legitimating process (Bowen, 2009). Reporting should be contemplated as a corporate communications tool which helps companies to be judged as "legitimate" by most, if not all, of their stakeholders in order to survive and prosper. Conceived as communications tools, annual reports and sustainability reports must focus on the organization as a whole and the task of how its operations are presented to all of its key stakeholders, both internal and external. The extant literature adopts a variety of approaches to the analysis of narratives in annual reports with the implicit underlying construct being the "quality" of disclosure. The semi-objective approaches specify ex ante a list of items and scrutinize the text for their presence, ignoring sections of the text that do not

relate to the list. This is the approach taken by the large body of disclosure index studies and it is characterized in this paper as a partial type of content analysis. It is a fairly objective, form-oriented content-analytic method.

Disclosure index studies assume that the amount of disclosure on specified topics is a proxy for the quality of disclosure. Coding schemes incorporate ordinal measures, to allow for the "quality" of the specific disclosure to be assessed (e.g.is the disclosure on topic X merely qualitative or is it quantified?). Disclosure quality is also important but very difficult to assess. As a result, researchers tend to assume quantity and quality are positively related. Disclosure index studies are based on the general principles of content (or thematic) analysis, which involves classifying text units into categories (Chan & Welford, 2005). Following coding, the form of analysis and interpretation that is undertaken can vary along a continuum from purely qualitative and verbally descriptive methods, to primarily quantitative methods that permit statistical analysis. Sustainability reports offer a window into corporate environmental and social strategy and performance, and make it possible to evaluate it as an adjunct to more familiar financial performance metrics. Depending on what companies choose to include in environmental and social performance reports, the reader can assess the degree of compliance with regulations, and compare performance with peer companies and across industries.

Companies' Attributes

Board size is the number of directors, both the executive and non-executive members duly elected and appointed to govern the affairs of the company independently and responsible in putting the necessary checks and balances. However, there is no one optimal size for a board. Number of board members considered to play a critical role that directly and indirectly affect firm performance (Hieu & Lan, 2015). Accordingly, board size is influenced by company's strategic vision and corporate governance elements and board leadership, etc. Literature on board size is of divergent views and results. Some studies results revealed that large board size is an indication of better and viable governance, whereas, some other studies results proved such as wrong and posited that smaller board size enveloped the elements of better governance with outputs of reliable and quality financial reporting. Board size is often used by some scholars to measure the quality of corporate governance and financial reporting. The board of a firm is responsible in ensuring and monitorin the quality of information in financial reports. Results of several studies have revealed that the twins of sound governance and board composition reduces the adverse effects of earnings management as well as the likelihood of creative financial reporting. According to Jensen and Meckling, (1976) a board membership should not exceed seven or eight number in order to function effectively. He further averred that smaller boards enhance communication, increase cohesiveness and bring about proper and adequate co-ordination, which resultantly make monitoring more effective. If Boards are properly coordinated and do their woks independently, the criticism in them failing to meet their governance responsibilities will reduce. The expected responsibilities of the board been emphasized are on board independence, board leader-ship structure, board size and committees. Kiel & Nicholson, (2003) view the board as the firm's highest level control mechanism, with ultimate responsibility of overseeing the activities of the firm. The larger the board the more complex it will be as regard decision making. Many scholars argued that the assertion that larger board size connotes viable governance is a misconception. On the contrary other scholar's debunked the assertion that larger size boards are better off. Results of empirical study undertaken by Khales *et al.* (2015) showed that smaller board size is associated with higher firm value. According to (Nyahas *et al.,* 2018) a large board is associated with a non-financial disclosure. Prior literature shows that board size plays a significant role in directors' viability to check on managers. Padilla, (2002) finds that categorization of board members into different committees largely depends on the size of the board. Serrasqueiro & Mineiro, (2018) further suggest that larger boards are able to commit more time and effort to monitor management. The functional effectiveness and efficiency of board size hinges largely on the connectivity to the inner workings of the board by various standing board committees which significantly play various supportive roles to complement boards' decision-making and supervisory functions. Such departmentalization of functions based on specialized standing committees

help shortened board decision making process Taposh, (2014) opines that board effectiveness is thus enhanced through the type and composition of board committees. This is because most of the strategic decisions are undertaken at the committee level. In some countries, board membership is structured to embody standing committees of audit, remuneration, and nomination to assist the boards with the multiple functional responsibilities.

Prior literatures have concluded that ownership structure of firms have impact or correlation on firms' financial reporting quality and performance. Owing to this, some firms consciously build its ownership structure to attain such desired objective. Institutional investors are viewed dually as "asset managers" and "asset owners". Asset management enhances the corporate value of companies through day-to-day constructive dialogue. Whereas asset owners are obligetory to fully disclose their stewardship responsibility policies. Institutional investors have the chance, know-how, skills and resources to influence the performance of the companies and have contributed to dynamic, increased competition professionalism (Shiri *et al.,* 2016). According to Umoren, (2009) irrespective of the influence of institutional owner's strategic decisions or not is relatively a function of their stake or ownership in the company. Institutions with a high stake in the company have less marketable number of shares and likely will hold them for longer, which exposes institutions to the performance of the company and will give them incentives to actively monitor and try to influence strategic decisions. By virtue of their shareholdings they have the capability of exercising influence in the management of corporations, hence brings about active corporate governance practices. Some of institutional investors act as intermediaries between lenders and borrowers and play critical role in functioning of the financial markets (Gillan & Starks, 2000).

