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The Effect of Sustainability Reporting on Firm Value in Nigeria: Evidence from Listed Consumer Good Firms

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Abstract: The study empirically investigated the effect of sustainability reporting on firm value in Nigeria. The study objectives were to examine the effect of economic sustainability reporting, environmental sustainability reporting, and social sustainability reporting on firm value. The population for the study consisted of listed consumer goods companies in the Nigerian Stock Group (NGX). The studied population had the responsibility to publish their financial statements for six (6) consecutive years from 2016 to 2021. Secondary data used for the study was collected from a sample of sixteen (16) listed consumer goods companies. Robust regression technique was used to test the formulated hypotheses. The regression results revealed that economic sustainability reporting had a positive and significant effect on firm value at a 1% level of significance, environmental sustainability reporting had a positive and significant effect on firm value at a 1% level of significance and social sustainability reporting had a negative and significant effect on firm value. The study recommended that the management of Nigerian listed consumer goods companies should focus more on sustainability reporting in terms of economic reporting and environmental reporting to increase the value of the firm.

Keywords: Economic, Environmental, Social, sustainability reporting, Firm Value

I. Introduction

Sustainability reporting (SR) is a new phenomenon in research nowadays due to the pressure on environmental resources. SR is a new paradigm shift that is not only related to disclosure but also integrates with the communication process between companies and stakeholders (Bakti & Nengzih, 2023). This process provides stakeholders with an opportunity to determine if the company has taken their interests into account when making decisions. A sustainability report will disclose how non-financial issues such as; employee job satisfaction and performance, external stakeholder's position, and climate change contribute towards value creation. Corporate governance disclosure is a paramount factor explored by managers to enhance firm value (Fatma & Chouaibi, 2021).

SR is to convey to the public both the transparency and accountability of the firm in the conduct of its affairs (Makhdalena, 2012). A growing number of investment professionals are starting to pay attention to non-financial business performance as they become aware that profitability alone in itself is an insufficient metric for measuring a company's long-term growth potential. By taking into account environmental considerations in addition to economic, strategic, and operational factors, business transparency is increased, risk management is strengthened and stakeholder involvement is enhanced. Major corporate ethical disasters impacting the environment, human resources, and the community have heightened the demand for public firms to voluntarily carried sustainability reporting of operating activities to stakeholders. There is also advocacy that sustainability reporting should reflect in the internal organizational processes of companies to enhance its authenticity (Herschovis, et al, 2009).

Firm value (FV) is the perception of a company by investors and is usually associated with the prices of stock in the market (Makhdalena, 2012). Fatma and Chouaibi (2021) affirmed that FV creates a benchmark for investors through a bumper rate of return to investors for potential investors. Fama and French (1998) asserted that the value of a company also depends on the future income of the company, therefore information about the success of the company in terms of profitability will greatly influence the value of the company, in addition, it will also be a reflection of the company`s share price. Stakeholders who are used to making decisions based on financial statements are beginning to question the relevance of the traditional measurement of firm value and performance. Therefore, the idea emerged that a firm's overall performance may be better analyzed when we consider both financial events and non-financial events side-by-side with the assumption that a correlation between the two helps the investor make better decisions. SR permits capital market participants to more precisely assess firms' financial forecasts and risk profiles, potentially leading to higher share prices and higher firm value (Makhdalena, 2012).

Bakti and Nengzih (2023) stressed that the components of SR are economic, social, and environmental sustainability reporting. Business activities around the world are carried out within the purview of sustainability information. The presence of sustainability activities helps to create social, environmental, and economic benefits for all stakeholders relating to the business organization.

Consequently, firms reporting their sustainability activities are appraised by capital market participants who will then appreciate that investing in SR is a strategy for obtaining business legitimacy and also a method of creating value-relevant information (Iliemena et al, 2022). Against this background, this study attempts to examine the impact of sustainability reporting on firm value.

