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CORPORATE SUSTAINABILITY REPORTING AND FINANCIAL PERFORMANCE OF LISTED MANUFACTURING COMPANIES IN NIGERIA

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ABSTRACT

We examined the effect of corporate sustainability reporting on financial performance in Nigeria employing samples from manufacturing firms that are listed on the floor of the Nigerian Exchange Group for the period 2012-2021. In this study, environmental disclosure index, social disclosure index and governance disclosure index are the corporate sustainability reporting employed to examine their effect on financial performance. Financial performance is measured in terms of return on asset. Furthermore, in line with related extant literature, we adopted earnings per share as the control variable. A critical examination of all the diagnostic tests revealed that the model failed the normality assumption of the OLS estimates. However, we carefully interpreted the p-value of the fixed effect regression since the Hausman test had recommended fixed effect regression as the most appropriate over random effects. We concluded that only the variable of governance disclosure appears to significantly affect the financial performance of listed manufacturing firms in Nigeria. However, we documented an insignificant positive effect of environmental and social sustainability on the financial performance of listed manufacturing firms in Nigeria. Following the findings of this study, we recommended that valuable financial, material, and human resources should be channeled on policies that relate to improving governance sustainability if the desire is to gain improved return on asset or improved firm value.

KEYWORDS: **Environmental Sustainability, Social Sustainability, Governance Sustainability, Return on Asset, Panel Regression**

1.0 Introduction

The objective of any organization is to consistently grow and survive on a long-term basis. Most managers are also aware that their organizations are part of a large system which has profound direct and indirect influence on their operations. This implies that if these organizations must effectively and efficiently meet their objectives, they should properly adapt themselves to their environments (Baboukardos & Rimmel 2016). Adapting organizations (especially firms) to their environments signifies a reciprocal or symbiotic relationship between the 'duos' as typified by systems model of viewing business. Considering the current environmental crisis, businesses must give more to their environment. In 2011, the International Federation of Accountants (IFAC) developed a sustainability framework, enabling business organizations to incorporate sustainability issues in their business approach, process, and reporting practices. The reporting aspect of IFAC's sustainability framework involves providing audit and assurance on sustainability performance to enhance the credibility of sustainability reports, incorporating sustainability impacts in financial statements, and employing narrative reporting to capture sustainability information not included in financial statements.

There is continuing concern about nature fragmentation and loss of biodiversity, shortages in freshwater availability, over-fishing of the seas, global warming, extreme weather events, air pollution, water pollution, environmental noise and utter neglect and disregard for the protection of the immediate environment, much more the future environment. This type of environmental unsustainability associated with continuously rising demand and a shrinking resource base now spills over into social and economic instability. Therefore, many are looking to business to be part of the solutions. For instance, Welford (2004) maintains that business seems content to see the natural system on the planet disintegrating, people starving and social structures falling apart. Business is central to the problem and must be central to the solution. Indeed, the expectations of corporate responsibility in areas such as environmental protection, human rights, human capital, and product safety are rising rapidly. Key stakeholders such as shareholders, employees, and financial institutions want business to be responsible, accountable, and transparent. Unerman, Bebbington and O'Dwyer (2007) on the other hand states that human activities taking place today are regarded by some people as having a detrimental impact on the society, ecology, and economy which future generations will experience.

Many people argue that the growing social injustice experienced by ever larger numbers of people, and the growing damage to the ecosphere, are a result of a dominant – and almost unquestioned – objective of maximizing economic growth. In these terms economic growth (characterized by energy and material-intensive production and exploitative social relations) is socially and environmentally unsustainable. (Unerman et al, 2007). In the view of Hu, Du and Zhang (2020) responding to these issues by business leaders help companies to mitigate risks, protect corporate brand and gain competitive advantage while helping to reduce poverty and improve the quality of life for many. In some extreme cases, companies may see their licenses to operate threatened overnight if their key stakeholders perceived significant discrepancies between their own and the company's values. Unerman et al (2007) maintains that one way to look at these issues is in terms of long-term need to ensure that economic activity is socially and environmentally sustainable. In the short-term it may be possible to have economic growth, while damaging society and the environment. In the long-term this is impossible. For example, businesses need a stable society in which to operate profitably (although some business might generate profit from addressing the outcomes of social conflicts, such as businesses offering security service).