Owing to the specialized knowledge they have, they can gather and interpret financial reports and as well be able to detect managerial opportunism over earnings figures. More so, as a result of their degree of investment, they also demonstrated high degree of interest in monitoring a firm's non-financial information disclosure (Rahim *et al.,* 2011; Robert *et al.,* 2005). The composition of investors in the capital structure of firms has the capability of affecting earnings management and will inevitably affect the quality of released accounting information; large shareholders, usually consisting of institutional shareholders, have a high ability to control managers. The rationale is that greater percentage of shares owned by the institutions will lead to a more effective control by shareholders.

Theoretical Framework

Stakeholders Theory

The proponents of stakeholder theory were (Clark, 1916; Dodd, 1932) later presented in management discipline in eighties by Edward Freeman (Freeman & Reed, 1983; Freeman *et al.,* 2004). The theory addresses the issues of ethics, morality and values in the management and administration of business operations by advancing or charting a new perspective of viewing business corporate image by divergent stakeholders; that is, values and morality are components of economic business activities that are inseparable (Asemah *et al.,* 2013; Freeman *et al.*, 2004; Learmount, 2002).

Stakeholder theory opines that an organization will react to the plea and expectation of influential stakeholders and some of the response will be in the form of strategic information disclosures. It focused on active management of the business environment, relationships and the promotion of shared interests in order to develop business strategies. Such strategic information disclosure when viewed in the light of this study is environmental qualitative information disclosure. A popular framework hyped by divergent scholars for addressing organization- environment interactions is stakeholder theory. This approach continues to receive a great deal of attention in recent times as is evidenced by previous studies. While conventional theories of the firm focus on its responsibilities toward its shareholders, a stakeholder perspective takes a broader view and implies that a company should consider the needs of all its stakeholders. This broad view is not without its problems: different stakeholders have differing stakes and balancing the needs of competing stakeholders is not an easy task. Moreover, stakeholder theory is derived from Western notions of (economic) rationality and fails to address needs of several marginalized groups like indigenous stakeholders. A stake-

holder perspective is also supposed to be helpful in analysing and evaluating an organization's "social performance" in terms of how it manages its relationship with society (Carroll, 1999; Clarkson, 1995; Donaldson & Preston, 1995; Freeman & Reed, 1983; Yi, Davey & Eggleton, 2011).

Stakeholder theory is normative with moral overtones. It focuses on what a company "should" do in order to fulfil its societal responsibilities. It is also instrumental in that it is expected to lead to better organizational performance (a hypothesis that is yet to be tested); and it is descriptive in that it posits a model of the corporation as a constellation of cooperative and competitive interests possessing intrinsic value (Donaldson & Preston, 1995). The normative core of stakeholder theory is said to be a driver of corporate social performance and once managers accept their obligations to stakeholders and recognize their legitimacy, the corporation is well on its way to achieving its moral principles (Clarkson, 1995). This is a simplistic argument that fails to recognize the inability of a frame-work to represent different realities and the effects of using a single lens to view issues such as legitimacy and responsibility.

Proponents of stakeholder theory claim that corporate social performance can be evaluated based on the management of a corporation's relationships with its stakeholders. Hence, a test whether an issue is social or not is the presence or absence of legislation. Thus, health and safety, equal opportunity, and environmental issues are social issues because legislation exists. This is an unsatisfactory argument that fails to address the fact that segments of society are legislated against. For instance, in the case of indigenous communities throughout the world, legislation designed to protect their rights is often a legacy of colonialism, regulated by neo-colonial modes of control through neo-colonial institutions. If there is no legislation, the issue becomes a "stake-holder issue" which needs to be addressed at the corporate level (Clarkson, 1995). In an attempt to identify which stakeholders really count, Mitchell *et al.* (1997) classified stakeholders based on their possession of three attributes: power (the stakeholder's power to influence the company), legitimacy (of the stake-holder's relationship with the company) and urgency (the extent to which the stakeholder's demands require immediate attention). However, the major weaknesses of this theory is applied on continuous basis in organization and sometimes the assessment of the analysis of this theory may be subjective and it is also not possible that all stakeholder interests can be met at the same time and as usual company can give more importance to stakeholders like shareholders of the company instead of employees and natural environment.

Review of Related Empirical Studies

Several extant studies have examined the effect of corporate characteristics on environmental qualitative information disclosure and given empirical evidence on information disclosure in corporate reporting. Guidry & Pattern, (2019) sought to determine why a growing number of environmental disclosure studies are using financial control variables based on arguments from the voluntary disclosure theory (VDT). The VDT justifications for these controls are based on assumptions that disclosure is used as a tool for reducing information asymmetry between managers and investors. Given the findings reported in a broad sample of legitimacy-based environmental disclosure studies, they sought to determine whether the disclosures are primarily aimed at the market, and as such attempt to assess evidence to date on the relation between VDT financial control variables and differences in environmental disclosure. Based on a review of thirteen recent environmental disclosure studies including VDT financial control variables in their analyses, they results show no association with the exception of firm size.

Omoye and Wilson-Oshilim, (2018) studied antecedents of voluntary environmental disclosure among quoted firms on the Nigerian Stock Exchange. Content analysis and historical data were obtained from financial statements and accounts of 118 sampled firms. The result of the analysis revealed that firm size and profitability have significant and positive relation-ship with environmental disclosure, managerial shareholding has significant influence and negative relationship with environmental disclosure while leverage and industry type were statistically insignificant, but leverage was negatively related while industry type was positively related. Oti & Mbuogar, (2018) evaluated the impact of environmental and social disclosure on the financial performance of quoted oil and gas compa-