1.1 Statement of the Research Problems

A sustainability report (SR) is an important tool companies use to leave their stakeholders with a positive impression of their actions and impacts. A sustainability report in its essential structure is a statement about a company's environmental, social, and corporate governance performance. With regards to legislation, several infamous events like the WorldCom scandal, the Exxon Valdez oil spill, the Enron scandal in the international business world, and the scandals in Oceanic Bank and Intercontinental Bank in Nigeria that happened in 2011 and 2013 respectively, among others have taught stakeholders some valuable lessons to look for quality assessment criteria beyond financial metrics.

Iliemena, et al (2022) opined that sustainable development is considered in every business operation without any impact on the environment. The majority of studies done in this regard have often focused on advanced economies in Europe, America, and Asia. However, some significant factors affecting business value are non-monetary and difficult to measure without some atom of subjectivism. There had been controversial arguments regarding what we term goodwill in financial accounting and there are different schools of thought on how goodwill should be measured (Adebayo, et al, 2022). Atanda, et al (2021) studied deposit money banks in Nigeria and concluded that SR contributes negatively to firm value. If there is a relationship between sustainability reports and firm value, what then will be best practice in measuring this relationship, how do we deal with the non-monetary nature of the components of sustainability reports? To lessen the influence of distracting factors, this paper focuses on listed consumer goods and industrial goods-producing companies in Nigeria to reduce the inconsistent factors relating to geography, market size, firm culture, and regulation while comparing sectors that are too different.

On the issue of methodological weakness and limitations, several prior studies used the ordinary least square regression technique (Adebayo, et al, 2022; Orumo, 2018; Ni, 2019; Kirimi, et al, 2022) without the application of robust least square research methodology to investigate the effect of sustainability reporting on firm value of listed consumer goods firm in Nigeria. Therefore, this study would intend to fill the research gap by using a robust least-square research methodology. Therefore, the rationale and motivation of this study is to address the problem between sustainability reporting and the firm value of listed consumer goods firms in Nigeria.

Based on the statement of the research problem, the following research questions will be raised to guide the study under investigation:

(i) Is there any effect of economic sustainability reporting on firm value in Nigeria?

(ii) What is the effect of environmental sustainability reporting on firm value in Nigeria?

(iii) Does social sustainability reporting have any effect on firm value in Nigeria?

1.2 Objectives of the Study

The broad objective of this study is to investigate the effect of sustainability reporting on firm value in Nigeria. The specific objectives are to:

(i) investigate the effect of economic sustainability reporting on firm value in Nigeria.

(ii) evaluate the effect of environmental sustainability reporting on firm value in Nigeria.

(iii) determine the effect of social sustainability reporting on firm value in Nigeria.

1.3 Research Hypotheses

The following hypotheses will be formulated in a null form:

H01: Economic sustainability reporting has no significant effect on firm value in Nigeria.

H02: Environmental sustainability reporting has no significant effect on firm value in Nigeria.

H03: Social sustainability reporting has no significant effect on firm value in Nigeria.

II. Literature Review

2.1 Concept of Firm Value

Value maximization can be considered one of the objectives of every organization, which is achievable through effective management decision that brings about goodwill and sustainable profitability. The ultimate value of shareholder wealth is the maximization of the sum of various stakeholder surpluses. Firm value (FV) is a subject of value creation that has attracted a lot of attention, comments, and interest from financial experts, researchers, the general public, and the management of corporate entities (Nwanna & Ivie, 2017). However, most successful firms have always proved to be a difficult task to many as a firm may have a high level of profitability, but at the same time be in a very bad situation regarding its liquidity and efficiency. Therefore, management in public companies should aim to maximize company FV or to maximize stock value in the market.

Firm value is regarded as equity market capitalization. Value creation is the increase in shareholders' wealth coming as a result of the firm's operational efficiency (Oladele, 2013). The market value of a share is a good indication of investors' perceptions of its business prospects, especially shareholder wealth (Hamidu & Aliyu, 2015). Stakeholders' value from the organization can be increased through heavy investments in research and development and other issues in creativity capacity improvement. The stock market is a dynamic and engaging entity where thousands of transactions occur simultaneously on the floor of trading to outbid and outsell each other (Mohammed, 2017). Safdar, et al, (2013) posited that available new information in the market for company developments and stock recommendations is made public while papers are released on new and different ways in which the market can be exploited. The market has exhibited a vagary of movements that have culminated in return diminutions and capital depreciations across all sectors (Abosode & Oseni, 2011). But as activities in the capital market continue to nosedive and selling pressures remain high, a section of market participants has attributed the trend to panic and non-availability of accounting information while another camp of analysts opined that exogenous variables (non-accounting information) sparked off by government's loose monetary policies is the formidable cause.

