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Effect of Social Responsibility Costs on Value of Quoted Firms in Nigeria: Sectoral Analysis

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Abstract
This study investigated the effect of social responsibility costs on value of quoted firms in Nigeria. The study employed *ex post facto* research design and extracted data from annual reports of twenty (20) quoted firms purposively selected from three sectors in the Nigerian Stock Exchange from 2005 to 2015, a period of considerable liberalization of the Nigerian economy. Using the panel least squares regression in a data set of sixty seven (67) observations in a longitudinal framework, the result showed that social and environmental costs have significant effect on value of quoted firms in the identified sectors studied. The study established that each of the sectors' social and environmental costs have significant effect on net assets book value and further provided evidence that the financial services sector was more socially friendly than the consumer goods and industrial goods sectors, while the consumer goods sector made more investments on social and environmental activities than the industrial goods sector. The study therefore recommended that government and host communities should leverage on the possibilities of proactive dialogue to encourage firms to commit a significant portion of their net income on social responsibility activities. The Nigeria Stock Exchange should ensure that there is standard reporting format that would incorporate social and environmental costs and pertinent stock information in annual reports so as to provide first-hand information for investors and other stakeholders willing to analyze the social costs and market performance trend within a given period. Companies should endeavor to identify and invest in relevant social and environmental areas that would create an impact on the generality of the society.

Keywords: Social responsibility costs, Net Assets Book Value, Financial services sector, Consumer Goods Sector, Industrial Goods sector, Nigeria Stock Exchange

1. Introduction

Social responsibility accounting is increasingly receiving considerable attention in the socio-economic environment of Nigeria consequent upon a combination of dynamics such as concerns about globalization, growing mistrust of businesses by the society, corporate scandals, the need for firms to reciprocate the patronage of society, pressures from non-governmental organizations against adverse corporate behavior and unethical practices, initiatives from government, public opinion, agitations from environmental activists, externality effect of the activities of firms and the need for firms to engage in processes that would engender peaceful co-existence to enhance sustainable business success.

Chartered Institute of Bankers of Nigeria (2009) identified that pressures from society has changed the value perception of businesses and now engraved with the rationale that sustainable growth and maximization of shareholders' wealth can be achieved through market oriented and responsible behavior. They argued that companies are thinking of better ways to contribute towards sustainable and long term business success rather than merely seeking short term goals and objectives.

The effect of globalization had exposed firms to intense competition and at the same time opportunities; therefore, firms that practice social responsibility are likely to have an edge over others that do not engage in the practice. Therefore, social responsibility cost reporting is capable of enhancing corporate reputation and consequently guarantee competitive advantage.

In view of the above, firms need to simply oblige and build their social responsibility and environmental related practices as a strategy into policy documents consequent on the diverse expectations of varying stakeholders . It

is the firm's duty to satisfy the expectations of these stakeholders without endangering its main objective of maximizing shareholders wealth and guaranteeing the firm's long term stability to enhance its value and other objectives.

The necessity to provide information for stakeholders influence and engagement has made the reporting of social and environmental cost obligatory on firms. Farouk and Hassan (2013) opined that numerous advantages abound for firms that practice corporate social responsibility and its reporting and that fulfilling wealth maximization solely for shareholders would be incapable of satisfactorily providing an assurance for the firm's future financial standing or value.

The performance of firms to guarantee long term stability and enhance its value amongst other factors is subject to the quality of the environment in which it operates. It is therefore implicit for firms to deliberately create a conducive and un-harmful environment in their operations if they are to operate successfully and engender long term stability. Not only will harmful activities deter employees' productivity, performance and disposition, the society will also resist such activities and the resultant unrest will cripple the operations of firms and affect its turnover and performance with tendencies to reduce the share prices and ultimately the value of the firm. Therefore, it is imperative for firms to incorporate and adopt socially responsible behavior as a corporate culture. This implies that firms need to integrate their social and environmental costs structure into their overall business model.

The vital question now is; would expenditure on social responsibility by firms boost performance and achieve sustainable development guarantee long term stability and value? This takes us to the big question of whether social and environmental activities have an effect on value of quoted firms in Nigeria.