nies in Nigeria. Time series data for five years were collected and analyzed using the ordinary least square regression technique. Results from the statistical analysis revealed that disclosure on employee health and safety and community development do not signifycantly affect financial performance while disclosure on waste management had a positive and significant effect on firm's financial performance. The study recommended that oil and gas companies should constantly review their waste management strategy. Mandatory social and environmental disclosure is considered by Sani, (2018). In his study of the performance evaluation of listed Nigerian companies pre and post disclosure era of 9 listed oil and gas companies listed on the Nigerian Stock Exchange, the study revealed a 53% increase in volume of social disclosure and 25% increase in volume of environmental disclosure after adoption by these companies. The panel regression also showed that company size has a positive and significant relationship with disclosure. Egbunike & Tarilaye, (2017) examined the association between firm's specific attributes (firm size, earnings, leverage and governance) and voluntary environmental disclosure with evidence from listed manufacturing companies in Nigeria for the period 2011-2015. Results of data analyzed using both descriptive and inferential statistical tools showed a positive relationship between environmental disclosure, firm size, leverage, earnings per share and governance of the studied manufacturing companies in Nigeria. Okoye *et al.* (2016) ascertained the effect of non-environmental cost disclosure on financial and economic performance of firms listed on Nigeria stock Exchange (NSE). The study adopted expost facto research design to investigate three cement industries listed on Nigeria stock Exchange for the period 2010 to 2014 through simple random sampling techniques. Multiple linear regressions were used to test the data obtained from content analysis of the annual reports of the firms. Findings of the analysis showed that non-environmental cost disclosures have significant effect on the firms' profitability, efficiency and liquidity. Ndukwe & Onwuchekwa, (2015) analyzed the determinants of environmental disclosure in Nigeria. Using the binary logistic regression the data collected from annual report of oil and gas companies in Nigeria for the period of 2008-2013. The result of the analysis reveals significant relationship between firm size, profit, leverage and audit firm type with environmental disclosure. Akbaş, (2014) The study further applied content analysis to examine the relationship between company characteristics and the extent of the environ-mental disclosures of 62 listed Turkish non-financial firms on the BIST-100 index at the end of 2011 Results of the regression analysis revealed that leverage is not statistically significant with the extent of qualitative information disclosure, while company size has a significant relationship with voluntary disclosure. Andrikopoulos & Kriklani, (2013) studied practices of environmental disclosure on the websites of companies listed on the Copenhagen Stock Exchange. The study revealed that leverage can affect the volume of environmental disclosure in corporate reports; there is also evidence that Firm size, the market-to-book ratio, and profitability are significantly associated with environmental disclosure.

In Turkey Akbas, (2014) examined Firm characteristics and environmental disclosure of listed companies on BorsaIsantabul. The results show that company size and industry membership are positively related to environmental disclosure while profitability showed a negative relationship with environmental disclosure.

Summary of Literature and Gap Identification

This reviewed show the level of environmental information disclosures could be determined using company attributes variables- firm size, leverage, profitability, listing age board size, and ownership structure variables, etc. Previous studies however, failed to examine a possible influence of companies' variables in predicting the probability (likelihood) of environmental qualitative information disclosure. Furthermore, with the increase in knowledge and interest of researchers to explain dichotomous variables and the consistent use of the traditionally approaches to answer and test research questions and hypotheses with either the ordinary least squares (OLS) or binary regression or linear discriminant function analysis as observed from reviewed studies. These techniques have been subsequently found to be less than ideal for handling dichotomous outcomes due to their strict statistical assumptions, i.e., linearity, normality, and continuity for OLS regression and multivariate normality with equal variances and covariance for discriminant analysis (Gujarati *et al.,* 2012). This study employed the

binomial logistic regression (linear probability model-LPM) to fill the observed weaknesses from previous literature by examining the likelihood of the identified variables to explain environmental information disclosure likehood. To the best of our knowledge, these observed gaps have not been given adequate attention by studies from Nigeria. Hence, the study distinguishes itself from previous studies in these aspects.

METHODOLOGY:

Research Design

The study employed the ex-post facto research design. The study is longitudinal and will cover a six year period, 2012 to 2017, involving listed 21 consumer and 14 industrial companies in the Nigerian Stock Exchange. The rationale for the choice of the listed firms for a study of this magnitude is because they contribute to national growth and development and command massive followership than non-listed firms due to the size of stakeholders. This study will use panel data.

The sample size observations are derived from Tabachnick & Fidell, (2007) formula stated as: $n \geq 50+8m$. Where, n=sample size or observations; 50 and 8 are constant or fixed factors; m= number of predictors (explanatory variables) in a regression model, that is, 5 (we have, board size, return on asset, industry type, ownership structure and leverage). $n \geq 50+8(5) = 50+40 = 90$. We have ninety observations, it implies that our observations should not be less than 90 data points but it can be more than 90 observations or data points in order to have a good-fit model result. The non-probability sampling technique (judgemental) was used in selecting 12 twelve consumer and 10 industrial goods listed companies from the thirty-five (35) selected listed companies to form the sample size of 22 selected listed companies based on market capita-lisation and availability of complete audited annual accounts for the period of six years (2012-2017). This is to ensure that company listed on the two sectors are closely related. A total of one hundred and thirty-two observations (132) were studied. The study used classification table, pie-charts and binomial/binary logistic regression (linear probability model-LPM) to analyse the data. Some conventional diagnostic tests such as Hosmer and Lemeshow Test (Data-fit model prediction), Omnibus Tests (Significance of Model Coefficients), Box & Twidell, (1962) test (linearity assumption test between continuous predictors and the logit (log odds) by using model interaction was equally conducted to address some basic underlying regression analysis assumptions. In logistic regression, the odds ratio represent the constant effect of predictor X on the likelihood that one outcome will occur. The analyses wasper formed via SPSS version-23. Our data conformed to the basic underlying assumptions of binomial/ binary logistic regression analysis. The decision was based on 5% level of significance. Accept (H_o) if probability value (i.e. p-value) is greater than or equals to stated 5%; otherwise reject and accept (H_a) if p value or sig calculated is less than 5%. Model specification for company attributes and environmental qualitative information disclosure among Nigeria listed industrial and consumer goods companies was based on linear probability model-LPM: The empirical approach used to analyse the effect of companies' attributes on probability (likelihood) of environmental information disclosure is based on binary choice models which describe the probability of disclosing environmental qualitative information between two mutually exclusive alternatives (disclosure (**1**) and non-disclosure (**0**))

ENVID = f(Company Specific Characteristics [CSC]) ….. ***eqn3.1.1***

Eqn.3.5.1 is functional or notational form.