Reschiwati, et al, (2020) opined that share price is the determining factor that reflects the success of a bank concerning investors' commitment. FV is generally seen as the worth of a bank given the total value of outstanding shares in the market. Timothy, et al (2020) view FV as how successful a firm is and how the managers of the firm were able to effectively explore the firm resources to generate wealth for the owners. In the opinion of Ilaboya, et al (2016), FV signifies the wealth maximization of the firm in terms of performance (Ilaboya, et al, 2016). Firm value or performance has been looked at from the dimension of value created by the organization for its stakeholders (Oladele, 2013).

The FV can be measured by Returns on Assets (ROA) (Vintila & Gherghina, 2014), Returns on Equity (ROE), Economic Value Added (EVA), Market Value Added (MVA) (Wijesinghe, et al, 2019) and Tobin's Q. Firm value (FV) is the summation of the actual MV of common stock and estimated MVs of preferred stock and debt (Morck, et al, 1988). FV is a tool for business valuation, portfolio analysis, accounting, financial modeling, and risk analysis explored by financial analysts and business managers in a corporate firm. Forai and Amedro (2004) affirmed that FV is a fundamental economic measure that reflects the total value of the firm.

Tobins Q is defined as the ratio of MV of assets (equity and debt) to the replacement value of assets (Beiner & Schmid, 2005). In the opinion of Vintila and Gherghina (2014), Tobin's Q has calculated "as the market value of assets divided by the book value of assets, where the market value of assets equals the book value of assets plus the market value of common equity less the sum of the book value of common equity". Stock market prices are fundamental metrics for measuring the firm values of corporate organizations. In the measurement of FV, this study will make use of Tobin's Q ratio.

2.2 Overview of Sustainability Reporting

Sustainability reporting (SR) is seen as an accounting language based on the ethics and principles that enable the accountant to report about the social and environmental events in the audited financial statement of the company. This premise has led to the development of accounting standards in collaboration with SR and financial reporting standards. Sustainability is driven by three main factors such as social, economic, and environmental. According to Filho (2000, p. 133), SR is defined as the "ability of a nation to attain developmental process economically and socially without negative influence on the environmental resources thereby adhering to ethically acceptable, morally fair, and financially sound". Proactive sustainability practices deal with the timely evaluation of the market to spot threats and opportunities of the social and environmental constraints facing the market (Wijethilake, 2017).

SR components are social economic and financial. Boso, et al, (2017) maintained that management must ensure they commit huge investments in sustainability strategies to pioneer innovative products for future social and environmental market demands to increase the efficient delivery of goods and services that meet customer satisfaction in the future. However, Rosen (2012) cited in Obamen, et al, (2019) noted that for the successful attainment of sustainability and growth, financial, ecological, and social indicators must be properly harnessed.

SR contrasts environmental reporting which focuses on "environmental performance in areas such as climate change, waste, water usage, environmental protection costs, environmental liabilities, and greenhouse gas emissions" (Beck, et al, 2010, p. 207). SR involves the way corporations make business decisions, the products and services they offer, their efforts to achieve an open and honest culture, the way they manage the social, environmental, and economic impacts of business activities, and their relationships with their employees, customers, and other key stakeholders having an interest in the business and its operations.

2.3 Economic Sustainability Reporting

Corporate sustainability is seen as a process of corporations achieving the goals and progress of business operations today without compromising the business operation of the immediate future (Boudreau & Ramstad, 2005). The core aims of financial sustainability are to expand the creation of products and services and reduction of poverty level among the host community. The effect of economic sustainability reporting (ESR) rationality seems to have held sway as the inducement to corporate social donations and its increasing growth especially within the context of voluntary corporate social responsibility (Farouk & Usman, 2013). ESR is the profitability and viability of a business organization.

