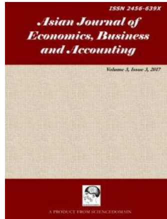

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Sustainable Development Practices and Corporate Financial Performance: A Survey of Selected Quoted Companies in Nigeria

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Authors' contributions

This work was carried out in collaboration between both authors. Author NOD designed the study, wrote the protocol, and wrote the first draft of the manuscript. Author NGN managed the literature searches, performed the statistical analysis and managed the analyses of the study. Both authors read and approved the final manuscript.

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ABSTRACT

The present study investigated the relationship between sustainable development practices and corporate financial performance. The study adopted 'ex-post facto' research design. Data used for the study were sourced from annual reports and financial statements of thirty-four quoted companies selected from Agriculture, Basic materials, Consumer goods, Consumer services, Financial services, Health care, ICT, Industrials and the Oil and gas sectors of the Nigerian economy for the period 2011 to 2015. Content analysis was used to construct the sustainable development index. Multiple regression analysis techniques run on SPSS version 23 was used to test the hypotheses formulated in this study. Findings revealed a negative relationship between return on equity and sustainable development practices. A significant positive relationship was shown to exist between sustainable development practices and firm size, implying that firms with larger total assets adopt more sustainable development practices. No significant relationship was established between earnings per share and corporate sustainable development practices. The study recommended that corporate sustainability reporting be made compulsory through legislation, and the government should grant tax credit and other incentives to corporate entities that engage in sustainability practices to encourage them to contribute more to the much needed sustainable development.

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1. INTRODUCTION

The goal of sustainable development is to 'meet the needs of the present without compromising the ability of future generations to meet their own needs' (World Commission on Environment and Development, [1]. The sustainable development gives equal rights to those living and those yet to be born. This is the intergenerational equity requirement which is central to the pursuit of sustainability. In line with the above, Sharp [2] noted that a common concept of sustainable development is the emphasis on strong links between the welfare of generations with the capacity of the biosphere to sustain life over time. According to Unerman, Bebbington and O'Dwyer [3] 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. This point to the fact that the present human consumption and development is not sustainable. World Commission on Environment Development [1] defines sustainability as the level of human consumption and activity which can continue into the foreseeable future so that the systems which provide goods and services to humans persist indefinitely. The project of sustainability is based on the indefinite maintenance of all systems necessary to provide the goods and services for humans to survive. Oliveros [4] pointed out that while all the systems that provide goods and services for humans persist indefinitely, the hierarchical order of the economic, social and environmental systems is given by the need to maintain a higher level system for the lower ones to survive. Arguably, without the environment, there will be no society, and without society, there will be no economy. In line with the above, Senge (2002) cited in Cortez & Cudia [5] asserted that the economy, therefore, depends on the environment, making environmental preservation and sustainability not only an obligation but also a priority. Bebbington & Gray [6] observed that it is a self-evident truth that humankind's current social, economic and political organizations and activities are not sustainable in any sense. While certain of the lesser developed countries may be sustainable, and many indigenous tribes living in relatively harmonious environmental and social circumstances are probably sustainable, the globe as a whole is not sustainable, and the developed world is unsustainable to a significant extent. In this era of unprecedented economic growth, achieving sustainable development seems to be more of an aspiration than a reality. No doubt, the globalized world economy has witnessed demonstrable positive improvements in quality of life of many people as well as new opportunities to generate prosperity through knowledge sharing and access to technological advancements and breakthroughs. Yet, these advancements and breakthroughs are, however, accompanied by alarming risks threatening the stability and sustainability of our, hitherto, beautiful environment. The preceding poses a great dilemma to the present century. The concept of sustainability starts by recognising that there are finite environmental limits to human activity and that long-term, we must find ways in which we can live within those limits. Kasum [7] opined that, with the realisation that resources are finite, part of the human responsibility is to preserve the human future on this planet into the limitless future. Sustainable development is concerned with finding better and more efficient ways of delivering human well-being.

Elkington [8] observed that corporations, especially large ones, have become a key focus of attention in the sustainability debate. GRI standards [9] put it that through their activities and relationships, all organizations make positive and negative contributions toward the goal of sustainable development. Organizations, therefore, have a key role to play in achieving sustainable development goals.