Introduce the measured or observed variables for both exogenous and endogenous variables.

$ENVID_{it} = f(CSC\text{-}ROA_{it}, OWNS_{it}, BZ_{it}, IT_{it})$… ***eqn3.1.2***

Equations 3.1.1 to 3.1.2 are deterministic model for each research objectives:

$ENVID_{it} = \gamma_0+\beta_1 ROA_{it}+\beta_2 OWNS_{it}+\beta_3 BZ_{it}+\beta_4 IT_{it}$ ……. …. ***eqn 3.1.3***

Equations 3.1.4 are binomial logistic regression (linear probability model-LPM): $\ln(ODDS)_{ENVIDit} = \gamma_0+\beta_1 ROA_{it}+\beta_2 OWNS_{it}+\beta_3 BZ_{it}+\beta_4 IT_{it}$ ……. ***eqn 3.1.4***

Table 1: Operationalization of Variables.

SN	Names	Type/code	Measurement(s)	Apriori Sign
1.	Environmental qualitative information disclosure.	ENQID-observed dependent	"1" denotes disclosed and "0" denotes otherwise.	nil

2.	**Companies' Specific Characteristics**	**CSC-Exogenous (latent)**	**OWNS, BZ, ROA, IT**	**NA**
3.	Ownership structure	OWNS-Independent [observed]	Directors' interest÷ total shareholders' interests	+
4.	Board size	BZ-Independent [observed]	Total number of directors on the companies' board.	–
5.	Industry type	IT- dichotomous	NSE classification	NA
6.	Return on Asset	ROA-independent [observed]	EBITAD/Total Asset	NA
7.	γ_{1-5} gamma	fixed/Constant term	Parameter	NA
8.	β_{1-20}-beta	Regression coefficients	Parameters	NA
11.	t-time	Years	Parameters	NA
12.	i-individual companies in samples	Number of companies	Parameters	NA
13.	Ÿ-Error term	Stochastic random	Parameters	NA

Source: Researcher's Compilation, 2019.

Data Presentation and Analysis

Table 2: Classification Table of Board Size, Return on Asset, Industry type and ownership structure's Prediction on Environmental qualitative information disclosure.

Observed	**Predicted**		
	Environmental qualitative information disclosure		**Percentage (%) Correct**
	Undisclosed	**Disclosed**	
Undisclosed	16	31	34.0
Disclosed	10	75	88.2
Overall Percentage	Nil	Nil	**91/132= 68.94**
Intercept/Constant	Nil	Nil	64.4
Predictions	**Fractions**	**Percentages (%)**	**Probability**
Sensitivity	75/85	88.24	0.8824
Specificity	16/47	34.04	0.3404
False Positive	31/106	29.25	0.7813
False Negative	10/26	38.46	0.3846

Source: Researcher's computation via SPSS version-23.

Table 2 is classification table shows us that 0.5 allows us to correctly classify 75/85 = 88.2% of the subjects where the predicted event (deciding to disclose) was observed.

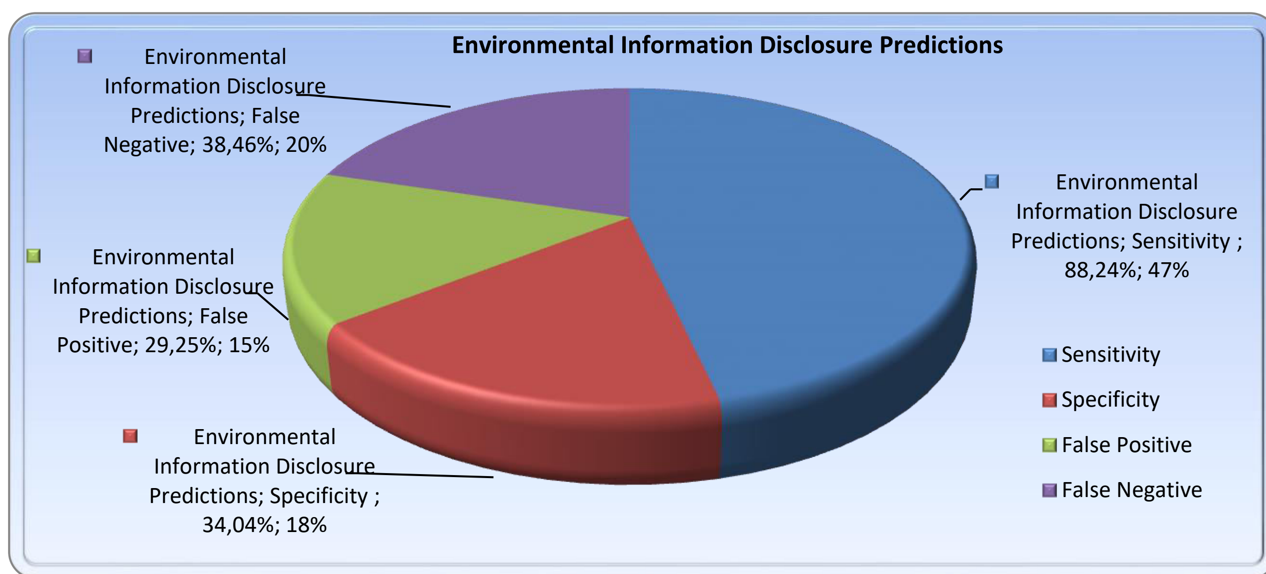

Fig. 1: Pie-Chart for Environmental qualitative information disclosure Prediction from Board Size, Return on Asset, Industry type and Firms' Sizes (Source: Researcher's design via Microsoft Excel-2012).