According to Eshra and Beshir (2017), economic sustainability reporting is simply the organization's effort to utilize available resources efficiently and add value. Ndu and Agbonifoh (2014), "argued that ESR relates more to the production of goods and services needed for exchange and transaction purposes at fair prices for the satisfaction of corporate profit objectives as an obligation to investors, through the satisfaction of identified target market. However, "firm achieved economic responsibility through society and community relation, employee relation, and environmental performance" (Buchholtzet, et al, 1999, p.167). The motivation for the economic dimension is perceived as a purely endogenous function of a company's evaluation of the cost-benefits of such responsibility and other associated firm-specific factors.

2.4 Environmental Sustainability Reporting

Proactive sustainability strategies enable managers of business firms to address social and environmental issues within their business environments to achieve innovative performance (Engert & Baumgartner, 2016). Engert and Baumgartner (2016) described sustainability as environmental practices that are geared towards improving proficiency, shortening reaction time, cutting down energy consumption, reducing waste and toxic material usage, improving resource utilization, and reducing production costs to enhance environmental performance through innovative measures. Sustainability studies are now focusing on topical issues that surround the strategic environment of the organization. These issues cut across topics such as sustainable environment to competition within the firm, management of the supply chain, and ensuring a sustained reputation of the corporation. The dimension that has to do with the sustainability of the environment is the most widely discussed as it posits that an efficient management of the environment despite having a legal and ethical undertone is also crucial in ensuring the value of the firm is maximized (Eccles et al., 2014). To this end, various studies have shown a positive correlation between sustainable management of the environment and financial performance (Nollet et al., 2016).

2.5 Social Sustainability Reporting

Social sustainability reporting (SSR) is the process through which "corporations make business decisions, the products and services they offer, their efforts to achieve an open and honest culture, the way they manage the social, environmental and economic impacts of business activities and their relationships with their employees, customers, and other key stakeholders having an interest in the business and its operations" (Abdulsalam & Seyi, 2013). According to Purnomo and Tarigan (2014), SSR is seen as the effect of the firms on the welfare of employees, local communities, and the operating business environment. The role of social donations reporting takes on increasing importance as a mechanism to undertake such duties of accountability (Gray et al, 1996).

Muslichah (2020) defined SSR as the reporting of human welfare in the published financial reports of companies. In most cases, the disclosure of SS in the financial statement of companies is within the purview of corporate social responsibility. In a nutshell, all companies must report information concerning society, education, health, and economic agenda. SSR can be mandatory or voluntary, depending on the regulations where the company is located. SD can vary substantially between companies. Ioannou and Serafeim (2017) maintained that it is a universal principle that all companies disclose information regarding social activities.

2.6 Empirical Reviews

The empirical reviews were done on the research objectives and hypotheses formulated. In Nigeria, Iliemena, et al, (2023) conducted research on the effect of SR on gross profit margin (GPM) and return on capital employed (ROCE) in the manufacturing sector. The study aims to examine the effect of social and environmental reporting on GPM and ROCE. The study used an ex-post facto research design to collect data from 23 selected companies from the period of 2012 to 2021 while descriptive statistics and ordinary least squares were employed in the analysis of data. The empirical results revealed that SSR exerts a significant positive effect on GPM and environmental exerts no significant effect on ROCE.

Fatma and Chouaibi (2021) examined the impact of CG on the FV of European financial institutions in Tunisia. They collected secondary data from 111 financial institutions belonging to 12 European countries listed on the stock exchange for the period of 2007 to 2019 while multivariate regression technique to analyse the data. The results revealed that CG mechanisms: board gender diversity and CEO ownership had a positive relationship with FV and board size and ownership concentration had a negative relationship with FV while board independence had an insignificant relationship with FV. The control variables, size, age, and legal system were significantly related to FV, and leverage and activity sectors were not significantly related to FV.

Muffee (2021) researched the effect of environmental accounting on corporate performance. Environmental accounting was proxied by environmental liability, cost, profit, and corporate resources while primary data were gathered from 40 respondents among 6 organizations, and Pearson correlation was employed in the analysis of data. The result showed that environmental accounting has a significant positive effect on corporate performance.