People all over the world are expressing considerable concern for damage to the environment by companies and its effects on their lives. There has been call concerning environmental degradation for firms to engage in activities in sustainable and responsible manner. Unfortunately, Adegboyegun, Alade, Ben-Caleb, Ademola, Eluyela,and Oladipo (2020) observed that such call were not really heard as information about the sustainability are not really been captured in the annual reports of some firms which then makes them not accountable to their immediate environment. Nevertheless, there is now an increasing awareness that companies should be made responsible for consequential environmental and social impact of their activities to the host communities and other stakeholders. The increased awareness put pressure on companies to reassure the public of their good behaviour. As a result, companies are no longer paying attention to the maximization of shareholders wealth alone but are now embracing activities that tend to maximize the benefits accruable to all the stakeholders.

Presently, there is increase in number of firms providing sustainability information. This led to a considerable number of research on different aspect of sustainability reporting. Some extant studies focus on determinants influencing sustainability disclosures in firms (Sharma, Panday & Dangwal, 2020; Vitolla, Raimo, Rubino & Garzoni, 2020; Dyduch & Krasodomska, 2017; Kuzey & Uyar, 2017; Giannarakis, 2014; Hahn & Kühnen, 2013). Others focused on value relevance of sustainability disclosures (Aureli, Gigli, Medei & Supino, 2020; Cordazzo, Bini & Marzo, 2020; Baboukardos & Rimmel, 2016; Ntim, Opong & Danbolt, 2012). Another category of research on sustainability reporting are those that examined the link between sustainability disclosures and firm performance. This study relates closely to this last category of research. Existing research on effect of sustainability reporting and firm performance produce conflicting views. For instance, Albitar, Hussainey, Kolade and Gerged, (2020); Hongming, Ahmed, Hussain, Rehman, Ullah and Khan (2020); Emeka-Nwokeji and Osisioma (2019); Amran and Siti-Nabiha (2022) Guthrie, Cuganesan and Ward (2016); Ifurueze, Lydon and Bingilar (2013) and Menassa (2010) document positive association between different measures of sustainability, social and environmental disclosures, and performance of firms in different countries. On the other hand, Ezejiofor, Rachael and Chigbo (2016); Dibua and Onwuchekwa (2015); Emeakponuzo and Udih (2015); Bessong and Tapang (2016), established a negative but insignificant link between sustainability disclosures and firm performance. In the light of these contradictory results of existing literature, inability to obtain updated knowledge from Nigerian environment, this study is therefore set to find out the effect of corporate sustainability reporting on firm performance of listed companies in Nigeria. The study intends to provide up to date knowledge by providing evidence from sectors that previous Nigerian authors did not consider.

2.0 Literature and Conceptual Framework

Firm Performance

The subject of firm performance has received significant attention from scholars in the various areas of business and strategic management (Jat, 2006). It has also been the primary concern of business practitioners (managers and entrepreneurs in all types of organizations because corporate performance is essential as exemplified in high performance organizations which are success stories because of their perceived effectiveness and efficiency in managing their operations and their positive contributions to the well-being of their stakeholders. Whereas low performance organizations are not owing to their lack of such essential attributes (Makhamreh, 2000). Performance is, however, a difficult concept, in terms of definition and measurement. It has been defined as the end result of activity, and the appropriate measure selected to assess corporate performance is considered to depend on the type of organization to be evaluated and the objectives to be achieved through that evaluation (Hunger & Wheelan, 1997 in Jat, 2006).