This is known as the sensitivity of prediction, the P (correct event did occur-disclosed), that is, the percentage of occurrences correctly predicted. We also see that 0.5 allows us to correctly classify 16/47 = 34% of the subjects where the predicted event was not observed. This is known as the specificity of prediction, the P (correct event did not occur-undisclosed), that is, the percentage of non-occurrences correctly predicted. Overall our predictions were correct 91 out of 132 times, for an overall success rate of 68.94%. It was only 64.4% for model with intercept only. Determination of error rates in classification. A false positive would be predicting that the event would occur when, in fact, it did not. Our decision rule (0.5) predicted a decision to disclose 106 times. That prediction was wrong 31 times, for a false positive rate of 31/106 = 29.25%. A false negative would be predicting that the event would not occur when, in fact, it did occur. Our decision rule (0.5) predicted a decision not to disclose (undisclosed) 26 times. That prediction was wrong 10 times, for a false negative rate of 10/26 = 38.46%. **Fig. 1** illustrated the information in pie-chart form.

Answers to Research Questions

What is the joint prediction of return on asset, board size, industry type and ownership structure on the likelihood (probability) of environmental information disclosure of listed consumer and industrial goods companies in Nigeria?

Table 3: Model Summary of return on asset, board size, industry type and ownership structure combined effect on environmental qualitative information disclosure of listed consumer and industrial goods companies in Nigeria [2012-2017].

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
153.614	.129	.178

Source: Researcher's computation via SPSS version-23.

Table 3 shows Binomial logistic regression result of **Cox-Snell R^2** and **Nagelkerke R^2** values, which are methods of computing the likelihood or probability of dichotomous variable. These values are referred to as ***pseudo*** R^2 values. The explained variation in the likelihood of environmental information disclosure is based on our model ranges from 12.9% to 17.8%; that is, Cox & Snell R^2 or Nagelkerke R^2 methods, respectively. Our result is based on Nagelkerke R^2. This implied that return on asset, (ROA) board size (BZ), industry type (IT) and ownership structure (OWNS) had jointly accounted for 17.8% probability of environmental information disclosure (EVND). Can we conclude that return on assets, board size, industry type (IT) and ownership structure had not significantly predicted the likelihood (probability) of environmental information disclosure? This impelled us to test of hypotheses.

Test of Hypotheses

The joint prediction of return on asset, board size, industry type and ownership structure on the probability of environmental information disclosure of listed consumer and industrial goods companies in Nigeria is not significant.

Table 4: Model Prediction of environmental information disclosure from return on asset, board size, industry type and ownership structure of listed consumer and industrial goods companies in Nigeria [2012-2017].

Variables	Exp(β)/ [β]	Sig.	Nagelkerke R^2	% classified correctly	χ2	df.	Sig.	Remarks
Model			17.8%	68.94%	18.281	4	.001	Accept H_a
H & L					4.245	8	.834	Model fit perfect
Interaction								Partial violation
ROA	281.71[5.64]	.100						insignificant
BZ	43.07 [3.76]	.048						significant
OWN	.069 [-2.67]	.179						insignificant
IT(1)	0.84[-.84]	.672						insignificant

Source: Researcher's computation via SPSS version-23.

Table 4 shows Binomial logistic regression result of **Nagelkerke R^2** values, which explained variation in the likelihood of dependent variable. **Table 4** indicates that there is partial violation of linearity assumption and the data perfectly fit the model prediction [$\chi 2$ (8) =4.245; p=.834] (Hosmer & Lemeshow test). The explained variation in the probability of dependent variable 17.8%; that is, our model explained 17.8 % (Nagelkerke R^2) of the variance in the likelihood of environmental information disclosure and correctly classified 68.94%). Furthermore, the odds ratio (EXP B) of Return on Asset shows 281.7 which means for every one unit increase in return on assets, there is a 281 times more likelihood of environmental information disclosure to be reported. The odds ratio (EXP B) of Ownership structure show 0.069, this means that for every additional increase in the number of directors, there is 31% less likelihood of environmental disclosure reporting. Furthermore, the odds ratio of board size is 43.06 signifying that for an additional increase in the total number of directors on the companies' board, there is 43%more likelihood of environmental information to be reported. Finally, the odds ratio of Industry type (consumer goods) indicates that consumer goods companies are 16% less likely to report environmental information. The binomial logistic regression model was statistically significant, [$\chi 2$ (4) =18.281, p< .05]. Increasing in board size (BZ) was associated with significant increase in likelihood of disclosing environmental qualitative information; but increase in return on asset (ROA) and ownership structure (OWNS) was associated with insignificant reduction in likelihood of disclosing environmental qualitative information. Based on the analysis conducted we accept alternate hypothesis (H_a) and reject the null hypothesis (H_0) and conclude that return on assets, board size, industry type and ownership structure had significantly predicted the likelihood or probability of environmental qualitative information disclosure of listed consumer and industrial goods companies in Nigeria.

DISCUSSION:

The companies' attributes showed varying result in relation to their respective influence on the likelihood or probability of environmental information disclosure; board size had significant influence on the probability (likelihood) of environmental information disclosure; this result cannot be corroborated or refuted by previous studies because the precious studies measure extent or relationship between firms' attributes and environmental disclosure. While return on assets, ownership structure and industry type showed insignificant effect on the probability (likelihood) of environmental information disclosure of Nigeria listed industrial and consumer goods companies under the period studied or covered.