2. Review of Related Literature

2.1 Conceptual Framework

Social responsibility costs occurred as an upshot of the social and environmental actions and investments made by companies within the business environment where they operate. These actions are mostly in compliance to laws and sometimes obligatory, and done perceivably to earn a reputation for further business development and guarantee continuous patronage from the society.

The European Commission (2016) refers to social responsibility as voluntary actions by companies beyond what is stipulated by government rules and regulations to accomplish social and environmental goals in the course of their activities. They stated that the engagement in corporate social responsibility by companies attracts benefits accruable to the companies, the society and the economy.

Brusseau (2016) posits that social responsibility consist of two meanings. First that it is a general concept regarding the actions of firms that emphasizes both responsibilities to make wealth and that of interacting ethically with the surrounding community. Second, that it is a specific idea of the responsibility to make profit and also relating with wider questions of community welfare.

Adeneye and Ahmed (2015) opined that social responsibility defines the capability of a company to be socially answerable to the growth and development of the environment in which it operates.

The Institute of Chartered Accountants of Nigeria (2014) defined social responsibility as the social responsibilities of companies towards the society, decisions on ethical values and showing respect for individuals, the society and the environment. It also noted that social responsibility include companies' compliance with legal requirements.

Ajide and Aderemi (2014) noted that social responsibility concept is viewed as companies' activity to impact on society in a sustainable manner and in return also positively influence those companies that engage in creating that support. This implies that proving support for the society is also beneficial to those companies that engage in it.

The concept of social responsibility is buttressed by the view that firms cannot separate themselves from the broader society as economic entities operating in the environment. The concept encourages firms to be accountable to varied set of stakeholders rather than just shareholders and have concern for environmental protection, employees' welfare, the community and the broader society in a sustainable manner (International Institute for Sustainable Development 2013).

The Chartered Institute of Bankers, Nigeria (2009) posits that social responsibilities by firms are intentional practices to link social and environmental actions into their corporate philosophy and activities.

Daft (2008) posits that corporate social responsibility is the obligatory actions by management of companies to make reasonable choices that would contribute to the welfare of stakeholders and the organization.

Kreitner (2007) defines social responsibility as the idea that firms have an obligation outside what is stipulated by law or labour contract to fundamental group of persons in society other than the shareholders.

Gray, Owen and Maunders (1987) refer to social accounting as the practice where companies communicate the social responsibility and environmental effects of their profitable activities to specific stakeholders that have interest in the business. This implies that social and environmental effects and costs that are not incorporated in the conventional global accounting practices are communicated quantitatively to certain interest groups with a view to strengthen the mutual relationship between the company and those interest groups and the society at large.

2.1.1 Net Assets Book Value

Net assets book value is a means to determine the value of a firm that is based on the net of its total assets and total liabilities. It is calculated as total assets less total liabilities. It is also known as net worth or shareholders' equity of a company (Olowe 2009, Okafor, Ekwe and Jones 2016).

2.1.2 Economic sustainability

This model implies that businesses should prefer long term financial stability over more risky short term anticipated huge profits. Sustainability as a model implies that valued corporate plans are not about immediate or short term enormous profits; however, they should avoid actions that would result in catastrophic losses.

2.1.3 Social sustainability

This connotes that firms should consider the need to balance the lives of people and the way they live as former carry out their activities. This theory indicates that firms should entrench a culture of human respect in their actions both in the work environment, remunerations and superior-subordinate relationships.

2.1.4 Environmental sustainability

This is derived from the assertion that natural resources are limited and they deteriorate considerably. Therefore it should be preserved in a manner that would make the next generation to enjoy the same quality of life that is presently experienced. Preservation of the resources therefore becomes tremendously important (Brusseau 2016).

2.2 Theoretical Framework

Social responsibility accounting has related theoretical frameworks but the researchers relied on the following two:

2.2.1 Stakeholder theory

The theory is borne out on the premise that businesses have connections with other stakeholders other than the owners and as such management should incorporate the need to satisfy the interest of the various stakeholders. Harrison, Bosse and Phillips (2010) noted that firms must be managed not only for shareholders but more generally for stakeholders.