Corporate Sustainability Reporting

There is no single, generally accepted definition of sustainability reporting. It is a broad term generally used to describe a company's reporting on its economic, environmental, and social performance. It can be synonymous with triple bottom line reporting, corporate responsibility reporting and sustainable development reporting, but increasingly these terms are becoming more specific in meaning and therefore subsets of Sustainability Reporting (KPMG, 2008). Schaltegger (2004) defines Sustainability Reporting as a subset of accounting and reporting that deals with activities, methods, and systems to record, analyses and report, firstly, environmentally, and socially induced financial impacts and secondly, ecological, and social impacts of a defined economic system (example, a company, production site, and nation). Thirdly, Sustainability Reporting deals with the measurement, analysis and communication of interactions and links between social, environmental, and economic issues constituting the three dimensions of sustainability. Sustainability Reporting is becoming more prevalent, driven by a growing recognition that sustainability related issues can materially affect a company's performance, demands from various stakeholder groups for increased levels of transparency and disclosure and the need for companies (and the business community more generally) to appropriately respond to issues of sustainable development (KPMG 2008, Ivan, 2009).

Environmental Sustainability Reporting

Environmental reports ensure business transparency and create the reputation of a company as a responsible partner that contributes to environmental protection and the quality of life of the local community. They are considered to be responsible business practices that demonstrate company's commitment to solving environmental issues. Environmental reporting is a contemporary management tool that companies can use to provide information to external stakeholders and to find opportunities to improve internal processes, gain benefits and ensure its own sustainability. Environmental reports enable greater distinction of companies in terms of environmental risk, which is the purpose sought by the business community; and (b) adequate accountability to the community, which is the purpose sought by the regulating entities, non-government organizations, and by society (Borges and Bergamini, 2001). Companies report environmental information to respond to stakeholder expectations and contribute to the welfare of society (Morsing and Schultz, 2006), to manage their own legitimacy (Reverte, 2009), to preserve their reputation (Reynolds and Yuthas, 2008), and to make profit and in the long run reduce information asymmetry (Merkl-Davies and Brennan, 2007; Du, 2010). Environmental reporting is an important part of sustainability reporting which instills discipline and helps a company think about and define its long-term while raising awareness of sustainable practices in the whole organization (ACCA, 2013). Environmental reports result from the functioning of an internal system which collects, analyzes and processes data on the company's environmental aspects. Hence, it is a systematic and formal approach to addressing environmental impacts and integrating environmental issues into business processes. Hence, the study hypothesizes that;

$H0_1$: Environmental performance index has no significant effect on firm performance of listed manufacturing firms in Nigeria.

Social Sustainability Reporting

Rodriguez and Fernandez (2015) stated that the company's concern increases when it focuses on social issues, while maximizing economic performance in order to satisfy shareholders and undertake social responsibility for the benefit of the society. By revealing the social aspects of sustainability report, company will also support many issues pertaining to the international organization concern. Social responsibility is not only for external, but also for internal stakeholders. The responsibility to the internal side means that the company is required to pay attention to employee health and safety, equality of opportunity in competition between male and female employees, and human rights aspects. Meanwhile, for the external parties, the company is required to promote anti-corruption policies, anti-competitive and monopolistic practices that can harm the stakeholders. Labeling products for the health and safety of customers is also a part of this schedule. According to Ernst & Young (2014) implementation and disclosure of social responsibility towards stakeholders will not only increase the prices of company's stock, it also improves welfare and employee loyalty, lower turnover rate of employees, consequently increasing productivity. When productivity increases, the company may further enhance the image or company's value in the eyes of all stakeholders. However, to obtain a comparable measure across all companies, which will then be useful for mainstream investment analyses, it is important that environmental social and governance information is transformed into consistent units and is presented in a balanced and consistent manner. Hence, the study hypothesizes that;

$H0_2$: Social performance index has no significant effect on firm performance of listed manufacturing firms in Nigeria.

Governance Sustainability Reporting and Firm Performance

A Board of Directors assumes a central role in the governance of the corporation. While there are no universal standards for corporate governance, the board generally assumes three core responsibilities: oversight of strategic direction and risk management, ensuring accountability, and evaluating performance and senior level staffing (Epstein and Roy 2002). Boards must therefore pay close attention to concepts and issues that focus on the long-term health of the corporation, such as sustainable development (Ricart, Rodriguez and Sanchez 2006). Legal liabilities for board members vary by jurisdiction. Although board members are under no specific legal obligation to use sustainable development indicators, they are expected to exercise a duty of care to make decisions; prudently and on an informed basis (Fischer and Feldman 2002). Aras and Crowther (2017) argue that both corporate governance and sustainability is essential for the continuous operation of any corporation therefore much attention should be paid to these concepts and their applications. Hence, the study hypothesizes that;

$H0_3$: Governance performance index has no significant effect on firm performance of listed manufacturing firms in Nigeria.