The influence of return on assets on the probability of environmental information disclosure is an indication that consumer and industrial goods companies disclose less information with lower ROA which is also an indication of low efficiency by management as a result of reduced incentive from a financial performance perspective. The results of board size return on asset, industry type and ownership structure significantly and jointly predicted the likelihood of environmental information disclosure of the studied listed Nigeria consumer and industrial goods companies.

CONCLUSION AND RECOMMENDATIONS:

This study investigated the effect of companies' attributes on environmental information disclosure of listed industrial goods and consumer goods in Nigeria. The following conclusions were reached; company characteristics surrogated by profitability (return on assets), board size, and ownership structure and industry type significantly predict the likelihood of environmental information disclosure of the selected studied companies. These Firms also showed an improved financial performance than those who do not disclose their environmental information. The information on environmental disclosure is not exhaustive as most observed Firms did not include environmental litigation disclosure as such information was not readily available in their annual report. Also, there was a significant prediction of board size on the likelihood of environmental information disclosure of these companies, indicating that environmental information has a great impact on today's customer and legitimacy based economy thereby improving the competitive advantage of these companies.

1) Listed companies should be encouraged to disclose more environmental qualitative inform-

ation related issues due to the inherent advantages therein and this will reduce huge risk of losing patronage of ethical stakeholders and host community grievances and companies will be seen as environmentally friendly firms this will influence performance at the long run.

2) The national accounting standards setters and stock exchange bodies in Africa countries should issue mandatory non-financial information disclosure standards that will be adhere to and suitable for Africa business environment this will guarantee measurement, recognition and comparison.

Contribution to Knowledge

This study investigated the effect of companies' attributes on the likelihood of environmental qualitative information disclosure of Nigeria listed consumer and Industrial goods. Previous studies investigated the contribution of single variables of firm attributes to explain Non-financial Information disclosure. The exceptionality of this study is that it combined more than one variable to explain environmental qualitative information disclosure and the statistical technique and methodological approach adopted is robust and appropriate to cross examined research data compare to previous related studies. That is, the study employed the binomial logistic regression (linear probability model approach-LPM) to ascertain the probability of these combined variables to influence the likelihood of environmental information disclosure. The regressors to determine the extent each item explains the probability of environmental qualitative information disclosure (i.e. disclosed or not disclosed).

Suggestions for Further Study

The following suggestions were reached for further study –

1) An introduction of additional economic sectors and variables not studied in this work to ascertain its effect on environmental qualitative information disclosure that will show an exciting result and aid policy makers formulate and implement reliable decisions.
2) A comparison of joint effect of companies' attributes on environmental information disclosur of different economy sectors in different countries can be conducted.

ACKNOWLEDGEMENT:

This work was carried out in collaboration between all authors; they designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript, managed the analyses of the study and the literature search.

CONFLICTS OF INTEREST:

Authors read and approved the final manuscript for publication.

REFERENCES:

1) Adesina, O. T., Ikhu-Omoregbe, S., & Olaleye, M. O. (2015). Disclosure, financial accounting information and corporate governance in listed companies in Nigeria. *Finance, Economics and Applied Research J.,* **2**(3), 1-12
2) Akbaş, H.E. (2014). Company characteristics and environmental disclosure: An empirical investigation on companies listed on Borsa Istanbul. *The J. of Acc and Fin,* **2**(2), 145-164. https://search.trdizin.gov.tr/yayin/detay/170055/
3) Ali, S. M., & Isa, M. A. (2018). Firms attributes and corporate social responsibility disclosure: A literature review. *Inter J. of Academic Research in Business & Social Sciences,* **8**(4), 312-325.
4) Amaeshi, K., Adi, B., & Amao, O. (2016). Corporate social responsibility in Nigeria: Western mimicry or indigenous influences? No. 39-2006, ICCSR Research Paper Series. *The University of Nottingham*, 1- 44.
5) Andrikopoulos, A., & Kriklani, N. (2013). Environmental disclosure and financial characteristics of the firm: The case of Denmark. *Corporate Social Responsibility and Environmental Management,* **20**(1), 55-64. https://doi.org/10.1002/csr.1281
6) Asemah, E.S., Okpanachi, R.A., & Olumuji, E. O. (2013). Communicating corporate social responsibility performance of organisations: A key to winning stakeholders' goodwill. *Inter J. of Arts and Humanities,* **2**(3).
7) Barako, D.G. (2007). Determinants of voluntary disclosures in Kenyan company's annual reports. *African J. of Business Management,* **1**(5), 113-128.
8) Bos, A. de, Coebergh, H.P.T., & Olden, H. van (2008). Rules for the future - Opportunities for

sustainable entrepreneurship in the Netherlands, Schiedam, Scriptum.