Watts and Zimmerman (1978) postulated that stakeholders' theory assume that the reporting on social and environmental actions by organizations are in response to pressures from varying stakeholders. They noted that

such stakeholders amongst others are communities, shareholders, employees, customers, environment and suppliers. This implies that as pressure mounts, organizations are obliged to take social responsibility actions.

2.2.2 The Triple Bottom Line Theory

This theory implies that corporate leaders should tabulate performance results not only in monetary terms of profit generation but also on social and environmental activities. It also states that businesses should obtain sustainable results on the three areas namely;

2.3 Empirical Review

The field of social and environmental cost on corporate performance and or value of firms have been assessed by different researchers. Several views had been opined based on empirical testing arriving at different results with the adoption of varying data and data analytical techniques. Some of the handy empirical studies from such researchers are reviewed herein with a view to achieving the objectives of this study.

Masoud and Halaseh (2017) studied relationship between corporate social responsibility (CSR) and company performance in Jordan. Data were purposively collected from cross section of 107 Jordanian companies listed on the Amman Stock Exchange (ASE) from 2002 to 2011. The study used corporate social responsibility index variables such as employee relation, environmental, community, product quality and governance which were all adopted as independent variables. Company size, company age, leverage and company risk (beta) were used as control variables.

Specifically, the panel least squares regression was primarily used to analyze the relationship between corporate social responsibility variables and the accounting and market performance based variables. They also found that there is positive but not significant relationship between CSR and market based performance ratios of earnings per share, price-earnings ratio and price to book value of the firms. They stated that the result of random effect regression recognized negative relationship between CSR and some accounting and market based performance criteria specifically return on assets, net income to sales, price-earnings ratio and earnings per share of the firms.

Adeneye and Ahmed (2015) evaluated corporate social responsibility (CSR) and company performance in UK. The study used 500 firms operating in the UK as its sample size and engaged descriptive research design. Corporate social responsibility was measured by the CSR index while the performance proxies adopted were market to book value, company size and return on capital employed. The CSR index variables were employed as the explanatory variables while market to book value, company size taken as total assets and return on capital employed were each assumed as the dependent variable. The data analytical tools used were descriptive statistic, correlation and regression. Their major finding was that there is significant positive relationship between corporate social responsibility and market to book value.

Akinlo and Iredele (2014) examined impact of corporate environmental disclosure on market value of quoted companies in Nigeria. The study used secondary data, purposively selected based on availability of environmental information disclosures, obtained from various annual reports and financial statements of fifty companies listed in the Nigeria Stock Exchange during the period 2003-2011.

The study therefore used Environmental pollution and control (EPC), Energy policies (EP). Material recycling and conservation of resources (Biodiversity), Waste management (WM). Award received for installing environmental system (AWR), Environmental research and development (ERD), Compliance with environmental laws and regulations (CEL), as proxies for Corporate Environmental Disclosures (CED) and used the independent variable while firms size (total assets) as extraneous variable. Tobin's Q -Market value was used as the dependent variable.

The following equation was adopted as market value (Tobin's Q) =

$$\frac{\text{Market Value + Total Liabilities}}{\text{Total assets}}$$

Their study used descriptive statistics, correlation and the ordinary least squares based regression to analyze the relationship of the variables. The result of the regression analysis showed that Corporate Environmental Disclosure has significant positive impact on Market Value. They also claimed that Environmental pollution and control policy (EPC), Waste Management Cost (WSM), and Cost of compliance with environmental Laws (CEL) have negative impact on Market Value. The study recommends that businesses should take caution in

areas where environmental activities impact negatively on the Value of the firm and also invest in areas that enhance value for the firm.

Fodio, Abu-Abdissamad and Oba (2013) investigated corporate social responsibility and firm value of Nigerian financial services sector using 35 firms listed in the Nigeria Stock Exchange (NSE) as their sample size to achieve the objective of the study. Their work utilized secondary data extracted from the Nigeria Stock Exchange FactBook and annual reports of firms in the financial service sector for the period 2004 to 2008. The study used environmental performance, human resource management and community development as the independent variables and introduced four control variables namely; firm size, growth, leverage and dividend payment and the Tobin's Q (TQ) which reflects the quotient of market value to the replacement cost of the assets was adopted as the dependent variable. The study employed the least squares regression technique to analyze the variables collected.