Atanda et al (2021) examined the effect of sustainability disclosure on FV. The study aims to examine the effect of ESR, SSR, and ENVR on FV. They made use of an ex-post facto research design to sample ten (10) randomly selected listed DMBs from 2014 to 2018 while data were analyzed using descriptive statistics correlation analysis and multiple panel regression technique. The result showed that SSR and ESR had a significant negative effect on FV. The regression results revealed that SSR had a significant positive effect on FV and ENVR had an insignificant effect on FV. This indicates that SSR and ESR contribute to FV inversely.

Similarly in Nigeria, Iliemena (2020) examined the effect of environmental accounting on the performance of oil and gas companies. The study sample of ten (10) selected Oil and Gas Companies from 2012 to 2018 and the OLS regression technique in the analysis of data. The empirical evidence revealed that environmental accounting practices had a significant effect on performance measured by ROCE and an insignificant effect on performance measured by net profit margin.

In Nigeria, Bolarinwa, et al (2020) studied the effect of ESR on the stakeholder value of listed manufacturing companies in Nigeria. The study made use of a survey research design where primary data was collected from a sample of 40 listed manufacturing companies through the distribution of a self-administered questionnaire to the sample respondents and the OLS regression technique adopted in the analysis of data. The regression result showed that ESR has a significant negative effect on shareholders' value.

In Malaysia, Muslichah (2020) conducted an empirical study on the effect of sustainability reporting on firms using FP as a moderating variable. The study aims to examine the effect of ESR and SSR on FV. The study sampled 15 companies from 2013 to 2016 and used the Structural Equation Modeling with the Partial Least Square Path Modeling method in the analysis of data. It would be revealed from the empirical findings that ESD had no significant effect on FV while a significant positive effect on FP. Also, FP has a significant positive effect on FV.

Machmuddah, et al (2020) conducted a study on the relationship between CSR, profitability, and FV in Indonesia. Secondary was collected from some selected listed companies in Indonesia while regression was used to analyze the data. The results showed that the ESR of CSR had a significant positive relationship with FV and profitability with moderates the effect of CSR disclosure on firm value.

Mgbame and Ilaboya (2013) examined the relationship between environmental accounting audit decisions and firm performance in Nigeria using return on equity to measure performance. They concluded that profitability is a determinant of a company's decision to disclose quantitative environmental information for external audits. The study reveals that profitability could influence a firm's decision to disclose quantitative environmental information in their financial statements for external accounting audits

Kelly and Florence (2014) examined the environmental management and sustainability of the Niger Delta region of Nigeria for quality living. The specific objectives of the study were to investigate the relationship between commitments by Federal Government to corporate environmental management policies and sustainable quality living and to assess the relationship between the true development agenda of the multinational corporations in the region and sustainable development. They documented that lack of sound environmental management policy, poor commitment and ill-implementation of environmental policies, poor environmental management practices, and weak development goals are some of the hindrances to the sustainability of quality living and improve welfare of the host community in the Niger Delta.

Arong et al (2014) examine the relationship between environmental cost management and the profitability of the oil sector in Nigeria. They employed Multiple Regression Analytical Technique for the data analysis and the empirical results showed that a significant relationship exists between environmental cost management and the profitability of the oil sector in Nigeria.

Obamen, et al (2019) maintain that there are indicators of sustainability such as economic, social, and environmental as well as financial. The financial indicator of corporate sustainability ensures that societies pursue growth paths for the generation of an optimal cash flow of income while maintaining their basic stock of human-made capital, human capital, and natural capital, the economic indicators of sustainability ensure that all relevant are internalized associated with environmental, production and consumption. The core aims of financial sustainability are to expand the creation of products and services and reduction of poverty level among the host community.

2.7 Theoretical Review

The theories that relate to sustainability reporting and firm value will be reviewed. Some of the theories are stewardship theory and stakeholder theory which helps explain the relevance of SR and FV. However, this study will be anchored on the stakeholder theory.