Theoretical Review

Legitimacy Theory

This study anchors on legitimacy theory propounded by Dowling and Pfeffer in 1975. Legitimacy theory is derived from the concept of organizational legitimacy. It posits that organizations continually seek to ensure that they operate within the bounds and norms of their respective societies. Legitimacy theory has often been invoked to explain corporate reporting practices. In accordance with this theory, external stakeholders require the enterprise to take such actions that will make its operations transparent, in line with the law and the principles of economics. The theory is hinged on the assumption that accounting for sustainable development and the associated role of management accountant in sustainable development is used as a communication mechanism to inform and/or manipulate the perception of the entity's actions (Mistry, Sharma & Low 2014). Among several theories that have explained various factors that influences sustainability disclosure, Legitimacy theory is key to this study because it describes the relationship between a company and the community; it explains companies' motivations for social, governance and environmental disclosures; present how companies can use legitimacy strategies; determine the impacts of social, governance and environmental disclosures on the society. According to Deegan and Unerman (2011) legitimacy theory depends upon the notion that there is a "social contract" between an organization and the society in which it operates. Therefore, corporation try to legitimize their corporate actions by engaging in corporate social responsibility reporting to get the approval from society (societal approach) and thus, ensuring their continued existence. The social contract as explained by Deegan (2002), represents myriad of expectations that society has and about how an organization should conduct its operations. As stated by Deegan and Unerman (2006) the legitimacy perspective focuses on managing the relationship between the organization and society.

2.3 Empirical Review

Swarnapali (2020), used data of companies listed in the Colombo Stock Exchange (CSE) in Sri Lanka to evaluate whether corporate sustainability disclosure has any effect on the market value and earning quality of firm. The result of the study shows that sustainability reporting has a positive relationship with market value of firm. The study also revealed that sustainability disclosure and earnings quality proxies by discretionary accruals are negatively and significantly related meaning that increase in sustainability disclosure led to a decrease in discretionary accruals which result in high-quality earnings.

In a study on whether there is a relationship between sustainable disclosure and performance Pajuelo Moreno and Duarte-Atoche (2019), extended Ullmann's model. The study introduces economic performance, size, and membership in sensitive sectors as determinant of sustainability disclosure and sustainable performance link. Specifically, the study shows those firms that are concerned with sustainability and act sustainably have higher sustainability disclosure in their annual report. Also, the greater the economic performance, the greater the effect it has on sustainability disclosures.

Wasara and Ganda (2019) explored the relationship between corporate sustainability disclosure and return on investment of ten Johannesburg Stock Exchange (JSE)-listed mining companies, for the period 2010 to 2014. Content analysis approach on the data set with a multi-regression analysis was used to show that there is a negative relationship between environmental disclosure and return on investment. On the other hand, the research reveals that there is a positive association between social disclosure and return on investment which implies that an increase in corporate reporting of social issues results in heightened financial performance through an increase in return on investment. The study recommends the adoption of corporate social disclosure since it will encourage firms to be socially responsible, while also generating financial benefits.

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Sampong et al (2018) employed hand collected data of South African listed companies with an application of the GRI G3.1 guidelines, as a measure of disclosure performance to investigate the relationship between the extent of corporate social responsibility (CSR) disclosure performance and firm value. Based on the panel data fixed effect model, the authors document a positive but insignificant relationship between CSR disclosure performance and firm value. Secondly, a negative and insignificant relationship was found between environmental disclosure performance and firm value. Lastly, the authors found a positive and statistically significant relationship between social disclosure performance and firm value. Overall, the findings suggest that CSR disclosure has a limited effect on firm value and that the incorporation of sustainability disclosure, on the basis of GRI, is moderately high among the selected companies. Implications of the results suggest that CSR disclosure may not necessarily influence firm value, despite its numerous benefits.