Kupers [10] argued that corporations are perceived to be responsible for many negative impacts on the environment and on societies. Corporate organizations are expected to show care for society and the environment as they are a culprit in the sustainability debate. It is pertinent to recognize that organizations will only care about the environment if they feel some sense of personal ownership and responsibility.

Today, stakeholders are increasingly demanding a better understanding of how companies perform in managing sustainable development. As a response, corporate organizations communicate their sustainable development practices through the instrumentality of sustainability reporting. Sustainability reporting, as promoted by the GRI Standards [9], is an organization's practice of reporting publicly on its economic, environmental, and social impacts,

and hence its contributions – positive or negative – towards the goal of sustainable development. Through this process, an organization identifies its significant impacts on the economy, the environment, and society and discloses them by a globally-accepted standard. The focus of sustainable development is to take pragmatic steps that ensure that right actions are taken today to improve life for generations yet unborn. Our world has greatly witnessed unprecedented developmental breakthroughs in science and technology ranging from mechanized agriculture to exploits in space science. These exploits, no doubt, have improved human life. However, the consequential devastating impacts of these developmental exploits are beginning to threaten the continued existence and fulfilment of man in this hitherto beautiful planet, earth. This threat makes itself manifest in global warming, poverty and hunger, environmental pollution, ocean thermal expansion, extreme weather events and other social effects. All these have been linked to human activity. Companies are at the centre of these activities. Presently, companies are beginning to respond to global demand for sustainable corporate practices. The question then arises as to what effects the adoption of sustainable development practices may have on corporate economic bottom line. The answer to this is yet unclear and requires more studies as prior studies in this area provided either inconclusive or contradictory findings. It is against the preceding background that the present study sought to obtain empirical evidence on the relationship between sustainable development practices and corporate financial performance using 34 selected companies from nine industrial sectors of the Nigeria economy. Companies used in this study were carefully selected based on three-step criteria thus: first, the company must be quoted on Nigeria Stock Exchange, second, the companies reporting date must be on 31st December, third, a complete set of annual report spanning 2011- 2015 must be available. The import of this was to obtain a homogenous sample regarding tradition and period of reporting. The study specifically assessed the relationship between (i) Return on equity and sustainable development practices (ii) Firm size and sustainable development practices (iii) Earnings per share and sustainable development practices.

2. REVIEW OF RELATED LITERATURE

The literature review was extensively discussed under the following headings: conceptual framework, theoretical framework and empirical framework.

2.1 Conceptual Framework

The concept of sustainability and sustainable development

This concept came to wider prominence with Brundtland Report of 1987 which defined sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. (World Commission on Environment and Development, [1]. To Szczepankiewicz & Muc´ko [11], sustainable development is understood as overall socio-economic development integrating economic, political, social and environmental objectives. Sustainability is concerned with both the sustenance of the natural ecology and the justice and equity with which the fruits of that ecology are employed Bebbington & Gray, [6]. Korten [12] added to the debate, as he posits that for a sustainable development, we must restructure economic relationships to focus on two priorities (i) balance human uses of the environment with the regenerative capacities of the ecosystem; (ii) allocate available natural capital in ways that ensure that all people have the opportunity to fulfill their full social, cultural, intellectual and spiritual development.

Businesses, like all other stakeholders in society, are faced with dual sustainable development challenges. The first challenge is internal sustainability while the second is external or global sustainability. Internal sustainability can be referred to as the going concern sustainability, which can also be referred to as the internal economic sustainable development. It is concerned with ensuring that current activities of the organization are conducted in a manner that will not hinder future activities (Newton-King, [13]). While according to Kasum [7] the essence of global sustainable development is that activities of business organizations are conducted in such a manner that both the current and future needs of the society are not compromised.

