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# CORPORATE SOCIAL RESPONSIBILITY COST AND SUSTAINABLE GROWTH OF LISTED MANUFACTURING FIRMS IN NIGERIA

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**Abstract**

*The study examined the effect of corporate social responsibility cost on sustainable growth of listed firms in Nigeria. The study adopts ex-post facto research design. Fourteen (14) out of the 56 listed manufacturing companies on the Nigerian stock exchange as at 2021 were selected for the study. Data was analyzed using panel regression and Autoregressive Distribution Lag (ARDL) model. Findings from the study reveal that, corporate social responsibility cost denoted as social responsibility cost and environmental cost has a long run relationship with sustainable growth of listed manufacturing*

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*firms in Nigeria as measured by the bounds test using the Wald statistics. Furthermore, the results also reveal short run relationship with a speed of adjustment to long run equilibrium at 77.95% significant at 5% level of significance. It is thus recommended that manufacturing firms should continue to invest in corporate social responsibility as this has a significant effect on their sustainability. Firms must sustain the current corporate social responsibility strategy and improve on ways to be cost efficient while still maintaining an effective corporate social responsibility strategy that will put the firms in good light with consideration to environmental responsiveness.*

**Keywords:** *social responsibility cost; environmental cost; sustainable growth; stakeholders; autoregressive distribution lag.*

**JEL Classification:** M4

## 1.1 Introduction

Sustainable growth and or development have become an important phrase in contemporary research discourse and in all economies of the world today. It centres around three dimensional, distinct but interconnected pillars. These pillars are the environment, economy and the society. Firms and decision makers are showing more concern for this relationship, how they complement, the trade-off among these pillars and ensuring responsible human behaviour and actions at national, community and individual levels. Sustainability has become an imperative as a result of internationalization. Internationalization of businesses is a global trend that has emerged over the past decade (Olaf & Razaul, 2020). The fundamental concept of business globalization therefore is hinged on the precept of equal ethical rewards to the diverse stakeholders of the firm (Hirigoyen & Poulain, 2015). According to Akinpelu, Ogunbi, Olaniran and Ogunseye (2013), the stakeholders of a firm encompass all shareholders, potential investors, government, employees and the host communities. As observed by Najeb and Awni (2017), the various stakeholders of a firm have diverse interest that the firm must satisfy based on the available resources of the firm. It is an established economic preposition that firms' resources are scarce and firms must plan within the available scares resources how they will satisfy the various stakeholders interest (Garriga & Mele, 2004) and also remain sustainable. Premised on the preposition of firm scarce resources and the need to satisfy diverse interest of firms' stakeholders has necessitated the argument for and against the

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adoption of corporate social responsibility as a firms' fundamental strategy to satisfy the diverse interest of various firm stakeholders and attain business sustainable growth. While scholars like Milton Friedman argued against corporate social responsibility and environmental strategies of firms, Edward Freeman argued in favor of firms' corporate social responsibility and environmental strategies.

Amole, Adebiyi and Awolaja (2012) suggest that social responsibility of firms is necessary for the following reasons: it helps firms to extend aid to societies need as well as being responsive to environmental protection; it helps firms to use business resources to promote the interests of all stakeholders affected by a company's operations; social responsibility helps the firm to respond to changing public needs and expectations; it helps the firm or business to recognize its moral obligations; and facilitates a firm's correction of some problems caused by the business, for example, pollution of the environment. On the other hand, Nnamani, Onyekwelu and Ugwu, (2017) argued that corporate social responsibility adds cost burden to the firms. Nnamani et al., (2017) further encouraged that firms should make strategic plans while carrying out corporate social responsibility activities to minimize the cost implication of corporate social responsibility to the firm in other to achieve sustainable business growth in terms of financial performance. A defining factor however in today's economy is uncertainty. Uncertainty not only about the big challenge of finance but also in the growing social and environmental concern which puts the wealth maximization interest of the shareholders at risk. Notably, Najeb and Awni (2017) stated that, the reasons enterprises embark on social responsibility varied and four reasons were identified for firms' engagement into social responsibility activities. Firstly, many societies realized that companies have ethical duty to take part in activities for the interest of all; whether these activities are profitable or not. Secondly, the sustainability concept pressures the need for the company's stewardship of non-financial services to the community and the environment. Thirdly, governments, communities and regulators provide firms with license to carry out business operations establishing a social contract. Finally, the company's reputation can be enhanced through engaging in corporate social responsibility. The big question however remains that is how the growth can be sustained. The argument for and against the need for firms to be socially responsible to bring about sustainability has therefore necessitated this study. As a result, this study will examine the effect of corporate social responsibility cost (social responsibility cost and environmental cost) on sustainable growth of listed manufacturing firms in Nigeria.