Mahmood, Kouser, Ali, Zubair, and Salman (2018) concludes that a large board size consisting of a female director and a Corporate Social Responsibility Committee (CSRC) is better able to check and control management decisions regarding sustainability issues (be they economic, environment, or social) hence, better sustainability disclosure. Ordinary least-square regression analysis was used in analyzing the study data set.

The results from the study of Ortas; Alrarez and Zubeitzu (2017) clearly demonstrate that market value of a company and sustainability reporting practices are positively associated for only active sustainability companies. The investigation tends to find out the association between companies' financial factors and corporate sustainability reporting from a sample of 3,931 companies among 51 industries in 59 different countries. The study employed content analysis technique and quantile regression estimation techniques to measure corporate social responsibility based on GRI framework. The study also came up with the result which indicated that firms' financial performance served as a significant driver of corporate sustainability and that the impact of corporate social disclosure on firm performance was significant at upper quantiles of the distribution of the response variable.

Aditya and Juniarti (2016) aim to examine the effect of corporate social responsibility on accrual quality in Indonesia by exploring the topic "Corporate Social Responsibility (CSR) Performance and Accrual Quality. The study employed the ordinary least square regression data analysis technique and found that corporate social responsibility performance does not explain the changes in accrual quality. Hence the study concludes that miscellaneous industry in Indonesia will carry out corporate social responsibility only to comply to government regulation as formality but no moral justification for such action. Furthermore, the study recommends private debt financing for Indonesian firms since private lenders will have easier access to firm's business and financial information, and also have right to monitor management, so that management can't use accrual policy to manage earning.

3.0 Methodology and Model Specification

Ex-post facto research design and the descriptive research design have been employed in this study. The population of this study is made up of all manufacturing companies that are listed on the floor of the Nigerian Exchange Group during a 10year period i.e. between 2012 and 2021. As of 31st December 2021, there were fifty-nine (59) manufacturing companies listed on the floor of the Nigerian Exchange Group Specifically, the sample size of this study is determined using Krejcie and Morgan, (1970) sample size computation technique or approach. Particularly, the final sample size is drawn through a procedure of purposive non-probability sampling technique which takes cognizance of availability and accessibility of relevant information (data) needed for the study. First, the study deselects all firms that joined the Nigerian Exchange Group after year 2012 which connotes the start period for this study. This will be done to ensure a balanced panel data structure via a homogenous periodic scope necessary for the estimation process. We also deselect all firms lacking complete information (in relation to data requirements) needed for the estimation. Hence, the final sample size consists of forty-five (45) listed manufacturing companies. This study employed analytical software of Stata version 16 and Microsoft excel for the analysis. The secondary data collected was analyzed using descriptive statistics, correlation, and regression analysis. The descriptive statistics was used to evaluate the characteristics of the data: mean maximum, minimum, and standard deviation and also check for normality of the data. Correlation analysis was employed to evaluate the association between the variables and to check for multicollinearity. Fixed and random effect regression analysis technique was employed to find the cause effect relationship between the independent variables and the dependent variables. However, this method of analysis helps to establish the relationship between the independent variables and the dependent variable of interest and to identify the direction of the relationship. It reflects the level to which a set of variables is capable of predicting a specific outcome. In order to test the three hypotheses formulated in the study and to achieve the objectives of the research, the following model is formulated.

$$\mathbf{RETA_{it} = b_0 + \beta_1 ENDI_{it} + \beta_2 SOCI_{it} + \beta_3 GODI_{it} + \beta_4 FSIZ_{it} + e_{it}}$$

Where:

RETA	=	Return on Asset
ENDI	=	Environmental Sustainability Disclosure Index
SOCI	=	Social Sustainability Disclosure Index
GODI	=	Governance Sustainability Disclosure Index
FSIZ	=	Firm size
"{i}"	=	Cross Section (Sample Companies)
"t"	=	Time Frame (2011 to 2020)
e_{it}	=	Stochastic error Term