They claimed that the least squares regression results showed that the sector classification and earnings in previous years significantly affect the firm's CSR score positively without necessarily affecting value. The test statistics indicate that both variables appropriately address the reverse causality pattern and that the value of firm and total CSR score tend to be mutually supporting. The study concluded that social responsibility is not detrimental to the welfare of the firm's shareholders.

3. Methodology

This study therefore adopted ex post facto research design. It specifically used cross sectional and times series (longitudinal) data to evaluate the relationship of the variables over time. The reason for the choice of this research design is founded on the fact that the data cannot be manipulated.

3.1 Method of Data Collection

The study extracted secondary data from various annual reports and financial statements of selected firms listed in the Nigeria Stock Exchange based on their heterogeneity and availability of data. The study purposively selected 20 listed companies from the financial services, industrial and consumer goods subsectors as delineated by the Nigeria Stock Exchange. They were found to have considerable data on social cost and its related matters. The longitudinal data from each company spans across 11 years from 2005 to 2015.

The variables from a pool of heterogeneously selected companies over time that were extracted include net assets book value (net worth) which served as dependent variable and as proxy for value of the quoted firms and investments in health, education, socials and recreation, and community development and environmental costs which were collectively employed as the explanatory variables and as proxies for social costs.

3.2 Data Estimation Techniques

The Augmented Dickey-Fuller unit root test, panel least squares regression and Wald test were used to estimate the data for the study.

The Augmented Dickey-Fuller (ADF) unit root test was conducted to check for stationarity of the variables so as to ascertain the order of integration. The test is conducted because it control higher order serial correlation by adding lagged of the dependent variable ΔY_t. The following generic equation was used to check the stationarity of the time series data;

$\Delta Y_t = \beta_0 + \beta_1 t + \partial Y_{t-1} + \sum \alpha_i \Delta Y_{t-i} + \varepsilon_t$ (Gujarati 2013).

The study used Panel least squares regressions because each of the cross section quoted firms considered were observed over time. Specifically, the study used pooled regression, fixed effect and random effect regression while the Hausmans test was used to distinguish between the fixed and random effects (Gujarati 2013).

Fixed effect regression was used because it states the values of the dependent and independent variables for each sector as deviations from their individual mean values and helps in establishing the effect of the cross section data with respect to the ascertaining the difference between the sectors. The equation for fixed effect regression can be expressed as; $LNABVit = \alpha + \alpha_1 Dum2 + \alpha_2 Dum3 + \beta_1 LINED_{it} + \beta_2 LINHT_{it+} \beta_3 LINSOR_{it+} \beta_4 LINCDE_{it+} e_{it}$, Since there are 3 sectors, one sector was used as the benchmark and only two dummy variables were introduced to avoid falling into the dummy variable trap. The differential intercept coefficients were used to analyze the effect of each sector. The study used the industrial goods sector was used as the benchmark while the consumer goods and financial sectors were represented by dummy 2 and dummy 3 respectively (Gujarati 2013).

Random effect regression otherwise called the error component model (ECM) was engaged to ascertain the level of relationship between variables in a panel. The intercept value is expressed as $\beta_{0i} = \beta_0 + e_i$ which implies that the individual differences in the intercept values of each quoted firm are reflected in the error term.

Hausman's test is a validity test to discriminate between the fixed and the random effect regression. The chi square was used to determine the choice of the preference. If the probability of the chi square is 5% or less the null hypothesis is rejected and the fixed effect favoured, otherwise the random effect is selected (Gujarati 2013)

The Wald test was finally used to test the joint significance of the sectors to ascertain long run equilibrium relationship before dropping any of the independent variables. It is an F test for the significance of all the variables in the model based on the hypothesis below;
The null hypothesis:
H_0:$\beta_1=\beta_2=\beta_3=\beta_4=0$ (there is no long run relationship)
The alternative hypothesis:
H_I: $\beta1\neq\beta_2\neq\beta_3\neq\beta_4\neq0$ (there is long run relationship)

3.3 Model Specification and Operational Definition of Variables

The model specification was based on the conceptual and theoretical frameworks, and empirical reviews supporting that investments in corporate social responsibility have effect on firms' performance and value. Specifically, the study adapted the Harrison *et.al* (2010) stakeholders' theory and the models of Akinlo and Iredele (2014) and Masoud and Halaseh (2017) but made modifications in respect of the independent variables and the use of networth of quoted firms.