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## 2.0 Literature Review and Theoretical Framework

### Concept of corporate social responsibility

Corporate social responsibility has no single commonly accepted definition (Abdulraham, 2013). In literature the concept has unclear boundaries. It generally refers to business practices based on ethical values, with respect for people, communities and the environment (Amole, Adebiyi & Awolaja, 2012). Hilda, Hope and Nwoye (2015) argued that corporate social responsibility comprises varying degrees of conceiting and trustworthy actions of ethical obligations to customers, employees and the community. Luper (2013) defined social responsibilities as the long range goals of an organization inevitably focused upon its contributions to the needs of society tangible or intangible, its contribution may be in terms of goods or services or both. Again, Abdulraham (2013) asserted that social responsibility are management's decisions and actions taken for reasons at least partially beyond the organizations direct economic or technical interest. Okegbe and Egbunike (2016) defined social responsibility as the obligation of corporate decision-makers to take actions, which protect and improve the welfare of the society in which the organization does business. That is to say in addition to their economic and legal obligations, they also owe the society some responsibilities. Shruti (2014) defined corporate social responsibility disclosure as the process of communicating the social and environmental effects of organization economic actions to particular interest groups within the society and to society at larger. Furthermore, Shruti (2014) stated that disclosures about the firm corporate social responsibility strategy enhance corporate reputation through gaining trust and support from various stakeholders. Corporate social responsibility strategy assists to evaluate the congruence between the social value implied by corporate activities and social norms (Amole, Adebiyi & Awolaja, 2012).

In Nigeria, the introduction and application of corporate social and environmental accounting is still at the voluntary stage, as companies especially those in manufacturing industry are taking more proactive steps towards the promotion of a sustainable environment.

### Sustainable Growth Rate

Sustainable growth refers to a rate of growth which a country or a firm can maintain without creating other significant economic problems, especially for generations to come. Rapid economic growth today is great, but it often comes with a trade-off regarding future economic and financial health. Higgins (1977)

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describes sustainable growth in the business context as the maximum platform or benchmark for the company to grow their company revenue without reducing its financial resources. The combinations of a company's operating element (i.e. profit margin and asset efficiency) and financial elements (i.e. capital structure and retention ratio) into a single measurement become a very valuable financial performance indicator for every company. To demonstrate the interdependencies between growth and financial policy, it must be understood that increase in annual revenue must be adequately supported by annual sources of corporate capital. A firms' sustainable growth rate (SGR) is the fastest growth rate or maximum rate of growth it can sustain at its current level of financial leverage. In other words, a commercial enterprise's SGR is how much it can grow before it has to get further into debt (Todd, Javal & Grossman 2014). The SGR involves maximizing sales and revenue growth without increasing financial leverage. Achieving the SGR can help a company prevent being over-leveraged and avoid financial distress. Sustainable growth therefore is that growth that is possible to sustain an organization in perpetuity without causing economic or environmental problems. A firm that grows quickly may find it difficult to fund such growth while that which grows too slowly or not at all may stagnate and eventually dies. In calculating the sustainable growth rate of a company it is expedient to know the profitability level of the company in terms of its return on equity (ROE) and its retention policy. The sustainable growth rate is the rate of growth that the company can expect to see in the long term, calculated by multiplying a company's earnings retention rate by its return on equity. The concept of sustainable growth can be helpful for planning healthy corporate growth. However conflict can arise if growth objectives are not consistent with the value of the organization's sustainable growth.