Operationalization of Variables

Variable	Measurement	Sources
Return on Asset (Dependent variable)	Return on Asset is measured as the ratio of Profit after tax to total asset	Ioannou and Serafeim (2015)
Environmental sustainability disclosure (Independent variable).	Measured in line with GRI standard	Lo & Sheu, (2007)
Social sustainability disclosure (Independent variable).	Measured in line with GRI standard	Daniel, Mogaka, Makori, Ambrose and Jagongo,(2013)
Governance sustainability disclosure (Independent variable)	Measured in line with GRI standard	Dobbs and Standa (2016)
Earnings Per Share (Control Variable)	Measured as profit after tax divided by outstanding shares	Dobbs and Standa (2016)

Authors Compilation 2023

4.0 Results and Discussion

In this study, the researcher examines the effect of corporate sustainability reporting on financial performance in Nigeria employing samples from manufacturing firms that are listed on the floor of the Nigerian Exchange Group for the period 2012-2021. In this study, environmental disclosure index, social disclosure index and governance disclosure index are the corporate sustainability reporting employed to examine their effect on financial performance. Financial performance is measured in terms of return on asset. Furthermore, in line with related extant literature, the researcher adopts earnings per share as the control variable. In testing for the effect of the independent variables of interest on the financial performance of listed manufacturing firms in Nigeria, the researcher conducts Panel Least Square Regression analysis then proceed to check (diagnose) for inconsistencies with the basic assumptions of the Least Square Regression estimation technique. Succinctly, the diagnostics tests include test for multicollinearity as well as test for heteroscedasticity.

Descriptive Statistics

In this section, the researcher provides some basic information for both the explanatory and dependent variables of interest. Each variable is described based on the mean, standard deviation, maximum and minimum. Table 1 displays the descriptive statistics for the study.

Table 1: Descriptive Statistics

VARIABLES	MEAN	SD	MIN	MAX	NO OBS
RETA	**3.63**	**15.64**	**-179.92**	**108.90**	**449**
ENDI	**0.07**	**0.18**	**0**	**0.75**	**450**
SOCI	**0.71**	**0.22**	**0**	**1**	**450**
GOD	**69.32**	**14.26**	**7.69**	**112.5**	**450**
EAPS	**2.06**	**6.28**	**-7.32**	**57.63**	**448**

Source: Author (2023)

The mean value of firm performance as proxied by return on asset (RETA) is 3.62 with a standard deviation of 15.64. Return on asset has a minimum and maximum value of -179.92 and 108.90 respectively. In the case of the independent variables, the table shows that the mean of environmental disclosure index (ENDI) was 0.07, indicating that about 7% of the firms in the sample disclose information about environmental performance. In the same vein, the table shows a mean of 0.71 for the variable of social disclosure index (SOCI). This indicates that about 71% of the firms in the sample disclose information about their social engagements. The independent variable of governance disclosure index (GODI) shows a mean of 69.32 with a standard deviation of 14.26. In the case of the control variable, the study shows that earnings per share (EAPS) had a mean of 2.06 with a standard deviation of 6.28.

Correlation Analysis

In examining the association among the variables, the researcher employed the Spearman Rank Correlation Coefficient (correlation matrix), and the results are presented in the table below.

Table 2: Correlation analysis

	RETA	ENDI	SOCI	GODI	EAPS
RETA	1.00				
ENDI	0.21	1.00			
SOCI	0.28	0.32	1.00		
GODI	0.02	0.05	0.16	1.00	
EAPS	0.79	0.33	0.33	0.04	1.00

Author's computation (2023)

In the case of the correlation between corporate sustainability reporting and financial performance, the above results show that there exists a positive and moderate association between environmental disclosure index and financial performance as proxied with return on asset (0.21). There exists a positive and moderate association between social disclosure index and financial performance as proxied with return on asset (0.28). There exists a positive and weak association between governance disclosure index and financial performance as proxied with return on asset (0.02). The control variable of earnings per share has a positive and high association with financial performance as proxied with return on asset (0.79). However, to test our hypotheses a regression results will be needed since correlation test does not capture cause-effect relationship.

Regression Analysis

Specifically, to examine the effect of the independent variables on the dependent variables as well as to test the formulated hypotheses, panel fixed, and random regression analysis is employed since the results reveal the presence of heteroskedasticity. However, results from panel fixed and random regression and those from the Panel Least Square regression analysis are presented and discussed below.

