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Corporate Sustainability Efficiency and Firm Value. A Study of Nigeria's Deposit Money Banks

Akprorien, Olum Fidelis[1], Otuya, Sunday[2*], & Archibong, Etim Archibong[3]

[1,3]Department of Accounting, Faculty of Management Sciences,University of Uyo, Akwa Ibom State.
[2]Department of Accounting and Finance, Edwin Clark University, Kiagbodo Delta State

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ABSTRACT: *Concerns about climate change, and environmental sustainability have brought to the public fore the need for corporate organizations to incorporate sustainability information in their reports. This study was carried out to examine the relationship between corporate sustainability efficiency and market value of listed Deposit Money Banks in Nigeria. The population of the study consist of all listed DMBs in Nigeria. Data for the study were obtained from published financial reports for the period 2017 to 2020. Findings of the study showed that social, economic and environmental efficiency practices have a significant positive effect on market values of listed DMBs in Nigeria. The study also finds a positive but not significant relationship of bank complexity with market value of DMBs and recommends amongst others that DMBs should intensify efforts to ensure adequate attention is given to sustainability efficiency practices to attract higher stock market values.*

KEYWORDS: corporate efficiency, sustainability, firm value, economic, social, environmental

INTRODUCTION

Climate change and environmental sustainability issues have been a subject of debates among scholars and corporate managers in recent times. Questions are now been asked about the damage caused to the environment through air, soil and water pollution as a result of industrial activities. These concerns have brought to the public fore the need for corporate organizations to incorporate environmental information in their reports. Businesses and the world at large are beginning to evaluate, assess and effect accounting reporting for raw materials, energy consumption and use of natural resources which have systematically depleted the environment. Stressing further on environmental reporting and sustainability, Micah, Ironkwe & Olangunju (2011), are of the opinion that, the pursuit of sustainable development as an object of policy is now much in vogue; and governments of different countries have long been engaged in setting up regulatory, voluntary, incentive-based, informational and cooperative instruments of policy geared towards promoting sustainable development.

Corporate organisations are increasingly being put in the spot light and made to account for the effect of their operations on the environment. It has been argued that lack of ethics, as well as neglect of sustainability efficiency concerns is largely responsible for environmental pollution and disasters caused by industrial activities (Adekoya & Ekpenyong, 2009; Iyoha, 2010; Ofoegbu, Odoemelam & Okafor, 2018; Otuya, Akprien & Ofeimun, 2019). Accordingly, there is an increasing pressure on corporate organisations to be responsible corporate citizens by accounting for and disclosing transparently how their operational activities positively or negatively affect the natural environment. This concern on part of the firms, hinges on legitimacy thus companies tend to accomplish this legitimacy through sustainability efficiency disclosures.

Further, the introduction of the Global Reporting Initiatives (GRI), the International Organisations for Standardisations (ISO 14000 standards) and AccountAbility Principles Standards (AA1000APS, AA1000SES & AA1000AS) in the past decades have all reinvigorated firms to report their social, economic and environmental activities. In view of this, sustainability report has become a parcel of corporate reporting which encompasses profit, people and planet (GRI, 2008; KPMG, 2015; SustainAbility/UNEP, 2010).

However, sustainability reporting has not been made mandatory in a developing country like Nigeria. This raises a number of questions. Firstly, will a firm under voluntary circumstances disclose the true information about its operational activities? Will a company disregard the economic consequences of honest and transparent disclosures? And will the firm risk the negative publicity or prosecution for disclosures on negative effects of its operations on the environment? These questions sum up the transparency issues relating to corporate sustainability efficiency which has to some extent exerted so much pressure on companies to put in place sound corporate sustainability efficiency mechanism.

There are a number of studies on environmental disclosures. Studies such as Odoemelam, Ofoegbu and Okafor (2018), Akbas (2016), Eberhardt-Toth (2017), Osazuwa, Che-Ahmad and Che-Adam. (2016) all document different measures the quality and quantity of corporate environmental disclosures have on corporate performance and firm value. However, studies linking corporate sustainability and firm value are scarce in Nigeria. Given the perceived importance attached to corporate sustainability efficiency in recent times, this study, therefore seeks to examine the relationship between corporate sustainability efficiency and the perceived variations in firm value among listed Deposit Mondy Banks in Nigeria.

Objectives of the Study

The broad objective of the study is to examine the relationship between corporate sustainability efficiency and firm value of Deposit Money Banks in Nigeria. The specific objectives are to:

(i) Examine the relationship between socio-efficiency and firm value;
(ii) Investigate the link between economic efficiency and firm value;
(iii) Ascertain the relationship between environmental efficiency and firm value; and
(iv) Examine the relationship between bank complexity and firm value.