Consequently, the functional forms of the model are;

NABVit = f (INEDit, INHTit, INSORit, INCDEit)
Where;
NABV = Net Assets Book Value (Net Worth)
INED = Investments in Education
INHT = Investments in Health
INSOR = Investments in Socials and Recreation
INCDE = Investments in Community Development and Environment
i = Cross section of companies
t = time period of data

The independent variables as represented in investments in education, health, socials and recreation and, community development and environmental costs were jointly adopted as proxy for social costs. Net assets book value was employed as the dependent variable and as proxy for value of quoted firms in Nigeria.
Since the variables above are merely functional equations and do not have probability distribution, we include the random or stochastic terms to represent and describe how the dependent variables are related to the explanatory variables and a stochastic error term or stochastic disturbance term as follows;
$NABVit = \beta_0+\beta_1INED_{it}+\beta_2INHT_{it}+ \beta_3INSOR_{it}+\beta_4INCDE_{it}+ e_{it}$

The data extracted have different range of values and magnitude and hence transformed to log linear form. The transformation brought the variables to the same magnitude or close to par level. According to Gujarati (2006), transformation of variables included in the model can minimize if not solve the problem of collinearity.
The following model was therefore applied in this study;

$$LNABVit = \beta_0+\beta_1LINED_{it}+\beta_2LINHT_{it}+ \beta_3LINSOR_{it} + \beta_4LINCDE_{it}+ e_{it}$$

Where L is natural logarithm (i.e., log to base e, and where e=2.718)

4. Results and Discussions

Discussion of Augmented Dickey-Fuller Unit Root Test

The results of the (ADF) test are presented below:

Table 4.1. Augmented Dickey-Fuller (ADF) unit root test

Variables	T-Stat	P-value	Order of Integration
LNABV	-4.349913	0.0005	1(0)
LINED	-5.066442	0.0000	1(0)
LINHT	-7.198829	0.0000	1(0)
LINSOR	-13.36302	0.0000	1(0)
LINCDE	-8.955329	0.0000	1(0)

Source: Researcher's computation using Eviews version 9

From the ADF unit root test in table 4.1 above, all the individual variables have negative t-statistic coefficient values and are significant at 5% level of significance. We therefore reject the null hypothesis and conclude that all the variables are stationary at ordinary level.

4.1 Analysis and Discussion

The results of pooled, fixed and random effect regressions of social responsibility costs variables on net assets book value or net worth of the selected quoted firms are shown in the appendix. However, the result of the Hausman's test in table 4.2 confirms that the fixed effect regression is preferred based on the probability of the chi square estimate of 11.656 that is significant at 5% level of significance. The fixed effect regression showed an intercept coefficient of 6.990 which is positively significant and signifies the average effect of net assets book value of the quoted companies of all the independent variables excluded from the model. In other words, it is the average effect of net assets book value when social costs variables (investments in education, health, socials and recreation, and community development and environmental costs) included in the model are data sets equal to zero.

From the t- statistic estimates, investments in social and recreation has positive significant effect on net assets book value of the quoted firms at 5% level of significance. The slope coefficient of 0.134 is the elasticity of net assets book value with respect to investments in social s and recreation holding investments in education, health, community and environmental costs variables included in the model constant.

The result of the fixed effect signifies that the coefficient of multiple determination, which is the adjusted R squared indicate that 74.7% of the total variation of net assets book value is as a result of variation of investments in education, health, social and recreation, community development and environmental cost variables included in the model. The coefficient of the F statistic of 10.274 is significant at 0%.

Consequently, we carried out the fixed effect with dummies and coefficients to ascertain the differences in the sectors.