Table 3 Regression Analysis

	RETA Model (Pooled OLS)	RETA Model (FIXED Effect)	RETA Model (RANDOM Effect)
C	-0.40 {0.917}	14.44 {0.001} **	8.03 {0.057}
ENDI	0.28 {0.943}	-5.46 {0.510}	-1.15 {0.837}
SOCI	9.58 {0.0003} **	-3.92 {0.415}	2.74 {0.490}
GODI	-0.07 {0.173}	-0.15 {0.006} **	-0.12 {0.015} **
EAPS	0.87 {0.000} ***	0.38 {0.000} ***	1.10 {0.000} ***
F-statistics/Wald Statistics	21.10 (0.00) ***	14.53 (0.00) ***	63.24 (0.00) ***
R- Squared	0.1601	0.1272	0.1210
VIF Test	1.07		
Heteroscedasticity Test	13.84 (0.0002) **		
HAUSMAN		Prob>chi2 = 16.01 (0.0030)	

Note: t & z -statistics and respective probabilities are represented in () and {}
Where: ** represents 5% & * represent 1% level of significance**
Source: Authors' Computations (2023)

As noted, we first conduct a panel least square regression analysis as seen in the table above then proceed to check for inconsistencies with the basic assumptions of the least square regression. These regression diagnostics tests include test for multicollinearity and test for heteroscedasticity. In this study like in most other related studies, we employ variance inflation factor (VIF) technique to diagnose the presence or absence of multicollinearity. A cut-off means VIF value of 10 is given for regarding a VIF as high. This is consistent with the recommendation of Gujarati (2004) which allows the mean VIF to be less than 10. The table above shows a mean VIF value of 1.07 for the model of financial performance which is less than the benchmark value of 10 indicating the absence of multicollinearity in the specified models. On the other hand, the assumption of homoscedasticity states that if the errors are heteroscedastic then it will be difficult to trust the standard errors of the least square estimates. Hence, the confidence intervals will be either too narrow or too wide. We conduct this test by employing the Breusch Pagan module in Stata 14. The result obtained from the model as shown in the table above reveals the probability value as P-value: 0.0002 for the model. These results indicates that the assumption of homoscedasticity has been violated due to very low P-values which is statistically significant at 1% level. This suggests that a panel fixed, and random regression analysis approach will be needed to control for heteroscedasticity as recommended by Greene, (2003). From the table shown above, a careful examination of the results provided by the effects models show that the model of interest suggests appropriateness as it relates to the dependent variable of financial performance for the period under investigation. However, a look at the p-value of the Hausman test (0.0030) implies that we should reject the null hypothesis since the p-values of the Hausman test is insignificant at 5% or 1% level. This suggests that the fixed effect results tend to be more appealing statistically when compared to the random effect results. Specifically, the researcher provides interpretation and makes policy recommendation with the random effect regression model. The model goodness of fit as captured by the Wald statistics and the corresponding probability value (0.0000) for the models shows a 1% statistically significant level suggesting that the entire model is fit and can be employed for interpretation and policy implication. An R2 value of 0.1272 indicates that about 13% of the variation in the dependent variable is being explained by all the independent variables in the models. This also means that about 87% of the variation in the dependent variable is left unexplained but have been captured by the error term.

The results obtained from the fixed effect regression reveals that environmental disclosure index {-5.46 (0.510)} as an independent variable to financial performance as proxied by return on asset appears to have a negative and insignificant effect on financial performance. This therefore means we should accept the null hypothesis and reject the alternate hypothesis. Hence, environmental disclosure index has no significant effect on the financial performance of listed manufacturing firms in Nigeria during the period under study. Notably, the result suggest that more disclosure of environmental sustainability matters insignificantly decreases financial performance during the period the under consideration. This finding contradicts the findings of Ali (2015) whose study revealed a negative effect and linked it to high cost associated with environmental sustainability reporting activities which invariably lowers the quality and quantity of these reports. Furthermore, the researcher finds that the result from this study is not consistent with the findings of Plumlee, Brown Hayes and Marshall (2015) who assert that companies who provide report on environmental performance incurs more expenses hence would perform below expectation in the long run. They noted that companies who do not report nor carry out environmental responsibilities are likely to be surrounded with demonstrations and protests (like those prevalent in the Niger Delta area of Nigeria) and this goes a long way to hinder a free work environment which may consequently affect performance.