The concept of sustainability reporting

Sustainability reporting is a broad term used to describe a company's reporting on its economic, environmental and social performance. Sustainability reporting creates a window into the

performance of a company across economic, social and environmental dimensions KPMG, [14]. According to GRI Standards [9], Sustainability reporting should provide a balanced and reasonable representation of an organisation's positive and negative contributions towards the goal of sustainable development. The information made available through sustainability reporting allows internal and external stakeholders to form opinions and to make informed decisions about an organization's contribution to the goal of sustainable development. Sustainability reports are also referred to as "triple-bottom-line reports" (Profit, People and Planet). The notion of reporting against the three components (or bottom lines) of economic, social and environmental performance is directly tied to the concept and goal of sustainable development Deegan, [15]. By preparing and disseminating triple bottom line statements, an organization conveys an image of concern and sensibility to the three dimensions of social responsibility: economic, environmental and social Brown, Dillard & Marshall, [16]. According to Norman & MacDonald [17], the idea behind the triple bottom line paradigm is that a corporation's ultimate success or health can and should be measured not just by the traditional financial bottom line, but also by its social/ethical and environmental performance. It is often argued that firms' adoption of sustainability strategies should grant them competitive advantages over firms that do not Adams & Zutshi, [18].

Sustainability dimensions

Global Reporting Initiatives guidelines, GRI [19] outlines three aspects of sustainability; economic, social and environmental. These dimensions are explained hereunder.

Economic dimension

According to Global Reporting Initiative, GRI [19], the economic aspect of sustainability concerns the organisation's impacts on the economic conditions of its stakeholders and economic systems at local, national and global levels. The economic indicators illustrate the flow of capital among different stakeholders and main economic impacts of the organisation throughout society.

Environmental dimension

The environmental dimension of sustainability concerns an organisation's impacts on living and non-living natural systems, including ecosystems, land, air and water. Ecological indicators cover performance related to inputs (e.g. material, energy, water) [19].

Social dimension

GRI [19] puts it that social aspect of sustainability concerns the impacts an organisation has on the social systems within which it operates.

2.2 Theoretical framework

This study used the blending of stakeholder and legitimacy theories to explain the motivation for sustainable development practices.

Stakeholder theory

The stakeholder theory of modern corporations was propounded by Edward Freeman in 1984. Stakeholder theory states that the purpose of a business is to create as much value as possible for stakeholders which includes, but not limited, to shareholders Freeman, [20]. In other words, corporations have a social responsibility beyond making a profit. The theory opposes the then popular ideology that a company aims to accumulate profits so it can be redistributed amongst shareholders. According to Friedman [21], in a free society, there is one and only one social responsibility of business, to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game. He argued that managerial attention to interests other than those of investors is a breach of trust that inevitably reduces the welfare of shareowners. Stakeholder theory, on the other hand, is based on the notion that companies have several stakeholders defined as groups and individuals who benefit from or are harmed by, and whose rights are violated or respected by corporate actions. Deegan [15] argues that it can be acknowledged that this perspective can be extended to a notion that all stakeholders also have a right to be provided with information about how the organisation is impacting them. According to Wahba [22], stakeholder theory assumes that organisational sustainability initiatives must result in higher financial performance.

Legitimacy theory

In literature, legitimacy theory is credited to Mark C. Suchman who developed a broad-based definition of legitimacy in 1995 as "a generalised perception or assumption that the actions of an entity are desirable, proper, or appropriate within

some socially constructed system of norms, values, beliefs and definitions" Suchman, [23]. Legitimacy theory posits that businesses are bound by the social contract in which the firms agree to perform various socially desired actions in return for approval of its objectives and other rewards, and this ultimately guarantees its continued existence. The concept is used to represent a multitude of implicit and explicit expectations that society has about how the organisation should conduct its operations. It assumes that society allows the organisation to continue operations to the extent that it meets their expectations. According to Lindblom [24], legitimacy is a status that comes from the harmony between a corporation's value system and that of society. The absence of such balance, he argues, may cause the firm to disappear. From such a perspective, corporate sustainable development reporting is seen as one of the strategies used by companies to seek acceptance and approval of their activities from society. It is understood as an essential tool in corporate legitimating policy, as it may be used to establish or maintain the legitimacy of the company by influencing public opinion, patronage and ultimately, the bottom line.