**Corporate social responsibility and sustainable growth**

The emergence of CSR has been an intense issue of debate among scholars. However, until recently, most of the literature has considered CSR practices as a "black box" of external requirements which need to be justified from a purely economic perspective (Brammer et al, 2012). This discuss have been heavily driven by Milton Friedman's argument which considers calls to be socially responsible as theft, or stealing money and resources from the real owners of enterprises otherwise known as the shareholders. CSR has long been seen as an activity entailing two major risks for corporate resources: the misappropriation to unrightful claimants and the misallocation to inefficient activities (Margolis and

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Walsh, 2003). However, in order to find an antidote against the CSR scepticism, empirical research has largely focused on searching for a positive relation between corporate social performances (CSP) and corporate financial performance (CFP). In other words, the idea is to know if CSR was value-enhancing for the company or not. Some have argued that a higher level of corporate social responsibility provides a competitive advantage. Others have pointed to reputation gains and yet still others see public relations benefits and positive signals towards customers, investors and employees; which will turn into positive economic outcomes in the long run. The research result linking corporate social responsibility and financial performance has been mixed. While some have been positive others have shown negative relationship. This may have varied as a result of variables and methodology employed. This study therefore seek to empirically provide evidence of the relationship subsisting by employing not just financial performance variables but using sustainable growth rate to understand the implication for future generations. The study therefore hypothesize that corporate social responsibility cost (social cost and environmental cost) has no significant effect on sustainability of listed manufacturing firms in Nigeria.

**Theoretical Framework**

Many researchers have used several theories to examine or explain the relationship between corporate social responsibility and sustainable growth mostly from the financial performance perspective. The present study relies heavily on the Stakeholder Theory in explaining corporate social responsibility and sustainable growth of listed firms in Nigeria judging from the three pillars of sustainability. Freeman (1964) criticized the Milton Friedman stockholder's theory with the stakeholder's theory. He posited that management is responsible to protect the interests of other groups, beyond investors. Freeman defined stakeholder as any group or individual who can affect or is affected by the achievement of the organization's objectives. He included other groups such as customers, suppliers, community, and environment as the stakeholders. Friedman (1970) had argued that the first and foremost goal of a firm is profit maximization and as such the only social responsibility firms should engage in is maximization of profit to the shareholders and not engage in other aspects of corporate social responsibilities outside the scope of profit maximization in order not to incur extra cost that will counter the profit maximization goal of the firm. The justification for the use of the stakeholder theory in this study is premised on the fact that while stakeholder

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approach aims at creating mutual interests and value for all stakeholders, sustainability emphasizes the links between societal, environmental and economic goals more explicitly. Therefore since these stakeholders have vested interest in the company's strategies and plans, they will also all be affected by the company's sustainability efforts and those efforts affects society and the environment as a whole.

**Empirical review**

To better situate this study in the line of discuss and deepen understanding of the issues at stake we look at Olaf and Rezaul (2020) who analysed the connection between the sustainability performance and financial performance of Bangladeshi banks by examining the effect of the Bangladesh environmental risk management guideline. They analysed all fifty-six listed commercial banks that are operating in Bangladesh below the guidelines of the Central Bank of Bangladesh. They gathered sampled data from publicly available reports such as annual, sustainability, and corporate social responsibility (CSR) reports, disclosed sustainability and financial data on the banks' websites. Using panel regression, they discovered that higher sustainability performance creates a greater financial performance and that better banks operate better with regard to sustainability than smaller banks. Kyungtag and Hyunchu (2019) investigated how CSR activities affect sustainable growth and value of Corporations in Korea. The relationship between corporation social responsibility (CSR) activities and their sustainable growth and valuation was explored. The nonlinear quantile regression was used. The result indicated CSR activities increased corporation value exclusively in the middle range groups of Tobin's q. Further findings showed that CSR activities affect the valuation of Korean listed corporations in a nonlinear way rather than linear way. Mohammed and Kabir (2019) examined the impact of corporate social responsibility on financial performance of listed non-financial services companies in Nigeria. They used *ex-post* factor research design and utilized secondary data collected from the annual report and accounts of twenty three (23) sampled listed non-financial services companies in Nigeria for a period of 10 years (2008-2017). The study data were analyzed using descriptive statistics, correlation and regression analysis (GLS Fixed Effect) Robustness tests, namely multicollinearity, heteroscedasticity, normality of residuals, Hausman specification and F-Test were conducted to validate the results. The finding of the study reveals that CSR has significant positive impact on financial performance.