The results obtained from the fixed effect regression reveals that social disclosure index {-3.92 (0.415)} as an independent variable to financial performance as proxied by return on asset appears to have a negative and insignificant effect on financial performance. This therefore means we should accept the null hypothesis and reject the alternate hypothesis. Hence, social disclosure index has no significant effect on the financial performance of listed manufacturing firms in Nigeria during the period under study. This result is inconsistent with those of Asuquo (2012) who stated that although corporate social responsibility disclosure appears to be in its early stages in Nigeria, some firms have been recognized as being pro-active in this field while others are not. The results are inconsistent with those of Odetayo Adeyemi and Sajujigbe (2014) who reported that corporate social activities increase long-term profits or survival of a firm through positive public relations and high ethical standards reduces business and legal risk which also build shareholder trust. Odetayo et al. (2014) notes that in order to ensure sustainable growth, it is necessary for a company to make positive impact on the surrounding environment, as well as on its stakeholders, such as its consumers, employees, investors, communities, and others. The findings are also inconsistent with those of Margolis et al. (2007) who found that corporate social responsibility engagement helps firms to gain a competitive advantage while ensuring the protection of their stakeholders. They also note that socially responsible firms are more likely to survive in the long term. Specifically, our finding strongly supports those of Nik Ahmad and Abdul Rahim, 2003; Rashid and Ibrahim, 2002 who noted that a proactive approach to corporate social responsibility may help a firm get access to pools of capital it might not otherwise be able to tap into.

The results obtained from the fixed effect regression reveals that governance disclosure index {-0.15 (0.006)} as an independent variable to financial performance as proxied by return on asset appears to have a negative and significant effect on financial performance. This therefore means we should reject the null hypothesis and accept the alternate hypothesis. Hence, governance disclosure index has a significant effect on the financial performance of listed manufacturing firms in Nigeria during the period under study. This result is consistent with the findings obtained from the studies of Haryono and Paminto (2015), Ioannou and Serafeim (2014), Bubbico et al (2012) and Gull et al (2013) who document that corporate governance has a significant effect on financial performance. It also agrees with the finding of Fallatah and Dickins (2012) who posited that corporate governance characteristics significantly relates to firm value measured by Tobin Q, leads to substantial growth specifically to increase shareholder's wealth, the economic value of the firms with higher productivity and lower risk (Hermalin & Weisbach, 2003; Walumbwa & Lawler, 2003). However, on the other hand, the result of this study contradicts the finding of Aggarwal (2013) who noted that corporate governance sustainability disclosure has an insignificant impact on profitability. Corporate governance elements are treated as the organization's checks and balances system because strategic policy regarding sustainability disclosure is imperative to management.

5.0 Conclusion and Recommendation

Business is central to the problem and must be central to the solution. Indeed, the expectations of corporate responsibility in areas such as environmental protection, human rights, human capital, and product safety are rising rapidly. Key stakeholders such as shareholders, employees, and financial institutions want business to be responsible, accountable, and transparent. Human activities taking place today are regarded by some people as having a detrimental impact on the society, ecology, and economy which future generations will experience. In this study, the researcher concludes that only the variable of governance sustainability disclosure appears to significantly affect the financial performance of listed manufacturing firms in Nigeria. However, the researcher documents and insignificant positive effect of environmental and social sustainability on the financial performance of listed manufacturing firms in Nigeria. Following the findings of this study, the researcher recommends that valuable financial, material, and human resources should be channeled on policies that relate to improving governance sustainability if the desire is to gain improved return on asset or improved firm value. This is due since the result from our analysis suggest a statistically weak effect running from governance sustainability on the performance measures of return on asset during the period under consideration. Furthermore, the cost of environmental disclosure should be minimized as the study shows it is reducing the performance of the firms under study. Finally, policies on social disclosure should also be reevaluated as the study shows it is negatively affecting the performance of the firms under study.

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