Scope of the Study

The focus of this study is corporate sustainability efficiency and firm value. The study is restricted to listed Deposit Money Banks in Nigeria. The banking sector is chosen because of its strategic importance to the growth of the Nigerian economy. The scope covers four years from 2017 to 2020. The study also covers one dependent and three independent variables and one control variable.

LITERATURE REVIEW

Sustainability Efficiency

The UN Commission on Environment and Development defined sustainable development as the development that meets the needs of the present without compromising the ability of future generations to meet their own needs (UNIDO, 2007). For sustainability to be achieved, the three core elements that need to be harmonized are- economic growth, social inclusion and environmental protection.

The demand for environmental information on the part of external and internal users of financial statements has contributed to the development of a concept called "green accounting", "environmental accounting", "eco-accounting", and even "sustainability accounting" (Adams, 2004). Environmental sustainability is a rapidly developing and diverse field of practice. According to SustainAbility/UNEP (1998), it relates to the collation and communication of data - financial, quantitative and/or qualitative - about an organization's interactions with society. In the view of Gray, Jawad, Power and Sinclair (2001) and Ijeoma (2014), sustainability reporting can be in form of standalone triple bottom line reporting for management use or it may be for external consumption as a published corporate social responsibility report.

Sustainability efficiency enables organizations to consider their impacts on a wide range of sustainability issues. This enables them to be more transparent about the risks and opportunities they face. Sustainability reporting is the key platform for communicating sustainability performance and impacts. A sustainability report in its basic form is a report about an organization's environmental and social performance. A unified standard that allows reports to be quickly assessed, fairly judged and simply compared is a critical asset. As firms worldwide have embraced sustainability reporting, the most widely adopted framework has been the Global Reporting Initiative (GRI) Sustainability Reporting Framework.

Empirical Review

A number of studies on sustainability reporting have been conducted with divergent results, Omoike, Uwalomwa, Ilogho and Ajetunmobi (2018) investigated corporate social environmental reporting and its association with stock prices (using market price per share as at the financial year end) among listed firms in Nigeria. The study used a cross-sectional research design comprising 50 publicly listed companies across various sectors for the period of five years (2011– 2015). For the selected firms, the annual report was used to collect the data. This research utilizes the panel data regression in analyzing the influence of the independent variable (measured by corporate social and environmental expenditure) on the dependent variable measured using the market price per share) for the respective years. Also, in an attempt to examine the relatively market price per share across the sampled industries, the study made use of the one-way analysis of variance; while the Granger causality test was also conducted to ascertain whether bi-directional relationships exist between explanatory variable and the dependent variable (i.e. corporate social and environmental expenditure and market price per share). Findings from the study revealed that the association between corporate social and environmental expenditure and the market price of the firm (when considered in aggregate) is not significant. The result from the Analysis of Variance (ANOVA) showed that the market price per share is significantly different across the industries.

Emeka-Nwokeji and Osisioma (2019) in a study investigates how overall sustainability disclosures and it's disaggregated dimensions of environment, social and governance affect market value of firms in Nigeria as an emerging economy using company's' specific disclosures. Tobins Q were used to proxy firm market value. The study selected 93 out of 120 non-financial firms listed on the Nigerian Stock Exchange as at 2015. Ex Post Facto research design was adopted and the secondary data was collected from annual reports of sampled firms from 2006 to 2015 through content analysis. The data were analysed with descriptive statistics, correlation analysis, principal component analysis while pooled ordinary least squares regression was employed to test formulated hypotheses. The analysis showed that overall sustainability disclosures have significant positive effects on firm value. When treated individually, environmental sustainability disclosures and corporate governance disclosures have a significant positive effect on market value of firm. The study also reveal that social sustainability disclosures have negative and insignificant effect on market value of firm. Based on these findings, the study recommended among other that companies should foster greater sustainability and long-term value creation by integrating sustainability metrics into their reporting model and strategy.

Ekwueme, Egbunike and Onyali (2013) examined the relationship between sustainability reporting and corporate performance in Nigeria using primary data obtained through a structured questionnaire based on the five points Likert scale. The study employed descriptive statistics, Kolmogorov-Smirnov (K-S), One Sample T-test and Multiple Regression Techniques for data analysis, and found that corporate performance was positively connected to sustainability reporting. They therefore recommended the adoption of sustainability reporting practices by corporate organizations in Nigeria.