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Erhirhie and Ekwueme (2019) took a look at the impact of sustainability reporting on the financial performance of listed oil and gas corporations in Nigeria. They assessed the impact of company social sustainability reporting on return on assets, return on equity, and return on capital employed of oil and gas companies listed on the Nigeria Stock Exchange. Ten (10) oil and gas firms were sampled for the study. The study utilized secondary data gathered through financial ratios and accounts of the companies and content analysis. The findings showed that social sustainability reporting exerts a negative effect on all three overall performance proxies, howbeit only its effect on return on equity was statistically significant.

Omoike, Uwalomwa, Olubukola, 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. They 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. Mehwish (2018) examined corporate social responsibility and its effect on financial performance, using the banking industry in Pakistan. Finding from his evaluation which was achieved using the Ordinary Least Square (OLS) regression method to determine the comparative reputation of individual variables to recognize which independent variable impacts the dependent variables represented by the sign of beta coefficients revealed that CSR has a positive influence on ROE and ROA.

Yigit and Mukhtar (2017) studied the impact of corporate social responsibility dimensions on corporate financial performance of commercial banks in emerging

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economies, namely Turkey and Nigeria. Content analysis is performed to extract financial and corporate social responsibility disclosure records from annual reports and corporate social responsibility associated reports of banks listed on the Borsa Istanbul (BIST) and the Nigerian Stock Exchange (NSE). Panel data multiple linear regression analysis is performed to analyze the relationship between corporate social responsibility dimensions and corporate financial performance. The findings, in line with the stakeholder theory, indicate that corporate social responsibility has a positive effect on corporate financial performance in Nigeria. However, there is no statistically significant relationship between corporate social responsibility and corporate financial performance in Turkey.

**3.0 Methodology**

The study adopts *ex-post facto* research design. Using judgmental sampling, 14 out of the 56 listed manufacturing companies on the Nigerian stock exchange as at 2021 were selected. The study adopts data from manufacturing firm because they are the firms that engage in activities capable of degrading the environment. As such it is expected they become more corporate and socially responsive. Time series and cross sectional data were extracted from the audited financial statements of the sampled firms for the period covered by the study i.e 2013-2020 and analysed using descriptive statistics and panel data regression estimator using the ARDL model. Diagnostic tests were carried out on the data set to ascertain its stationarity to avoid spurious results.

The study formulates the following model to be used;

$$SGR_{it} = \alpha + \beta_1 EVC_{it} + \beta_2 SRC_{it} + U_{it} \text{ .....i}$$

$$SGR_{it} = \alpha + \beta_1 EVC_{it} + \beta_2 SRC_{it} + B_3 ECT_{it} + U_{it} \text{ ..... ii}$$

***Where:***

**α** = Constant

**SGR** = Sustainable growth rate (The reported retained earnings divide by net income multiplied by net income over total equity of the firm at a given time) or (retained earnings divide by total equity of the firm at a time)

**SRC** = Social responsibility cost (The log of reported cost incurred in carrying corporate social responsibility by the firm at a time).

**EVC** = Environmental cost (The log of reported cost incurred in carrying out environment conservative activities by the firm at a time).