Table 4.2: Hausman's Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	11.656463	4	0.0201

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
LINED	-0.009526	0.032248	0.001406	0.2652
LINHT	-0.137332	-0.166574	0.001411	0.4364
LINSOR	0.134469	0.203751	0.001888	0.1109
LINCDE	0.108035	0.150998	0.001827	0.3148

Cross-section random effects test equation:
Dependent Variable: LNABV
Method: Panel Least Squares
Date: 02/14/17 Time: 08:56
Sample: 2005 2015
Periods included: 11
Cross-sections included: 18
Total panel (unbalanced) observations: 67

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.989844	0.374872	18.64597	0.0000
LINED	-0.009526	0.112603	-0.084597	0.9330
LINHT	-0.137332	0.105028	-1.307570	0.1977
LINSOR	0.134469	0.100560	1.337195	0.1879
LINCDE	0.108035	0.114445	0.943994	0.3502

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.827419	Mean dependent var	7.428978
Adjusted R-squared	0.746882	S.D. dependent var	0.796123
S.E. of regression	0.400537	Akaike info criterion	1.266663
Sum squared resid	7.219330	Schwarz criterion	1.990592
Log likelihood	-20.43321	Hannan-Quinn criter.	1.553124
F-statistic	10.27370	Durbin-Watson stat	0.765174
Prob(F-statistic)	0.000000		

Source: Researchers computation using Eviews version 9

4.2 Analysis and Discussion of Fixed Effect Pooled with Dummies

The result of the fixed effect pooled with the dummy variables in table 4.3 indicate that the all the coefficients of the explanatory variables are independently significant except investments in education. From the t-statistic estimates, investment in health has negative significance on net assets book value whereas investments in social

and recreation, and community development and environmental costs each has positive significance on net assets book value of quoted firms. The result also reveals that investments on social and environmental issues from each of the sectors have statistical significance on their net worth but the rate at which they invest differ from sector to sector. The nature of their different investment rate is captured in the discussion of the coefficients.

The adjusted R squared of 51.4% is the total variation of three sectors net assets book value as a result of variation in investments in education, health, social and recreation, community development and environmental collectively in the model.

Table 4.3: Fixed Effect Pooled with Dummy Variables
Dependent Variable: LNABV
Method: Panel Least Squares
Date: 02/14/17 Time: 08:56
Sample: 2005 2015
Periods included: 11
Cross-sections included: 18
Total panel (unbalanced) observations: 67

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.437995	0.370178	14.69023	0.0000
LINED	0.032188	0.114723	0.280567	0.7800
LINHT	-0.228478	0.101891	-2.242366	0.0286
LINSOR	0.228266	0.091616	2.491552	0.0155
LINCDE	0.292574	0.114684	2.551133	0.0133
DUM2	0.512233	0.197888	2.588497	0.0121
DUM3	1.046607	0.200190	5.228078	0.0000

R-squared	0.558144	Mean dependent var	7.428978
Adjusted R-squared	0.513958	S.D. dependent var	0.796123
S.E. of regression	0.555031	Akaike info criterion	1.759021
Sum squared resid	18.48356	Schwarz criterion	1.989362
Log likelihood	-51.92722	Hannan-Quinn criter.	1.850168
F-statistic	12.63180	Durbin-Watson stat	0.365492
Prob(F-statistic)	0.000000		

Source: Researchers computation using Eviews version 9

4.3 Analysis and Discussion of Fixed Effect Pooled with Coefficients

The functional definition of coefficients C(1), C(2),C(3),C(4),C(5),C(6) and C(7) represent the industrial sector, investments in education, investments in health, investments in social and recreation, community development and environmental costs, the consumer goods and the financial sectors respectively.

The industrial sector as the benchmark had coefficient of 5.437995 which is positively significant and it signifies the level of investments by the industrial sector and its effect on net assets book value. The coefficient of C (2) denotes the investment on education and it has no significant effect on net assets book value independently. Investment in health with -0.288478 as coefficient C (3) individually has negative significant effect on net assets book value. Coefficient C (4) with 0.228262 representing investments in social and recreation has positive significant effect on net assets book value independently. Investments in community development and environment are represented by coefficient C (5) and it also has positive significant effect on net assets book value separately.