Atanda *et al.* (2021) examined the challenges faced by DMBs on sustainable operation in Nigeria. The study covered the period of 2014 – 2018. They employed qualitative content analysis using available information from audited reports and accounts that comprises of three dimensions of CSR. Descriptive tools and ordinary least square were used. The study finds that banks with high overall sustainability and environmental sustainability disclosure tend to have low firm value. Findings of the study also revealed that social sustainability disclosure has a non-significant association with firm value.

In a related study, Ifurueze, Etale and Bingilar (2013) examined the impact of environmental cost on corporate performance in Nigeria, using a sample of twelve oil companies quoted on the Nigerian Stock Exchange (NSE). Three indicators of environmental sustainable business practices were used as proxy for environmental cost, while ROTA was used as proxy for corporate performance. Multiple regression technique was employed to analyze secondary data obtained from the annual reports of selected companies for the eleven years period covering 2001 to 2011. The study found significant relationship between sustainable business practices and corporate performance.

Assessing the sustainability reporting in Nigeria, Owolabi, Taleatu, Adetula & Uwaigbe (2016) examined the extent of sustainability reporting by Lafarge Africa Plc, a high environmental-impact company operating in the building materials and quarrying sector; also winner of both the Environmental Sustainability and Stakeholder Engagement in Social Enterprise Report Awards (SERAs) in 2015. Data sourced from the 2014 annual report of the company examined through content analysis using the Global Reporting Initiative (GRI) guidelines as basis of assessment. The study revealed low sustainability reporting practice by the company (that is, no disclosures on human right issues, 3% environmental disclosures, and 30% disclosure based on 169 indicators).
Also, Asaolu, Agboola, Ayoola and Salawu (2011) carried out an assessment of the level of sustainability reporting in the oil and gas sector of Nigeria. Data were obtained for their study through content analysis of the annual reports of six multinational oil and gas companies. They found arbitrary and incompatible sustainability reporting disclosures among the selected oil and gas companies, therefore, recommended the introduction of sustainability reporting framework in the oil and gas sector of Nigeria.

Alshehhi, Nobanee and Khare (2018) investigated the relationship between corporate sustainability practices and financial performance through a systematic survey and content analysis of past empirical literature on the subject. The study involved a total of 132 research articles from around the World published between 1984 and 2017 in top-tier peer-reviewed journals. The time period distribution indicated that 20% of these papers were published between 2012 and 2013, 27% between 2014 and 2015 and 28% between 2016 and 2017. The study revealed that 78% of the research findings indicated positive connection between financial performance and corporate sustainability. They however noted the scarcity of research studies on this subject from developing countries and recommended further research to facilitate the understanding of the relationship between financial performance and corporate sustainability practices.

Otuya, Akporien and Ofeimun (2019) examined the influence of companies' governance process on sustainability reporting in Nigeria. The study was anchored on the stakeholders' and information cost theories and adopted the ex post facto research design. The population of the study was made up of all listed oil and gas companies in Nigeria. Data were obtained through manual content analysis of corporate financial statements using a modified checklist based on SEC (2018) Sustainability Reporting Guidelines to examine the level of disclosures by sampled firms for the period 2016 to 2018. The study deployed descriptive, correlation and regression analyses as data analytical techniques. Findings of the study revealed no significant positive association with board activity, board globalizing, executive compensation and profitability but a negative association with audit committee strength. The study concludes that good company governance practices promote sustainability reporting and recommends amongst others the internationalization of corporate board rooms for effective managerial expertise and technical collaborations.

Adegbie, Ogidan, Siyanbola and Adebayo (2020) evaluated the impact of environmental accounting on the share value of food and beverages companies quoted in Nigeria. The study population consisted of 28 quoted companies whose data were validated and gained reliability through the statutory audit of their financial statements. Descriptive and inferential statistics were used for the analysis of the data. The result showed that environmental accounting practices without moderating effect of firm size impact the share value of share. It also showed that with moderating effect of firm size, environmental accounting impact significantly the share value. The study concluded that environmental accounting influences the share value of companies in the food and beverages sector and recommended that management of the companies should incorporate corporate accounting and the disclosures in their financial statements so as to enhance investors' decision and have positive impact in the share values in the capital market.

Otuya and Akpoyibo (2022) examine board structure as determinant of corporate governance disclosure practices of listed companies in Nigeria. The study adopted the cross-sectional and longitudinal research designs and used content analysis of corporate financial statements and a modified corporate governance disclosure checklist based on NCCG (2018) standard to examine the level of disclosures by sampled industrial goods firms for the period 2016 to 2020. Findings of the study reveal that board independence is a major determinant of corporate governance disclosure. The study also reveals that CEO power and ethnic minority diversity have positive but not significant association with corporate governance disclosure, and that CEO power weakens the positive influence of board independence on corporate governance disclosures. The study concludes that board structure is a determinant of the corporate governance disclosure practices of listed industrial goods companies in Nigeria and recommends amongst others the need to review CAMA (2020) and NCCG (2018) to strengthen board composition and independence.