2.3 Empirical Review

Preston & O'Bannon [25] investigated the relationship between indicators of corporate social performance and financial performance using data based on 67 large U.S corporations from 1982 – 1992 using ROA, ROE and ROI as financial performance indicators. The study concluded that commercial performance either precedes or is contemporaneous with social execution. Reddy & Gordon [26] investigated the effects sustainability reporting has on companies' financial performance, using 68 listed companies drawn from New Zealand and Australian Stock Exchanges and found a statistically significant relationship between sustainability reporting and market returns for Austrian companies but not for New Zealand companies. Tang & Chan [27] investigated the relationship between economic performance and social and environmental disclosures in Hong Kong as well as examined whether sustainability reporting in different business sectors is different. The results show that firms' size and leverage play an essential role in the level of sustainability disclosure. The findings also illustrate that the nature of the industry has an association with the extent of sustainability disclosure. Bartlett [28] examined the impact of corporate sustainability reporting on firm valuation and reported that both the environmental and social aspects of sustainability reporting are significant and positively correlated with market value.

Uwuigbe [29] investigated the relationship between the performance of firms and the level of corporate social, environmental sustainability reporting among firms in the Agricultural/Agro-Allied and Manufacturing industries in Nigeria. The study critically developed and utilised a disclosure index to measure the extent of sustainability disclosure made by companies in their corporate annual reports, and performance was proxied by ROTA, firm size and debt to equity ratio. The results showed a significant positive relationship between the level of corporate social, environmental sustainability reporting and the performance of firms proxied by ROTA but no association with firm size and debt to equity ratio. Ngwakwe [30] sought to establish a possible relationship between sustainable business practice and firm performance (proxied by ROTA) using 60 manufacturing companies in Nigeria, categorising the firms into 'responsible' and 'irresponsible' firms. Findings revealed that the sustainable practices of the 'responsible' firms are significantly related to firm performance. Lopez, Garcia & Rodriguez [31] examined the link between performance indicators and corporate sustainability practices among European firms that have adopted corporate sustainability practices and others that have not. The results of the empirical analysis show that differences in performance exist between firms that take sustainability practices and those that do not and that a short-term negative impact on performance is produced.

Ekwueme, Egbunike & Onyali [32] examined the connection between sustainability reporting and corporate performance from a stakeholder perspective, using a sample of 141 respondents, comprising 21 corporate managers, 55 corporate employees and 65 consumers and investors. The results showed a positive connection between sustainability reporting and corporate performance.

Adams, Thornton & Sepehri [33] investigated the impact of the pursuit of sustainability on the financial performance of the firm' using a sample size of 107 companies belonging to Dow Jones sustainability index (DJSI) and 107 S & P 500 companies. The results of the 2 sample T-test show that corporate sustainability label has no

statistically significant impact on the financial performance of business organisations. Eccles, Ioannou & Serafeim [34] investigated the effect of a corporate culture of sustainability on multiple facets of organisational behaviour and performance. Findings show that high sustainability firms were found to significantly outperform those in the low sustainability group over the long term, both regarding stock market as well as accounting performance. Gong, Xu & Gong [35] in their study titled, on the value of corporate social responsibility disclosure: an empirical investigation of corporate bond issues in China, found that firms with high CSR disclosure quality are associated with lower costs of corporate bonds.

Hussain [36] analysed the relationship between sustainability measures and financial performance of Global Fortune (100) firms. He found that impact of environmental and social dimensions of sustainability remains relevant and significant across different measures of financial performance. Ameer & Othman [37] studied top 100 sustainability firms and noted a positive association between sustainability disclosure and financial performance. Burhan & Rahmanti [38] examined the impact of sustainability reporting on company performance. He reported that only social performance disclosure influences company performance. Hamilton [39] conducted an event study of 463 US firms and found a negative relationship between toxic release inventory and share price reaction. Murray (2010) asserted that the practice of sustainable development by firms had been criticised to signal reduction in future earnings and erosion of investor's short-run returns. Kwanbo [40] deduced that social disclosure has no impact on earnings per share.

Development of Research Hypothesis

Given the mixed results in the above empirical review, we develop the following hypotheses stated in their null forms.

HO_1: There is no significant relationship between sustainable development practices and return on equity among quoted firms in Nigeria.

HO_2: There is no significant relationship between sustainable development practices and firm size of quoted companies in Nigeria.