Coefficients C (6) as identified represent the consumer goods sector. The coefficient of 0.512233 is the level at which the consumer goods sector invest in the social costs variables more than the industrial sector. It the actual coefficient of the consumer goods sector is 5.950228. Similarly, the coefficient of 1.046607 signifies the rate at which the financial sector invests in social costs variables more than the industrial goods sector. This implies that the actual coefficient of the financial sector is 6.484602. This connotes that the financial sector is more

responsive to social responsibility costs than the industrial and consumer goods sector while the consumer goods sector approaches investments in social and environment issues better than the industrial goods sector though this sector also engage in the investment significantly.

Table 4.4: Fixed Effect Pooled with Coefficients

Dependent Variable: LNABV
Method: Panel Least Squares
Date: 02/14/17 Time: 08:58
Sample: 2005 2015
Periods included: 11
Cross-sections included: 18
Total panel (unbalanced) observations: 67
LNABV=C(1)+C(2)*LINED+C(3)*LINHT+C(4)*LINSOR+C(5)*LINCDE+C(6)
*DUM2+C(7)*DUM3

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	5.437995	0.370178	14.69023	0.0000
C(2)	0.032188	0.114723	0.280567	0.7800
C(3)	-0.228478	0.101891	-2.242366	0.0286
C(4)	0.228266	0.091616	2.491552	0.0155
C(5)	0.292574	0.114684	2.551133	0.0133
C(6)	0.512233	0.197888	2.588497	0.0121
C(7)	1.046607	0.200190	5.228078	0.0000

R-squared	0.558144	Mean dependent var	7.428978
Adjusted R-squared	0.513958	S.D. dependent var	0.796123
S.E. of regression	0.555031	Akaike info criterion	1.759021
Sum squared resid	18.48356	Schwarz criterion	1.989362
Log likelihood	-51.92722	Hannan-Quinn criter.	1.850168
F-statistic	12.63180	Durbin-Watson stat	0.365492
Prob(F-statistic)	0.000000		

Source: Researchers computation using Eviews version 9

4.4 Analysis and Discussion of Wald Test

The inclusion of the dummy variables was subjected to a validity test, the Wald test, to confirm their joint influence on the model. Table 4.40 is the result of the Wald test. From the test statistic, the F statistic of 14.24053 at k=2 and n=60 is significant at probability of 0.0000. The chi-square value of 28.48106 is also significant with probability of 0.0000. Since the test statistic is significant, we conclude that the dummies jointly have influence on the model and the restrictions are linear in coefficients.

Table 4.5: Wald's Test
Wald Test:
Equation: Untitled

Test Statistic	Value	Df	Probability
F-statistic	14.24053	(2, 60)	0.0000
Chi-square	28.48106	2	0.0000

Null Hypothesis:
C(6)=C(7)=0
Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(6)	0.512233	0.197888
C(7)	1.046607	0.200190

Source; Researchers computation using Eviews version 9

4.5 Test of Hypothesis.

H_0: The effect of social responsibility costs on net assets book value of quoted companies in Nigeria is not significant.

To test the hypothesis:

H0 = β1 = β2 = β3= β4 = 0 (i.e. all slope coefficients are simultaneously equal to zero)

H1 = β1 ≠ β2 ≠ β3≠ β4 ≠ 0 (i.e. not all slope coefficients are simultaneously equal to zero)

The F statistic test was used to determine the overall significance of the model. From the fixed effect regression analysis, the F statistic coefficient of 10.273 has probability value of 0.000 and it is sufficiently low. This indicates that the F statistic is rightly specified. We therefore reject the null hypothesis and conclude that there is significant effect of social responsibility costs on net assets book value of quoted firms in Nigeria.

5. Conclusion and Recommendations

5.1 Conclusion

Based on the the panel regression results, investments in social and recreation independently has positive significant effect on net assets book value of quoted firms in Nigeria. The study revealed that the three sectors independently made investments that had significant effect on their net assets book value. However, the financial sector carried out social responsibility investments more than the consumer and industrial goods sector while the consumer goods sector made investments on social responsibility activities more than that done by the industrial sector.

The implication is that the financial sector has management philosophy that encourages receptiveness in engaging social responsibility matters and is more societal friendly than the others sectors studied. The study also revealed that the 3 sectors had shown sustained awareness of the importance of social responsibility as demonstrated in the progressive investments on social responsibility issues within the period. In the long run, firms' positive actions on social responsibility would build trust and confidence for a mutually beneficial relationship between the companies and the society in such a manner that would boost value of firms.