MATERIALS AND METHODS

Population and Data

The population of this study comprised of all the listed Deposit Money Banks (DMBs) in the Nigerian Stock Exchange (NSE). A total number of fifteen (15) listed DMBs were identified from the website of the NSE (www.nse.com).The simple random sampling techniques was adopted for the study. To this end, ten (10) deposit money banks were randomly selected from the population of the study. Secondary data were obtained from annual reports and financial statements of the sampled banks for the study. The data covers period of four years ranging from 2017 to 2020.

Model Specification

To be able to empirically analyze the relationship between corporate sustainability efficiency and firm value, a regression analysis model was adapted as indicated below:

FMV_{it}= *f (SUSTAINABILITY EFFICIENCY,)*…………………………………………………….(i)
This can be stated in econometric form
$FMV_{it} = \beta_0 + \beta_1 SOC_{it} + \beta_2 ECO_{it} + \beta_3 ENV_{it} + \beta_2 COM_{it}\ U_{it}$... (ii)
Where:
FMV= Firm value measured as the stock market prices at the end of the financial year
SOC = Social efficiency as index of socio efficiency in the GRI (2018) index
ECO = Economic efficiency as index of economic efficiency in the GRI index
ENV = Environmental efficiency in the GRI indiex
COM = Bank complexity measured in terms of size of the bank
e = Error terml i = Banksl t = Time dimension of the Variables
βo = Constant; β_1, β_2, β_3 = Coefficients of slope parameters
In assessing the amount of social, economic and environmental sustainability efficiency in annual reports, the Global Reporting Initiative (GRI) Reporting Guidelines (2018) was adopted in this study. These disclosure procedures include 30 items to determine the magnitude of sustainability performance relating to economic, social, and environmental perspectives (10 items for each perspective). The index uses a binary coding system which assigns 1 if item is disclosed and 0 if it is not disclosed (Otuya, Donwa & Egware, 2017; Otuya and Akpoyibo, 2022; Hossain & Hammami, 2009).

Data Analysis and Presentation
Table 1: Descriptive Statistics

	FMV	SOC	ECO	ENV	COM
Mean	186.4400	0.203500	0.800000	0.750000	584.1
Median	49.25000	0.160000	0.11000	0.340000	325.0
Maximum	306.000	0.650000	0.864000	0.833000	1386.0
Minimum	1.600000	0.000000	0.000000	0.144000	120.0
Std. Dev.	25.1906	0.173396	0.405249	0 .019546	235.4
Skewness	1.482645	0.832916	1.684024	1.318392	0.2435
Kurtosis	3.828867	3.257850	6.114583	4.288576	11.367
Jarque-Bera	7.899972	2.367905	17.53698	7.177551	7.6992
Probability	0.019255	0.030067	0.000156	0.027632	0.0005
Sum	5728.800	4.070000	16.00000	75.00000	3534.9
Sum Sq. Dev.	3434953.	0.571255	19.20000	19.75000	7485.9.
Observations	60	60	60	60	60

Source: Author's Computation with E-View 9.0
KEY: FMV: Firm Value; SOC: Social Efficiency; ECO: Economic Efficiency
ENV: Environmental Efficiency; COM: Bank Complexity;

The result revealed that the firm values, social efficiency, economic efficiency, environmental efficiency and bank complexity, in listed Deposit Money Banks in Nigeria for the period of investigation are 186.4, 0.2035, 0.8000, 0.750 and 584.1 respectively. The maximum and the minimum values are 306. & 1.60, 0.650 & 0.000, 0.833 & 0.144 and 1386.0 & 120.0 respectively. The standard deviation values of 25.190, 0.173, 0.405, 0.019 and 235.4 revealed the rate at which the share prices, socio efficiency, economic efficiency, environmental efficiency and bank complexity for the sampled Deposit Money Banks in Nigeria deviated from their respective averages or expected value. Also, it was discovered that all the variables were positively skewed. The Jarque-Bera and probability values revealed that the adopted sustainability practices had a statistical and significant impact in determining the firm value of Deposit Money Banks in Nigeria.