2.7.1 Stakeholder Theory

The stakeholder theory is developed by Freeman in the year (1984). This theory stated that stakeholders explore their legitimacy power, to mount pressure on management for the maximization of wealth for their interest. According to Bakti and Nengzih (2023), the theory ensures that a firm must perform its functions fairly to benefit all its stakeholders through cordial relationships between the firm and its constituents. These constituents (groups or people) mostly influence and contribute to the goals and objectives of the firm. Freeman (1984) stressed that management vested with the mantle of strategy development and implementation with effective resource usage and withholding mechanisms are influenced by the firm's stakeholders. Deegan, et al (2002) claimed that the ethical aspect of the stakeholder theory is that the organization needs to be fair to all the stakeholders. To solve the intense stakeholder pressure firms are facing the need to employ environmental management is very important. This implied that powers to the stakeholders are not relevant. Stakeholder theory contends that the pressures exercised on organizations by different stakeholders condition firm behavior.

There is increasing pressure on corporate executives to measure, manage and report the creation of shareholder value regularly. Fernández-Guadaño and Sarria-Pedroza (2018) opined that stakeholder theory is regarded as a positive theory that sees corporate social responsibility as a concept that is used to understand and maximize the interest of stakeholders. The firm itself should be thought of as a grouping of stakeholders and the purpose of the organization should be to manage their interests, need,s and viewpoints. This stakeholder management is thought to be fulfilled by the managers of a firm. The concept of stakeholder emphasizes that organizational growth, stability, and survival build not only on meeting the needs of the owners of the business organizations but must revolve around all relevant corporate stakeholders of the business.

III. Methodology

3.1 Research Design

The study uses the ex-post facto research design in answering the research questions raised on the relationship between sustainability reporting and firm value of listed industrial goods companies in Nigeria for the period of 2016 to 2021 because the researcher does not intend to manipulate the variables subject to investigation in the current study.

3.2 Population and Sampling of the Study

The population of the study is made up of all the listed consumer goods firms whose shares are quoted on the floor of the Nigerian Exchange Group and the selected sample size is sixteen (16) out of the twenty-one (21) listed consumer goods companies using the filtering method and simple random sampling techniques. The sampled companies are; Honeywell Flour, Guinness Nigeria, Flour Mills of Nigeria, Unilever, Nestle Nigeria, Cadbury Nigeria, Vita Foam, PZ Cussons, Dangote Sugar, Nigeria Brewery, Nigerian Enamelware Plc, National Salt, International Brewery, Nigerian Northern Flour Mills, Micholis Plc and Champion Brewery Plc.

3.3 Model Specification

The robust least square regression technique was adopted in this study to examine the effect of sustainability reporting on firm value. The functional model is shown in the model below:

FV = f(ESR, ENVR, SSR)

The regression model with error term is specified below;

$FV_t = \beta_0 + \beta_1 ESR_t + \beta_2 ENVR_t + \beta_3 SSR_t + e_t$ …………………………………………..…….. (1)

Where:

FV =Firm value

ESS= Economic sustainability reporting

ENVR = Environmental sustainability reporting

SSR = Social sustainability reporting

β_0 = Constant

e_t = Error term

3.4 Data Sources and Analysis Method

The study made use of secondary data which were sourced from the annual reports of the selected listed consumer goods companies on the Nigerian Stock Exchange" and publications of the Nigerian Stock Exchange. The study also employed a robust least square regressions technique, descriptive statistics, and Pearson correlation matrix to examine the relationship between the dependent and independent variables. The analysis was performed using EViews 9.0 econometric software.

IV. Data Presentation and Analyses

4.1 Presentation of Results

The descriptive statistics of the study was presented in the Table 1 below:

Table 1: Descriptive Statistics

	FV	ESR	ENVR	SSR
Mean	1.637439	9.314260	0.786957	0.750000
Median	1.086000	4.135100	0.800000	1.000000
Maximum	9.146300	100.2750	1.000000	1.000000
Minimum	0.230100	-20.44000	0.000000	0.000000
Std. Dev.	1.776530	19.32063	0.271430	0.435385
Skewness	3.046848	2.444675	-1.631883	-1.154701
Kurtosis	11.96109	10.53417	5.172379	2.333333
Jarque-Bera	450.1644	309.2328	58.92370	22.14815
Probability	0.000000	0.000000	0.000000	0.000016
Sum	150.6444	856.9119	72.40000	69.00000
Sum Sq. Dev.	287.2013	33969.08	6.704348	17.25000
Observations	92	92	92	92