HO_3: There is no significant relationship between sustainable development practices and earnings per share of quoted firms in Nigeria.

3. METHODOLOGY

The researchers employed 'ex-post facto' research design for this study. The reason for adopting this design is that both the dependent and the independent variables exist and are observed at the same time to establish the effect of the later on the former which has already taken place before now. This study utilized secondary data, from published annual reports of the companies used in this study. This is because annual story is the main medium, through which companies make their sustainability performance disclosures. The annual reports selected to cover the periods 2011 to 2015. The choice of the periods was informed by heightened interest and increased awareness on sustainable development issues within these periods.

Population and study sample

The population of the study includes quoted companies in the Agriculture, Basic material, Consumer goods, Consumer services, Financial Services, Industrial Goods, Healthcare, ICT and Oil and gas sectors of the Nigerian economy. However, Firms are selected and included in the sample if they can fulfil the following criteria:

First, the firm must be listed on the Nigerian Stock Exchange. Second, the firm must have its accounting year ending on 31st December. Third, a complete set of annual report can be obtained covering the period 2011 to 2015, from Nigerian Stock Exchange website or the company's website. These criteria were adopted to achieve a sample that is homogeneous as to tradition and period of reporting. The final sample consists of 34 corporate firms from the aforementioned industrial sectors of the Nigerian Economy.

Operational measures of variables

The dependent variable in this study is the sustainable development index (SDI). SDI is used as an indicator of sustainability performance reporting. Content analysis was adopted for the measurement of sustainable development index. This analysis method considers the occurrence of sustainability disclosures and the quality of the information disclosed. Other prior researchers in this area of study adopted this analysis method. Sustainable

development performance is grouped into three dimensions – economic, social and environmental aspects. In the content analysis, this study did not consider the economic size. This is because the quality of economic performance disclosure of different companies in Nigeria is similar. Listed companies in Nigeria are governed by the statutory requirements for the preparation of financial statements. To analyze the social and environmental disclosures of companies, the Global Reporting Initiative (GRI) guidelines were used as a framework from where we adopted six major aspects of the social performance indicators namely- employment, occupational health and safety, employee training and education, customer health and safety, diversity and equal opportunity and six aspects of the environmental performance indicators, namely- water, energy, waste, biodiversity, environmental management system and emissions. To develop the SDI, the researchers identified and recorded 'occurrence' of disclosure of any of these aspects of sustainability as '1', while for non-disclosure, '0' is recorded. After checking the occurrence of disclosure, the quality and quantity of that disclosure identified were analyzed. A disclosure is considered as qualitative if it is explained and illustrated while quantitative disclosure relates to disclosures in monetary terms or actual quantities. Quality of disclosure is classified into four categories: qualitative and quantitative, qualitative and non-quantitative, non-qualitative but quantitative, and non-qualitative and non-quantitative. These four categories of disclosure quality were assigned different scores as shown in Table 1.

Table 1. Categories of disclosure quality

Quality (Extent) of disclosure	Quality score
Qualitative & quantitative disclosure	3
Qualitative but non-quantitative disclosure	2
Non-qualitative but quantitative disclosure	1
Non-qualitative and non-quantitative disclosure	0.5
Total qualitative score	6.5

The total quality score is the summation of all the quality scores in each aspect of the disclosure. The total occurrence is the total number of the sustainability aspects disclosed. Sustainable Development Index was determined using the following formula:

Sustainable Development Index (SDI) =

$$\frac{\text{Total Quality Score}}{\text{Total Occurrence}}$$

Corporate performance is the independent variable in this study. Proxies used for performance return on equity, firm size and earnings per share. Return on equity is a measure of profitability based on the investments of the owners of the business. It is given by the formula: net profit (after interest, taxes and preference dividend) divided by shareholders' equity. Earnings per share (EPS) refer to a company's profit after deducting all expenses divided by the number of ordinary shares outstanding. Total assets as a proxy for firm size refers to all resources owned by a company or business during the year. It is the sum of all current and non-current assets held by a business over an accounting period. Researchers such as Dalbor, Kim & Upneja [41] and Setiadharma & Machali [42], amongst others, had earlier used total assets as a proxy for firm size. These proxies are preferred in this research because the researchers believe they are more comprehensive in measuring corporate performance.