5.2 Recommendations

The findings of this research have several implications for companies, government and various stakeholders. Based on the findings from the study, the following recommendations are made;

Government and host communities should leverage on the possibilities of proactive dialogue to encourage firms to commit a significant portion of their net income on social responsibility activities, the Nigeria Stock Exchange and the Securities and Exchange Commission should persuade companies to include detailed reports on social responsibility activities in the annual reports as part of their directors' report, companies should endeavor to identify relevant areas that would create an impact on the generality of the society. Such investments should not only be those that impact on their business in the short run alone but also in the long term in a manner positively affect their value and the industrial and consumer goods sectors should provide more social facilities within their area of operations in a way it would engender peaceful coexistence and in the long run boost their net worth. The financial sector should invest more on education and health, and consistently improve on socials and community and environmental related issues.

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Panel Least Squares Regression

POOLED

Dependent Variable: LNABV
Method: Panel Least Squares
Date: 02/14/17 Time: 08:53
Sample: 2005 2015
Periods included: 11
Cross-sections included: 18
Total panel (unbalanced) observations: 67

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.747040	0.424567	13.53624	0.0000
LINED	0.088017	0.128496	0.684976	0.4959
LINHT	-0.315851	0.119745	-2.637708	0.0105
LINSOR	0.406736	0.100921	4.030261	0.0002
LINCDE	0.219689	0.134435	1.634169	0.1073

R-squared	0.348402	Mean dependent var	7.428978
Adjusted R-squared	0.306363	S.D. dependent var	0.796123
S.E. of regression	0.663050	Akaike info criterion	2.087764
Sum squared resid	27.25742	Schwarz criterion	2.252293
Log likelihood	-64.94009	Hannan-Quinn criter.	2.152869
F-statistic	8.287661	Durbin-Watson stat	0.276593
Prob(F-statistic)	0.000020		

FIXED EFFECT

Dependent Variable: LNABV
Method: Panel Least Squares
Date: 02/14/17 Time: 08:54
Sample: 2005 2015
Periods included: 11
Cross-sections included: 18
Total panel (unbalanced) observations: 67

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.989844	0.374872	18.64597	0.0000
LINED	-0.009526	0.112603	-0.084597	0.9330
LINHT	-0.137332	0.105028	-1.307570	0.1977
LINSOR	0.134469	0.100560	1.337195	0.1879
LINCDE	0.108035	0.114445	0.943994	0.3502

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.827419	Mean dependent var	7.428978
Adjusted R-squared	0.746882	S.D. dependent var	0.796123
S.E. of regression	0.400537	Akaike info criterion	1.266663
Sum squared resid	7.219330	Schwarz criterion	1.990592
Log likelihood	-20.43321	Hannan-Quinn criter.	1.553124
F-statistic	10.27370	Durbin-Watson stat	0.765174
Prob(F-statistic)	0.000000		

RANDOM EFFECT

Dependent Variable: LNABV

Method: Panel EGLS (Cross-section random effects)
Date: 02/14/17 Time: 08:55
Sample: 2005 2015
Periods included: 11
Cross-sections included: 18
Total panel (unbalanced) observations: 67
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.282501	0.356942	17.60092	0.0000
LINED	0.032248	0.106178	0.303718	0.7624
LINHT	-0.166574	0.098079	-1.698364	0.0945
LINSOR	0.203751	0.090687	2.246760	0.0282
LINCDE	0.150998	0.106162	1.422330	0.1599

Effects Specification		
	S.D.	Rho
Cross-section random	0.560841	0.6622
Idiosyncratic random	0.400537	0.3378

Weighted Statistics

R-squared	0.136022	Mean dependent var	2.406454
Adjusted R-squared	0.080281	S.D. dependent var	0.578083
S.E. of regression	0.428736	Sum squared resid	11.39649
F-statistic	2.440267	Durbin-Watson stat	0.480905
Prob(F-statistic)	0.056102		

Unweighted Statistics

R-squared	0.193169	Mean dependent var	7.428978
Sum squared resid	33.75104	Durbin-Watson stat	0.162384