9) Bose, S., Saha, A., Khan, H. Z., & Islam, S. (2017). Non-financial disclosure and market-based firm performance: The initiation of financial inclusion. *J. of Contemporary Accounting & Economics,* **12**, 1-50. https://doi.org/10.1016/j.jcae.2017.09.006
10) Bowen, D.E. (2009). Accounting for the environment. *Paul Chapman Publishing London*.
11) Carroll, A.B. (1999). Corporate social responsibility: Evolution of a definitional construct. *Business and Society*, **38**, 268 - 295.
12) Chan, C.C., & Welford, M. (2005). Investor's reactions to corporate environmental saints and sinners: An experimental analysis. *Accounting & Business Research,* **24**(4), 265-279. https://doi.org/10.1080/00014788.1999.9729588
13) Clark, J. M. (1916). The changing basis of economic responsibility. *J. of Political Economy,* **24**(3), 209-229.
14) Clarkson, M.B.E. (1995). A Stakeholder framework for analyzing and evaluating corporate social performance. *Academy of Management Review,* **20**(1), 92-117.
15) Dodd, E. (1932). For whom are corporate managers trustees? *Harvard Law Review,* **45**(7), 1145–1163.
16) Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence and implications. *Academy of Management Review,* **20**(1), 65-91.
17) Eccles, R. G., & Krzus, M. P. (2009). One report: Integrated reporting for a sustainable strategy. *Hoboken, N.J.: John Wiley & Sons*. https://www.amazon.com/One-Report-Intgra ted-Reporting-Sustainable/dp/0470587512
18) Eccles, R. G., Serafein, G., & Consulting, M. K. (2011). Market interest in non-financial information. *J. of Applied Corporate Finance*, **23**(4), 113–128.
19) Egbunike, A.P., & Tarilaye, N. (2017). Firm's specific attributes and voluntary environmental disclosure in Nigeria: Evidence from listed manufacturing companies. *Academy of Accounting and Financial Studies J.,* **21**(3), 1-9.
20) Enthoven, A.J.H. (1985). Accounting in developing countries. *Comparative Inter Accounting*, **6**(7), 217-237
21) Ernst & Young. (2017). Is your non-financial performance revealing the true value of your business to investors? Tomorrow´s investment rules 2017. https://www.ey.com/gl/en/services/assurance/climate-change-and-sustainability-services/ey-non-financial-performance-may-influence-investors
22) Financial Accounting Standards Board (FASB), (2000). *Conceptual framework.*
23) Flack, T., & Douglas, E. (2007). The role of annual reports in a system of accountability for public fundraising charities. (Unpublished PhD Dissertation). *Queensland University of Tech.*
24) Freeman, R. E., Wicks, A. C. and Parmar, B. (2004). Stakeholder theory and the corporate objective revisited. *Orga. Sci.,* **15**(3), 364- 369.
25) Freeman, R.E., & Reed, D.E. (1983). Stockholders and shareholders: A new perspective on corporate governance. *Cali Man Rev,* **25**(3), 93-94. https://doi.org/10.2307/41165018
26) Ghasempour, A., & Md Yusof M.A. (2014). The effect of fundamental determinants on voluntary disclosure of financial and non-financial information: The case of internet reporting on the Tehran stock exchange. *The Interl J. of Digital Accounting Research,* **14**(3), 37-56
27) Gillan, S.L., & Starks, L.T. (2000). Corporate governance proposals and shareholder activism: The role of institutional investors. *J. of Financial Economics,* **57**(2), 275-305. https://doi.org/10.1016/S0304-405X(00)00058-1
28) Graham, J. R. *et al*., (2005). The economic implications of corporate financial reporting. *J. of Accounting and Economics,* **40**(1-3), 3-73.
29) Gray, R., & Collision, D. (2002). Can't see the wood for the trees, can't see the trees for the numbers? *Critical Perspectives on Accounting,* **13**, 5-6. https://doi.org/10.1006/cpac.2002.0554
30) Guidry, R.P., & Pattern, D. (2019). Market reactions to the first-time issuance of corporate sustainability reports: Evidence that quality matters. *Sustainability Accounting, Management and Policy J.,* **1**(1), 33-50. https://doi.org/10.1108/20408021011059214

31) Gujarati D. N., Porter C. D., & Gunasekar, S. (2012). Basic Econometrics (5th ed). *New Delhi, Tata McGraw-Hill Education Private Limited*.
32) Hassan, O., & Marston, C. (2010). Disclosure measurement in the empirical accounting literature: A review article. *Woking paper no. 10-18. Brunel University*. http://bura.brunel.ac.uk/bitstream
33) Hassan, O.A.G., Giorgioni, G., & Power, D. (2009). The value relevance of disclosure: Evidence from the emerging capital market of Egypt. *The Inter J. of Accounting,* **44**(1), 79-102. https://doi.org/10.1016/j.intacc.2008.12.005
34) Healy, P.M., & Palepu, K. J. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *J. of Accounting and Economics,* **3**(31), 405 - 440.
35) Hieu, P.D., & Lan, D. T. H. (2015). Factors influencing the voluntary disclosure of Vietnamese listed companies. *J. of Modern Accounting and Auditing,* **11**(12), 656-676.
36) IASB. (2015). Conceptual Framework for Financial Reporting - Exposure Draft ED/2015/3. ed. *IFRS Foundation. Author*.
37) Islam MJ. (2020). Sustainability reporting of banking companies in Bangladesh: a study on environmental aspect, *Can J Bus Inf Stud*., **2**(2), 35-44. https://doi.org/10.34104/cjbis.020.035044
38) Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *J. of Financial Economics,* **3**(4), 305-360.
39) Khales, S., Khilif, H., & Hussainey, K. (2015). The impact of board and audit committee characteristics on voluntary disclosure: A meta-analysis. *J. of Inter accounting, Auditing and Taxation,* **24**, 13-28. https://doi.org/10.1016/j.intaccaudtax.2014.11.001
40) Kiel, G.C., & Nicholson, G.J. (2003). Board composition and corporate performance: How the Australian experience informs contrasting theories of corporate governance. *Corporate Governance & Inter Review*, **11**(3), 189 - 205.
41) Lamberton. G. (2009). Sustainability accounting-a brief history and conceptual framework. *Accounting J.,* **22**(7), 1029-1054.
42) Learmount, S. (2002). Theorizing corporate governance. *New organizational alternatives*.
43) Maroun, W. (2017). Assuring the integrated report: Insights and recommendations from auditors and preparers. *The British Accounting Review,* **49**, 329 - 46. https://doi.org/10.1016/j.bar.2017.03.003
44) Meek, G.K., Roberts, C.B., & Gray, S. (1995). Factors influencing voluntary annual report disclosures by US, UK and continental European multinational corporations. *J. of Inter Business Studies*, **26**(3), 555-572.
45) Mitchell, R., Agle, B. R., & Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: Defining the principles of who and what really counts. *Academy of Management Review*. **22**(4), 853-886.
46) Nassreddine, G. (2016). Determinants of financial information disclosure: A visualization test by cognitive mapping technique. *J. of Economics, Finance and Administrative Science,* **21**(2), 8 - 13.
47) Ndukwe, O.D., & Onwuchekwa, J.C. (2015). Determinants of environmental disclosures in Nigeria: A case study of oil and gas companies. *Inter J. of Finance & Accounting,* **4**(3), 145 - 152. https://doi.org/10.5923/j.ijfa.20150403.01
48) Nyahas, S.L., Ntayi, J.M., Kamukama, N., & Munene, J. (2018). Stakeholders influence on voluntary disclosure practices by listed companies in Nigeria: An investigation of managers' perception. *Inter J. of Law and Management,* **60**(2), 267-283.
49) Okoye, Ebubechukkwu, J., and Agweda, F. (2016). Effect of non-disclosure of environment cost on the performance of selected firm listed on NSE. *Proceedings of 2016 Inter Conference of the Faculty of Management Sciences, Nnamdi Azikiwe University, Awka*.
50) Oluwagbemiga, O.E. (2014). The use of voluntary disclosure in determining the quality of financial statements: evidence from the Nigeria listed companies. *Serbian J. of Management,* **9**(2), 263 - 280. https://doi.org/10.5937/sjm9-5784
51) Omoye, A.S. & Wilson-Oshilim, U.D. (2018). Antecedents of environmental disclosure in