Data analysis techniques

In this study, Correlation analysis was used to x-ray and establish possible connections between the dependent variable and the explanatory variables, but correlation analysis does not address the predictive power of the variables. Hence, Multiple Regression analysis techniques were used in carrying out the analysis. The justification for the use of multiple regression analysis is its relevance in investigating the predictive powers of the independent variables on the dependent variable. The specified regression model guided the analysis. The hypotheses were tested using the t-test statistic at 5% level of significance. The statistical package for social sciences SPSS v.23 was utilized in the data analysis.

Model specification

The following regression model will guide the research.

SDI = f (ROE, FIRM SIZE, EPS)

This model can be written in explicit form as:

$SDI = a_0 + a_1ROE + a_2FIRM\ SIZE + {}_{a3}EPS + e_{1.}$

Where,

SDI = Sustainable development Index
ROE = Return on equity
FIRM SIZE = Log of total asset
EPS = Earnings per share
a_0 = Constant or intercept of the regression
a_1, $a_{2\ and}$ a_3 = Coefficients to be estimated
e_1 is the error term capturing other explanatory variables not included in the model. The apriori expectations are that a_1ROE,a_2FIRM SIZE and a_3EPS are all expected to have a direct positive relationship with SRI. Therefore, $a_1 > 0$, $a_2 > 0$, $a_3 > 0$

4. ANALYSIS AND DISCUSSION OF RESULTS

From the results above, the regression equation is rewritten as:

SRI = 0.951- 0.469 ROE + 0.045 FIRM SIZE + 0.014 EPS

From the summary of regression result in Table 2, R-value shows a simple positive correlation of 55.6%. The R^2-value of 0.310 implies that 31% of the changes in SDI is explained by the model. This is supported by the adjusted R^{2-} the value of 24.1%. The calculated F-statistic of the overall regression of 4.486 is greater than critical -value of 2.276, i.e., F-cal, (4.486)>F-tab, (2.276) with a p-value of 0.010 which is far less than 0.05 significance level, implying that the overall regression is statistically significant at 5% and the regression model provides a better fit and gives a good prediction of the dependent variable, hence the chosen explanatory variables jointly explain the variation in the dependent variable. The Durbin-Watson statistic value of 1.836 approximates to 2, which is a rule of thumb, implying the absence of positive auto correlation. The results above also show that two variables; return on equity and firm size are statistically significant at 5% level.

Analysis of Table 3 using Pearson Correlation indicates a negative correlation coefficient of -0.304 between sustainability reporting and Return on Equity, and it is significant at 5% given a p-value of 0.040. The table also reveals a positive correlation coefficient of 0.411with a p-value of .008 which implies that the correlation is significant at 1%, showing that firm size influences SDI very significantly. A positive but very low correlation coefficient of 0.059 between SDI and EPS with a p-value of 0.370 implies a no significant correlation between SDI and EPS.

Test of Hypotheses

Decision Rule

The decision rule is to reject the null hypothesis if p-value of the t-statistic is greater than 5% alpha level. (i.e., reject Ho if p-value > 0.05 alpha level).

Ho_1: There is no significant relationship between sustainable development practices and return on equity of quoted firms in Nigeria.

From Table 2, a t-statistic test of the relationship between sustainable development index (SDI) and returns on equity (ROE) shows that the P- the value of the t-statistic (0.019) is less than (0.05) alpha level. We, therefore, reject the null hypothesis and conclude that there exists a significant relationship between Sustainable development practices and return on equity. The regression coefficient of -0.509 implies a negative relationship between SDI and ROE.

Ho_2: There is no significant relationship between sustainable development practices and firm size of quoted companies in Nigeria.

From Table 2, the p-value of the t-statistic test of the regression between sustainable development Index and firm size shows a p-value of (0.02) which is less than (0.05) alpha level; the null hypothesis is, therefore, rejected at 5% level of significance. The beta coefficient of regression is 0.045 implies a positive relationship. Hence we conclude that sustainable development practices have a significant positive relationship with firm size.

Ho_3: There is no significant relationship between sustainable development practices and Earnings per share of quoted companies in Nigeria.