Source: EViews 9.0 output (2023)

The descriptive statistics in Table 1 show the characteristics of the variables used in the study. It was revealed that the average firm value (FV) was 1.63 which was above the median value of 1.08 with a corresponding standard deviation value of 1.77. This indicates that there is a low level of variation among the sampled companies. Economic sustainability reporting (ESR) on average was 9.31 with a corresponding standard deviation value of 19.32. This means that the value of ESR is above the median value of 4.13. This implies that there is a high level of economic reporting. Environmental sustainability reporting (ENVR) on average was 0.78 with a corresponding standard deviation value of 0.27. Environmental information reported is below the average of 0.80 which indicates that most of the companies disclose environmental information in the annual report. Social sustainability reporting (SSR) on average was 0.75 with a corresponding standard deviation value of 0.43. This implies that about 75% of the sampled companies are involved in social sustainability reporting.

Testing the normality of the variable, Jarque–Bera statistics revealed that firm value, economic sustainability reporting, environmental sustainability reporting, and social sustainability reporting were normally distributed at a 1% level of significance.

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4.1.1 Pearson Correlation Matrix Results

The Pearson correlation matrix result was presented in Table 2 below.

Table 2: Correlation Matrix

	FV	ESR	ENVR	SSR
FV	1.000000	0.654087	0.230347	0.117325
ESR	0.654087	1.000000	0.156242	0.036283
ENVR	0.230347	0.156242	1.000000	0.808996
SSR	0.117325	0.036283	0.808996	1.000000

Source: Eviews 9 (2023)

The Pearson correlation coefficient result in Table 2 revealed that economic sustainability reporting (ESR) was positive and moderately correlated with firm value (FV=0.6540), environmental sustainability reporting (ENVR=0.1562), and weakly correlated with social sustainability reporting (SSR=0.0362). This indicates that an increase in ESR leads to an increase in firm value. Environmental sustainability reporting (ENVR) was positive and moderately correlated with firm value (FV=0.2303), economic sustainability reporting (ESR=0.1562), and highly correlated with social sustainability reporting (SSR=0.8089). This implies a high level of environmental reporting brings about an increase in firm value. Social sustainability reporting (SSR) was positive and moderately correlated with firm value (FV=0.1173), social sustainability reporting (SSR=0.8089), and weakly correlated with firm value (FV=0.0362). This means that positive changes in social reporting affect firm value.

The result also showed a largely high correlation value was found between environmental sustainability reporting and social sustainability reporting with a coefficient value of 0.8089. This is an indication that the problem of multicollinearity is likely to be present in the distribution. To check the existence, a variance inflation factor was conducted and presented in Table 3 below.

Table 3: Variance Inflation Factors

	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	0.209698	10.65252	NA
ESR	5.60E-05	1.297115	1.050326
ENVR	0.820060	28.83492	3.035793
SSR	0.311352	11.86236	2.965589

Mean Aggregate Value =2.3505

Despite the indication of no problem of multicollinearity as observed from the correlation matrix result, the assumption was further strengthened by the result of the Variance Inflation Factor (VIF) test presented in Table 4.3. The decision rule is that if each of the explanatory variables has a VIF of less than ten (10), it will be suggestive that it does not correlate with the other independent variables. However, if a variable exhibits VIF of up to, or more than ten (10), then it correlates with another independent variable(s), and as such, it should be dropped. As observed from the Table, all the centered VIF values are close to the value of 1 and far below the benchmark value of 10. This is an indication of an absence of multicollinearity issues among the variables. This means that in an absence of multicollinearity among the variables, thus there would be likely no issue of unstable parameter estimates in the regression lines.

4.1.2 Regression Results

The robust regression result conducted was presented in Table 4 below.