Table 2: Correlation Statistics

	FMV	SOC	ECO	ENV	COM
FMV	1.000000				
SOC	0.368767	1.000000			
ECO	0.052159	0.020604	1.000000		
ENV	0.245905	0.017012	0.003138	1.000000	
COM	0.348300	0.147494	0.232634	0.219594	1.000000

Source: Author's Computation with E-View 9.0
KEY: FMV: Firm Value; SOC: Social Efficiency; ECO: Economic Efficiency; ENV: Environmental Efficiency; COM: Bank Complexity

A correlation matrix is adopted to check the level of relationship between the dependent and independent variables on one part, and among the independent and control variables on the other. The correlation statistics shows that FMV has a positive relationship with SOC (r=0.368767), ECO (r=0.052159), ENV (r=0.245905), and COM (r=0.348300). The correlation also shows SOC that has a positive relationship with ECO (r=0.020604), ENV (r=0.017012) and COM (r=0.147494). ECO is observed to have a positive correlation with ENV (r=0.003138) and COM (r=0.232634). Finally, ENV is observed to have a positive correlation with COM (r=0.219594).

Table 3 Regression Analysis

Dependent Variable: FMV
Method: Pooled Least Squares
Date: 11/27/21 Time: 03:41
Sample: 2017 2020
Included observations: 15
Cross-sections included: 4
Total pool (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.130199	0.014106	-9.229773	0.0000
SOC	5.58E-07	1.93E-08	28.86292	0.0000
ECO	2.57E-07	9.20E-09	27.92312	0.0000
ENV	8.29E-07	6.39E-08	12.98198	0.0000
COM	2.383294	0.263853	13.94895	0.5849

R-squared	0.385916	Mean dependent var	0.144811
Adjusted R-squared	0.223891	S.D. dependent var	0.101131
S.E. of regression	0.042440	Akaike info criterion	-3.461652
Sum squared resid	0.353027	Schwarz criterion	-3.395686
Log likelihood	350.1652	Hannan-Quinn criter.	-3.434956
F-statistic	31.09974	Durbin-Watson stat	3.478093
Prob(F-statistic)	0.000000		

Source: Author's Computation with E-View 9.0

Table 3 shows the summarized regression results. The regression estimates indicate that we can explain 38.5% of the firm value using sustainability efficiency measures as determinants while 61.5% of the variation is explained by other factors outside the model and the error term. The Prob(F-Statistic) of 31.1 ($P<0.05$) also indicates that sustainability efficiency practice is a significant determinant of firm value of Deposit Money Banks in Nigeria.

DISCUSSION OF FINDINGS

Social Efficiency and Firm Value

The study reveals that there is a significant positive between social efficiency and market value of listed Deposit Money Banks in Nigeria. This result meets our expectation and is consistent with prior studies such as Ifurueze, Etale and Bingilar (2013), Owolabi, Taleatu, Adetula & Uwaigbe (2016), Otuya and Akpoyibo (2022) and Cortez and Cudia (2011).

Economic Efficiency and Firm Value

Results from our regression statistics show that economic efficiency practice has a significant positive effect on market value of Deposit Money Banks in Nigeria. This result meets our expectation and is consistent with prior studies such as Owolabi, Taleatu, Adetula & Uwaigbe (2016).

Environmental Efficiency and Firm Value

Regression estimates reveal a significant positive effect of environmental efficiency practice on market value of Deposit Money Banks in Nigeria. This result meets our prior expectation. The result is in agreement with previous studies such as Alshehhi, Nobanee and Khare (2018), Edike and Otuya (2018) and Adegbie, Ogidan, Siyanbola and Adebayo (2020).

Bank Complexity and Firm Value

Regression estimates reveal a non-significant positive effect of bank complexity on market values of Deposit Money Banks in Nigeria. This result did not meet our prior expectation. We expected bank complexity in terms of size to significantly influence share prices.

CONCLUSION

This study was carried out to examine corporate sustainability efficiency as a determinant of market values of listed Deposit Money Banks in Nigeria. The study showed that socio, economic and environmental efficiency practices have a significant positive effect on market values of listed Deposit Money Banks in Nigeria. The study also finds a positive but not significant relationship of bank complexity with market value of listed Deposit Money Banks in Nigeria and concludes that corporate sustainability efficiency practices enhance the share prices of listed Deposit Money Banks in Nigeria.

Recommendations

In line with the findings of this study, the following recommendations are proffered:

1. Listed Deposit Money Banks should intensify efforts to ensure adequate attention to its social efficiency practices to attract higher stock market values. This can be achieved through engaging in social responsibility activities and reporting same in their financial statements.
2. It is also suggested that banks should engage in activities that improve on its economic efficiency. Banks should improve on procurement activities, product innovation and risk assessment so as to improve its market prices as observed in this study.
3. Listed Deposit Money Banks should improve on their environmental efficiency activities. In this regard it is suggested that banks should promote environmental audit, research and development on green environment and management of wastes.

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