From Table 2, the p-vthe alue of the t-statistic test of the regression between sustainable development Index and Earnings per share shows that the P- the value of the t-statistic (0.163) is greater than (0.05) alpha level. We, therefore, accept the null hypothesis and conclude that no significant relationship exists between SDI and EPS.

Table 2. Summary of regression analysis

Variable	Coefficient	T-Statistic	Sig.
SRI(constant)	.951	2.062	.048
ROE	-.469	-2.470	.019
FIRM SIZE	.045	2.459	.020
EPS	.014	1.431	.163
R	.556	F-Statistic 4.486	
R-Squared	.310	Sig. (p-value)	.010
Adjusted R-squared	.241	Durbin- Watson stat.1.836	

Source: SPSS output

Table 3. Correlation of variables

		SRI	ROE	FIRM SIZE	EPS
SRI	PEARSON	1.000	-0.304	0.411	0.059
Correlation	Sig(1-tailed)		0.040**	0.008***	0.370
	N	34		34	34
ROE	PEARSON	-0.304	1.000	0.005	0.566
correlation	Sig(1-tailed)	0.040**		0.490	0.000
	N	34	34	34	34
Firm Size	PEARSON	0.411	0.005	1.000	0.134
Correlation	Sig(1-tailed)	0.008***	0.490		0.225
	N	34	34	34	34
EPS	PEARSON	0.059	0.566	0.134	1.000
Correlation	Sig(1-tailed)	0.370	.000	0.225	
	N	34	34	34	34

=10% significance level,= 5% significance level,*** =1% significance level*

Source: SPSS output

5. CONCLUSION AND RECOMMENDATIONS

In line with Murray [43] who asserted that the practice of sustainable development by firms has been criticized to signal reduction in future earnings and erosion of investor's short-term returns, and Consistent with Lopez, Garcia & Rodriguez [31] and Makori & Jagongo [44], but in disagreement with an earlier study by Preston & O'Bannon [25] which reported a positive relationship between social index and returns on equity, our findings revealed a negative relationship between sustainable development practices and return on equity. Interestingly, the negative relationship may suggest that additional expenses maybe incurred by companies in pursuance of sustainable business practices. Additional costs may be incurred in the adoption of sustainable development practices such as employee welfare and training, occupational health and safety, pollution prevention through the adoption of non-polluting technologies, energy saving practices, recycling, environmental management systems and community support programmes. These extra (sacrificial) expenses that firms incur in pursuit of sustainable development may erode returns and place them at an economic disadvantage relative to less sustainability friendly firms, at least in the short term. It may also be inferred from the reported negative relationship between SDI and ROE that corporate organizations that do not adopt sustainable development practices may enjoy high profit/ returns at the expense of the environment and society.

Watts and Zimmerman [45] asserted that larger firms attract greater attention from the media, policy makers, and regulators; therefore, they would be under greater pressure to perform better on sustainability reporting. Consistent with the above assertion and with the findings by Tang & Chan [27], and however, inconsistent with Uwuigbe [29], who found no relationship between social and environmental reporting and firm size, results of the present study revealed that firm size has a positive significant relationship with extent of sustainable development practices. Firm size has a positive significant influence on corporate sustainable development practices. This may imply that a firm's corporate sustainability disclosures may be determined by its resource capabilities. Large

firms have more resources at their disposal and are more capable of channeling more resources towards social contribution, employee welfare, environmental mitigation and remediation and to pursue better occupational health and safety programs and are more likely to show their commitment to sustainable development. Large corporate entities emphasize their corporate image and may use sustainable development reporting as a tool for gaining or maintaining corporate status, reputation and legitimacy.

Contrary to Makori & Jagongo [44] who reported a significant negative relationship between environmental reporting and Earning Per share, our study revealed no significant relationship between sustainable development practices and earnings per share. Hence, we conclude that earnings per share do not represent a significant explanatory factor of the behaviour of sustainable development index. We also found that there is no mandatory legal requirement for quoted corporate organizations in Nigeria to make disclosures on their environmental and social performances. Our findings further revealed that sustainable development reporting in Nigeria is still developing. More so, corporate entities make more disclosures on the social aspects of sustainable development than on the environmental aspects.