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Table 4: Robust regression results

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	0.788506	0.168170	4.688755	0.0000
ESR	0.010849	0.002748	3.947914	0.0001
ENVR	0.707749	0.332562	2.128170	0.0333
SSR	-0.395267	0.204916	-1.928920	0.0537
R-squared	0.067653	Adjusted R-squared		0.035869
Rw-squared	0.169210	Adjust Rw-squared		0.169210
Akaike info criterion	127.2779	Schwarz criterion		140.3487
Deviance	32.21976	Scale		0.513353
Rn-squared statistic	24.93772	Prob(Rn-squared stat.)		0.000016
	Non-robust Statistics			
Mean dependent var	1.637439	S.D. dependent var		1.776530
S.E. of regression	1.728881	Sum squared resid		263.0346

Source: E views 9 output (2023)

Decision Rule: Hypotheses are tested at 5% (0.05) at a level of significance. The null hypothesis (HO) was accepted if the probability value (P-value) is greater than 5% (0.05) otherwise rejected.

It was observed from Table 4 above that the coefficient of determination (R2) value of 0.067653 revealed that about 7% of the systematic variation in firm value is jointly explained by explanatory and control variables. This was supported by an adjusted R2 of 4%. On account of the overall significance of the model, the Rn (R2) statistic value of 24.93 and its associated probability of 0.00 indicate that all the independent variables taken holistically significantly explain the dependent variable. Hence, the explanatory power of the model is strong.

More importantly, economic sustainability reporting (ESR) has a positive coefficient (0.01) and significant (0.00) effect on firm value (FV) at a 1% level of significance. The positive effect indicates that an increase in ESR would lead to an increase in firm value but it is statistically significant at 1%. The significant effect is because the variable passed the z-test at a p-value < 0.05 level of significance.

The result also observed that environmental sustainability reporting (ENVR) has a positive coefficient (0.70) and significant (0.00) effect on firm value (FV) at a 5% level of significance. The positive effect implies that changes in ENVR would lead to an increase in firm value but it is statistically significant at 5%. The significant effect is because the variable passed the z-test at a p-value < 0.05 level of significance.

Social sustainability reporting (SSR) has a negative coefficient (-0.39) and a significant (0.65) effect on firm value (FV) at a 5% level of significance. The positive effect implies that changes in SSR would lead to an increase in firm value but it is statistically significant at 5%. The significant effect is because the variable passed the z-test at a p-value < 0.05 level of significance.

4.2 Test of Hypotheses

The three (3) null hypotheses earlier formulated in the first chapter of the study were tested in this sub-section. The z-statistics and probability values of each of the variables were used for the hypotheses testing.

Test of Hypothesis One (1): Economic sustainability reporting has no significant effect on firm value in Nigeria. The regression results showed that economic sustainability reporting had a positive and significant effect on firm value at a 1% level of significance. Therefore, the hypothesis should be rejected that economic sustainability reporting has a significant effect on firm value.

Test of Hypothesis Two (2): Environmental sustainability reporting has no significant effect on firm value in Nigeria. The regression results showed that environmental sustainability reporting had a positive and significant effect on firm value at a 5% level of significance. Therefore, the hypothesis should be rejected that environmental sustainability reporting has a significant effect on firm value.

Test of Hypothesis Three (3): Social sustainability reporting has no significant effect on firm value in Nigeria. The regression results showed that social sustainability reporting had a negative and significant effect on firm value at a 5% level of significance. Therefore, the hypothesis should be rejected because social sustainability reporting has a significant effect on firm value.

V. Conclusion and Recommendations

The results of the descriptive statistics indicated that firm value, economic sustainability reporting, environmental sustainability reporting, and social sustainability reporting were normally distributed at a 1% level of significance. The correlation analysis revealed that a significant association exists between the variables. The outcome of the robust regression showed that economic sustainability reporting had a positive and significant effect on firm value at a 1% level of significance, environmental sustainability reporting had a positive and significant effect on firm value at a 1% level of significance and social sustainability reporting had a negative and significant effect on firm value. Against this backdrop, the following recommendations were made:

1. Based on the significance of the variable of economic sustainability reporting, the study recommended that the management of consumer goods companies should focus more on economic sustainability reporting for improving the value of the firm.
2. Similarly, environmental sustainability reporting was found to be statistically significant in increasing firm value. There is an urgent need for management to engage in environmental sustainability reporting.
3. Social sustainability reporting negatively and statistically affects firm value. The study recommended that management should be careful of social reporting as it has an adverse influence on firm value.

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