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ECT = Error correction term (computed residuals of the variables under study)
**U** = Error term used in the model.
$\beta_1 + \beta_2$ = Beta coefficient of the independent variable

### 4.0 Results and Discussion

**Table 1. Descriptive Statistics of Variables**

| | SGR | SRC | EVC |
|---|---|---|---|
| Mean | 0.437507 | 7.158621 | 5.560035 |
| Median | 0.364509 | 7.343470 | 5.619080 |
| Maximum | 0.994300 | 7.946958 | 6.791370 |
| Minimum | 0.026802 | 5.795185 | 4.425583 |
| Std.Dev | 0.304016 | 0.579266 | 0.590711 |
| Skewness | 0.475924 | -0.432750 | -0.220994 |
| Kurtosis | 1.767784 | 1.938391 | 2.370564 |
| Jarque-Bera | 11.21272 | 8.676989 | 2.735884 |
| Probability | 0.003674 | 0.013056 | 0.254630 |
| Sum | 48.56325 | 796.6069 | 617.1639 |
| Sum Sq. Dev. | 10.16685 | 36.91043 | 38.38331 |
| Observation | 112 | 112 | 112 |

Source: E View Output 2022

The descriptive statistics as shown in table 1 presents data of all the variables employed in the study. The total number of observation for the study denoted as N is 112.To test for normality of the data, the general rule of thumb for measurement of skewness (-3 to +3) was applied. The study variables (SGR, SRC & EVC) data Skewness statistic values fall between the range of -3 and +3; indicating that the data are within the normal skewness level thus qualifies for further analysis. The probability of the Jarque-bera statistics also reveal that the data set is normally distributed.

The reported sustainable growth (SGR) has a mean of 0.437507 with a standard deviation of 0.304016. The SGR also revealed a minimum and maximum value of 0.026802 and 0.994300 respectively. For Social Responsibility Cost (SRC) the minimum value is 5.795185 while the reported maximum value is 7.946958. Again the mean value recorded is 7.158621 with a standard deviation of 0.579266 for

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SRC. Furthermore, environmental cost (EVC) reported a minimum value of 4.425583 while the reported maximum value is 6.791370. Again the mean value recorded for EVC is 5.560035 with a standard deviation of 0.590711. This shows that the manufacturing companies in Nigeria incur more cost in sustaining the social need of stakeholders than the cost incurred on being responsive to the environment.

Having established the normality of the data set used in the study, further diagnostic test was done to ascertain the stationarity or order of integration of the variables being a cross sectional time series data. Diebold and Kilian (2000) asserts that it is important to test for stationarity as it is useful for forecasting and to provide information about the kind of processes to build into economic models for accurate predictions. Unit root test was therefore carried out. The result is as shown in table 2

**Table 2: Augumented Dickey fuller Unit Root Test**

| Variable | ADF-Statistics | Probability | Order of Intergration |
|---|---|---|---|
| SGR | 82.47 | 0.0000 | 1(1) |
| SRC | 39.53 | 0.0433 | 1(0) |
| EVC | 52.59 | 0.0033 | 1(1) |

Source: Eviews Output 2022

Table 2 shows the result of unit root tests using the ADF unit root. The result reveals that the three variables in the study are integrated in the order of one 1(1) and zero 1(0). This order of integration therefore confirms the choice of empirical analysis to use in estimating the relationship among the variables which is the Autoregressive distribution lag (ARDL) regression model. This choice is premised on the fact that the ARDL model is able to produce the short and long run dynamic relationship and coefficient of the mixed order of the selected variables. The result is as shown in table 3.

From table 3, the R-square of approximately 45% (0.448) shows a moderate relationship between the dependent variable (SGR) and the explanatory variables of SRC and EVC with the rest unexplained by the variables not included in the study at hand. A further look at the Adj. $R^2$ of 36% (0.36) also confirms the relationship and its extent. The extent of variation in the dependent variable of sustainable growth is explained by the regressors (SRC and EVC) at the given percentage. The F-statistic of 5.241 at a p-value of 0.000033 and significant at 5% reveals that the model as expressed in study is statistically significant and that

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sustainable growth of manufacturing firms in Nigeria are jointly explained to a great extent by the explanatory variables used as proxy for corporate social responsibility cost(SRC and EVC). The DW statistics show clearly the absence of autocorrelation at 1.91 close to the rule of thumb of 2. We further proceed to test for the long run relationship of the variables using the Bound test (Wald Statistics).