Nigeria *International Accounting & Taxation Research,* **2**(2), 101-116.

52) Osisioma, B.C. (2001). Fine tuning corporate reporting task for accountants, *J. of the Certified National Accountants*, **9**(2), 40 - 55.
53) Oti, P.A., & Mbu-Ogar, G.B. (2018). Analysis of environmental and social disclosure and financial performance of selected quoted oil and gas companies in Nigeria (2012-2016). *J. of Accounting & Financial Management,* **4**(2), 1-12. http://gja.unilag.edu.ng/article/view/1203
54) Owolabi, F., Akinwumi, T., & Uwuigbe, U. (2016). Assessment of sustainability reporting in Nigerian industrial goods sector [Conference session]. 3rd International Conference on African Development Issues. *Covenant University Press*, 383-386.
55) Padilla, A. (2002). Can agency theory justify the regulation of insider trading? *Quarterly J. of Austrian Economics*, **5**(1), 3 - 38.
56) Rahim, A., Atan, R., & Amrizah, K. (2011). Intellectual capital reporting in Malaysian technology industry. *Asian J. of Accounting and Governance*, **59**, 51–59. https://doi.org/10.17576/ajag-2011-2-6541
57) Sani, M. D. (2018). Mandatory social and envi ronmental disclosure: A performance evaluation of listed Nigerian oil and gas companies pre and post-mandatory disclosure requirements. *J. of Finance and Accounting*, **6**(2), 56 - 68.
57) Serrasqueiro, R.M., & Mineiro, T.S. (2018). Corporate risk reporting: Analysis of risk disclosures in the interim reports of public Portuguese non-financial companies. *Accounting and Administration,* **63**(2), 1-23.
58) Shiri, M., Salehi, M., & Radbon, A. (2016). A study of impact of ownership structure and disclosure quality on information asymmetry in Iran. *Vikalpa*, **41**(1), 51–60. https://doi.org/10.1177/0256090915620876
59) Sierra-Garcia, L., Garcia-Benau, M.A., and Bollas-Araya, H.M. (2018). Empirical analysis of non-financial reporting by Spanish companies. *Admin Science,* **8**(29), 1-17.
60) Street, D. L., & Shaughnessy, K. A. (1998). The quest for international accounting harmonization: A review of the standard setting agendas of the IASC, US, UK, Canada, and Australia, 1973 - 1997. *The Inter J. of Accounting,* **33**(2), 179 - 209.
61) Tabachnick, B.G. & Fidell, L.S. (2007). Using multivariate statistics (5th ed). *Boston, MA: Allyn and Bacon*.
62) Taposh, K.N. (2014). Evaluation of efficiency of accounting information systems: A study on mobile telecommunication companies in Bangladesh. *Global Disclosure of Economics and Business,* **3**(1), 40-55.
63) Umoren, A. O. (2009). Accounting disclosure and corporate attribute (Unpublished Master Thesis). *Covenant University, Ota, Nigeria*. https://doi.org/10.12691/jfa-5-2-3
64) Uyar, A. (2011). Firm characteristics and voluntary disclosure of graphs in annual reports of Turkish Listed Companies. *African J. of Business Management,* **5**(17), 7651 - 7657.
65) Vives, X. (2007). Information sharing: Economics and distrust. *Working paper, Barcelona, University of Navarra.*
66) Yi, A., Davey, H., & Eggleton, I.R.C. (2011). Towards a comprehensive theoretical framework for voluntary IC disclosure. *J. of Intellectual Capital,* **12**(4), 571 - 585. https://doi.org/10.4236/jis.2012.34036
67) Zarzeski, M. T. (1996). Spontaneous harmonization effects of culture and market forces on accounting disclosure practices. *Accounting Horizons,* **10**, 18 - 37. https://www.proquest.com/docview/208914833

Citation: Onyinye ME, Atinuke AA, Favour AO, and Daniel JCA. (2022). Nigeria listed companies' attributes and environmental information disclosures, *Int. J. Manag. Account.* **4**(6), 117-132. https://doi.org/10.34104/ijma.022.001170132