The reported negative relationship between corporate sustainable development practices and return on equity may discourage firms from adopting sustainability practices. Hence, we recommend that government should grant tax credits and other financial incentives to corporate organizations that engage in sustainable development practices as a way of encouraging them. We also recommend that sustainable development practices disclosures, which are hitherto, a voluntary practice in Nigeria, be made compulsory through legislation. We recommend that national policies and programmes aimed at stimulating corporate entities to show more commitment to sustainable development should be put in place. Based on our findings that a significant positive relationship exists between firm size and sustainable development practices, we recommend that organizations particularly large corporate entities with more resources at their disposal should adopt sustainable development practices and disclosures in order attain and maintain legitimacy and improve their corporate image.

Corporate organizations should, as a matter of necessity and urgency, embed sustainable development practices into their corporate strategy by adopting environmentally efficient technologies and corporate practices with less negative impact on society and the environment to foster a trans-generational development for which posterity will lay no blame on the present generation.

Host communities to corporate organizations, non-governmental organizations and other stakeholders must demand sustainability reports detailing the entities' social and environmental impact and performance.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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APPENDICES

Data for the variables used for the study

S/N	COMPANY	SRI	EPS	Firm size	ROE
1	OKOMU OIL PALM	2.2136	4.6120	10.4400	0.1449
2	PRESCO PLC	1.7229	2.3060	10.5100	0.1697
3	FIRST ALUM NIG	2.2967	-0.1080	9.9400	-0.0470
4	TRANSCORP HOTEL	2.0400	0.0560	10.6500	0.0751
5	CAPITAL HOTELS	2.1000	0.2416	9.8300	0.1135
6	UNILEVER NIG	1.8572	1.1200	10.6200	0.4191
7	CADBURY NIG. PL	1.7386	1.1820	10.5400	0.1707
8	NIG. BREWERIES	1.7171	5.2500	11.4500	0.3497
9	DANGOTE SUGAR R	1.8371	0.9320	10.9500	0.2136
10	NASCON ALLIED I	1.9167	0.8720	10.0900	0.3555
11	NESTLE NIG. PLC	2.2273	26.7120	11.0000	0.6251
12	ACCESS BANK PLC	2.2661	1.5240	12.2300	0.1285
13	FIRST BANK	2.2464	1.5760	12.5600	0.1391
14	GTB	1.9528	2.8200	12.3100	0.2480
15	ZENNITH BANK PL	2.1513	2.2520	12.4700	0.1722
16	UNION BANK OF N	2.5175	-2.1100	11.9600	-0.0467
17	UNITED BANK FOR	2.2348	1.3700	12.3900	0.1221
18	FCMB GROUP PLC	2.3167	0.4660	11.5700	0.0208
19	FIDELITY BANK P	2.2745	0.4100	12.0100	0.0714
20	PHARMA DEKO	1.6500	2.2020	9.4100	0.2897
21	GLAXOSMITH KLIN	2.1795	2.2600	10.4000	0.2037
22	E-TRANSACT INTE	1.5667	0.0730	9.6000	0.0990
23	COMPUTER WAREHOUSE GROUP	2.0333	0.2860	10.0800	-0.0399
24	JULIUS BERGER N	2.0986	4.2920	11.3300	0.3609
25	LAFARGE AFRICA	2.3500	5.3422	11.3800	0.1738
26	DANGOTE CEMENT	2.1294	10.5700	11.9100	0.3447
27	C & I LEASING P	1.9567	0.1520	10.2800	0.0476
28	AIRLINE SERVICE	2.3400	0.3600	9.5600	0.0820
29	A.G. LEVENTIS	2.2500	0.3280	10.2700	0.0869
30	OANDO PLC	2.3470	-2.0420	11.2500	-0.9439
31	MRS OIL NIG PLC	1.9024	2.8020	10.8000	0.0408
32	FORTE OIL PLC	2.1133	-0.5620	10.7900	-0.1215
33	CAVERTON OFFSHO	1.6000	0.2960	10.5700	0.0874
34	ETERNA PLC	1.7857	0.8240	10.3400	0.1435

Source: Annual Reports from NSE & Individual company's websites, (2011-2015)

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