**Table 3. ARDL Test Result**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -0.054821 | 0.493666 | -0.111048 | 0.9120 |
| D(SGR(-1)) | -0.224718 | 0.164989 | -1.362020 | 0.1785 |
| D(SGR(-2)) | -0.090835 | 0.133341 | -0.681223 | 0.4984 |
| D(SRC(-1)) | 0.205787 | 0.350115 | 0.587770 | 0.5590 |
| D(SRC(-2)) | 0.585275 | 0.370078 | 1.581493 | 0.1192 |
| D(EVC(-1)) | -0.035887 | 0.112858 | -0.317984 | 0.7516 |
| D(EVC(-2)) | -0.020902 | 0.110766 | -0.188702 | 0.8510 |
| SGR(-1) | -0.685835 | 0.187546 | -3.656896 | 0.0006 |
| SRC(-1) | 0.062004 | 0.096796 | 0.640568 | 0.5243 |
| EVC(-1) | -0.021442 | 0.096533 | -0.222119 | 0.8250 |

| | | | |
|---|---|---|---|
| R-squared | 0.448491 | Mean dependent var | 0.005097 |
| Adjusted R-squared | 0.362912 | S.D. dependent var | 0.380940 |
| S.E. of regression | 0.304057 | Akaike info criterion | 0.591853 |
| Sum squared resid | 5.362156 | Schwarz criterion | 0.918251 |
| Log likelihood | -10.12300 | Hannan-Quinn criter. | 0.721182 |
| F-statistic | 5.240670 | Durbin-Watson stat | 1.908008 |
| Prob(F-statistic) | 0.000033 | | |

Source: E-views output 2022

Table 4 show the result of the bound test using the Wald test. The F-stat at 4.574 is compared with the Pesaran critical value at 5% level of significance. Where the F-statistics is more than the upper bound critical value, we reject the null hypothesis implying that C(8)= C(9)= C(10) = 0.Comparing the Pesaran critical value table at K=3 and n=70 at 5% level of significance shows that lower bound statistics is 3.370 and upper bound statistics is 4.545. Therefore since the F-

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statistics compared with the critical value is greater than the upper bound critical value i.e F- statistics > critical upper bound, we reject the null hypothesis of C (8)= C(9) = C(10) = 0 and conclude that there is long run cointegration relationship among sustainable growth rate and the explanatory variables (social responsibility cost and environmental cost) selected in this study this implies that all variables move together in the long run. After estimating the long run relationship we will further estimate the short run error correction model (ECM) relationship to ascertain the speed of adjustment by which the variables return to long run equilibrium.

**Table 4: Result of Bound test for Long run Relationship**

Wald Test:
Equation: Untitled

| Test Statistic | Value | Df | Probability |
|---|---|---|---|
| F-statistic | 4.574439 | (3, 58) | 0.0061 |
| Chi-square | 13.72332 | 3 | 0.0033 |

Null Hypothesis: C(8)=C(9)=C(10)= 0
Null Hypothesis Summary:

| Normalized Restriction (= 0) | Value | Std. Err. |
|---|---|---|
| C(8) | -0.685835 | 0.187546 |
| C(9) | 0.062004 | 0.096796 |
| C(10) | -0.021442 | 0.096533 |

Source: E-views Output, 2022

Table 5 reports the results of the short-run dynamics. The cointegrating equation (–0.779510) as expected is negative and significant. A negative sign implies that any shock that occurs in the short-run would be rectified in the long-run (Bannerjee et al., 1998). The results show that mathematically, variables employed in the study adjust partially by about 77.95% in the short-run toward its long-run equilibrium. This confirms the long-run equilibrium relationship running from the dependent

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variable (SGR) to the independent variables (SRC and EVC). The ARDL regression for the underlying equation fits very well and the selected model is very significant. The model satisfies other specification and diagnostic tests. Finally, the statistical properties of the regression are low as indicated by adjusted $R^2$ of 27.53% and the estimates of t-statistics displayed in Table 4.5. However the overall statistical properties of the regression are significant with an F-statistics of 3.876 at a p-value of 0.002 < 0.05 level of significance. Therefore, the model could be accepted as approximating the relationship being tested.

**Table 5: Short run dynamics model using ARDL**

Dependent Variable: SGR
Selected model: ARDL
Sample: 2013-2020

| Variable | Coefficient | Std. Error | t-statistic | Prob. |
|---|---|---|---|---|
| C | -0.011510 | 0.046510 | -0.247473 | 0.8056 |
| D(SGR(-1)) | -0.104581 | 0.273879 | -0.381851 | 0.7043 |
| D(SGR(-2)) | -0.080512 | 0.181569 | -0.443425 | 0.6595 |
| D(SRC(-1)) | 0.271163 | 0.501002 | -0.541241 | 0.5910 |
| D(SRC(-2)) | 0.100633 | 0.415068 | 0.242449 | 0.8095 |
| D(EVC(-1)) | -0.020364 | 0.122776 | -0.165864 | 0.8690 |
| D(EVC(-2)) | -0.001723 | 0.130850 | -0.013168 | 0.9896 |
| ECT(-1) | -0.779510 | 0.317409 | -2.455852 | 0.0179 |

| | | | |
|---|---|---|---|
| R-squared | 0.371045 | Mean dependent var | -0.014818 |
| Adjusted R-squared | 0.275334 | S.D. dependent var | 0.381527 |
| S.E. of regression | 0.324784 | Akaike info criterion | 0.724639 |
| Sum squared resid | 4.852283 | Schwarz criterion | 1.019303 |
| Log likelihood | -11.56524 | Hannan-Quinn criter. | 0.838279 |
| F-statistic | 3.876739 | Durbin-Watson stat | 2.249341 |

Source: E-views output 2022

**Discussion of Results**

Table 2 reports the ADF unit root tests and shows that all the variables are integrated of a mixed order, 1(0) and 1(1) allowing the use of the ARDL as the elected model for analyses for the study. The ARDL bounds testing established a long-run relationship among the variables as reported in tables 3 and 4. While table 5 reports that in the short-run, SRC lag 2 impact sustainable growth rate (SGR)

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positively and moderately. However, EVC at lag 2 has an inverse relationship with sustainable growth rate. The results show that statistically, the significant determinants of sustainable growth rate adjust partially by about 77.95% in the short-run toward its long-run equilibrium. This confirms the long-run equilibrium relationship running from sustainable growth rate to its explanatory variables. The model fits well with the regressors of sustainable growth rate explaining 45% of the variations in the sustainable growth rate. Tests conducted show that the selected model satisfies other specification and diagnostic tests.

The results show that in the long-run there is a positive relationship of sustainable growth rate to SRC. This variable exhibited the expected sign. SRC relates positively with sustainable growth rate. The result is consistent with Mehwish (2018), Kyungtag and Hyunchu (2019) who found positive relationships between CSR activities, firm performance and firm value. Secondly, the environmental cost coefficient showed a negative relationship with sustainable growth rate. Our study confirmed the empirical findings of Omoike *et al* who revealed that association between corporate social and environmental expenditure and market price is not significant on the aggregate.

**Conclusions**

In employing the time series cross sectional empirical strategy and ARDL estimation techniques to examine the effect of corporate social responsibility costs on sustainable growth rate of listed manufacturing firms in Nigeria, the following results were reported. The results indicate that significant determinants of sustainable growth rate are SRC and EVC. Also that SRC and EVC are cointegrated at both long run and short run and that the speed of adjustment of short run to long run equilibrium is about 77.95% which is significantly above average. The paper contributes to literature by providing a justification for the need for corporate entities not only of the manufacturing sector to increase investment in social and environmental activities that will enhance sustainable growth of firms. The Implication of this study for Nigeria and other emerging economies is cogent in that corporate social responsibility is still very much voluntary and companies have options to do it or not yet empirical backups provides positive picture of its outcome both for now and for the future. Policy makers should do more from the angle of stricter enforcement of compliance to policies that promotes social and environmental responsiveness of firms in Nigeria. Firms must sustain the current corporate social responsibility strategy and improve on ways to be cost efficient

while still maintaining an effective corporate social responsibility strategy that will put the firms in good light with consideration to environmental responsiveness.

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