

SOCIAL AND ENVIRONMENTAL IMPACT ON FINANCIAL PERFORMANCE OF SELECTED LISTED CEMENT MANUFACTURING FIRMS IN NIGERIA

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Abstract

The question of the balance between corporate sustainability initiatives and profitability has been widely discussed. The problems facing today's managers were how to manage performance across sustainable dimensions so that the synergistic advantages of its execution approach may be derived. Conflicts between companies and their host communities arise because companies fail to comply with their duties to society. Hence, the study aim examines social and environmental impact on financial performance of selected listed manufacturing firms in Nigeria. The study adopted ex-post facto research design. The study looks at social and environmental impact on the financial performance of listed cement manufacturing firms in Nigeria for period from 2011 to 2020. The variables for the study are community relations, research and development and return on capital employed. Three (3) cement companies were used namely BUA cement plc, Dangote cement plc and Lafarge cement plc. Findings reveal that environmental disclosure especially R&D disclosures has a significant effect on firm financial performance as these items show-up in the fixed effects regression with statistically significant p-values. Likewise, findings reveal that social disclosure especially Community relations disclosure has an insignificant effect on firm financial performance. The study concluded that environmental disclosure impact firm financial performance in a significant way while social disclosure does not. It is therefore recommended that shareholders and the government should ensure compliance with environmental regulations, especially in the area of environmental disclosures as this helps the firms

to be conscious of the environment where it belongs.

Keyword: Social, environmental, financial, performance

Introduction

Firms around the world are currently obliged to expand financial reporting standards which is important to their existence especially in an era where there are issues with environmental degradation effect on humans and other environmental factors. Industrialization became big after the 18th century (Tapang, Bassey and Bessong, 2012). This industrial revolution brought economic improvement and prosperity (Mastrandrea and Schneider, 2008) as cited in (Makori and Jangongo, 2013). This improvement made companies in recent years face pressure from stakeholders and they started publishing their sustainability report (KPMG International, 2011). As sustainability reporting gained in popularity, industries began to publish their sustainability report.

In Nigeria, firms are expected to make voluntary full disclosure on (social and environmental) sustainability reporting as regard the community in which they operate. Elkington (1998) initiated the triple bottom line concept of profit (economic), people (social) and planet (environment) disclosures that are relevant to stakeholders. This practice however, has grown significantly over the years (KPMG International, 2013). Manufacturing companies especially cement companies in Nigeria are at the fore-front

of this as their business success or failure depends on how they relate with their host communities and the society at large (Murray, 2010). Sustainability reporting is an improvement of the traditional way of financial reporting. This integral part of financial reporting has three dimensions which are economic, environment, and social report disclosure which measure ability of an organization to meet its obligations to the society (Krkac, 2007). This study is restricted to the social and environmental factors of sustainability reporting. The dimensions of sustainability reporting are measured in terms of return on assets, community relations disclosure and research and development.

Community relations disclosure deals with philanthropy and social investment, the allocating of funds for community development which may result in conflicts with organizations (Idemudia and Ite, 2006). They are developmental projects within and outside the host communities such as building or renovation of schools, buildings, hospitals and donations. Gitman, Chad and Zutter (2012) describe research and development as the outcome of creative activities (such as those undertaken in an organization) over a certain period of time. Financial performance can be used as a measure of a firm's overall financial level over particular time duration and can be used for comparison of general performance of different firms operating in the same industry (Henri and Journeault 2010). The issue of whether there is a balance between investments in corporate sustainability and profitability has been heavily debated. The challenges before today's managers has been how to manage performance across the dimensions of sustainability in order to derive the synergistic benefits from its implementation strategy. Conflict between firms and their host communities occur as a result of the firms not fulfilling their obligations towards the society. Some firms take community relations for granted and do not provide basic facilities for this firms. They do not consider building schools and other facilities for their host communities, donations, scholarship to students and youths in the communities. This eventually leads to conflict between the business organization and her host communities. Business organization's inability to commit resources on research and development and see how their operations affect their communities in which they operate and look for better ways of improve their operations and products is of major concern. Hence, the study

aimed at examining social and environmental impact and financial performance of selected listed manufacturing firms in Nigeria.

Review of Related Literature

Sustainability Reporting and Financial Performance

Dibia and Nwaigwe (2017) define social and environmental reporting as the level of human consumption and activity which can continue into the foreseeable future, so that the systems which provide goods and services to humans persist indefinitely. Sustainability report was named in 1994 by Elkington, the founder of a British Consultancy, Sustain-Ability (Elkington, 1998, 2004).

Community Relations Disclosure

Delannon, Raufflet and Baba (2016) describe community relations as a company's interactions with the community in which it resides. Cheryl (2000) defined community relations as the consequence of a generous corporate culture in which relations just happen to be helpful.

Research and Development Disclosure

Research and development includes experimental development, applied analysis and basic analysis (Seraina, 2008). The total domestic cost on research and development is defined as the total expenditure (current and capital) on research and development by all companies, institutes, and university and government

Financial Performance

Performance is defined as the end result of activity, and the appropriate measure selected to assess corporate performance is considered to depend on the type of organization to be evaluated and the objectives to be achieved through that evaluation (Hunger & Wheelan, 1997, Desatnik, 2000).

Theoretical Review

Stakeholder Theory

According to Freeman (1984), the stakeholder theory maintains that firms have stewardship role towards a variety of stakeholders, different from shareholders, i.e. creditors, customers, suppliers, employees, government, community, environment, future generations, etc. King (2002) acknowledged the importance of integrated sustainability reporting in strengthening the

relationship between firm and society in which it operates. A firm understands the role the customers, suppliers, creditors, government, environment and the host community play towards the success of firms. Therefore, firms owe these stakeholders a lot including making adequate disclosure of financial and non-financial performance

Agency Theory

It was first developed by Alchian and Demsetz (1972) and was further developed by Jensen and Meckling (1976). They focused exclusively on the positive aspects of the agency relationship as it applies to corporations. That is how to structure the contractual relation between the owner and manager to include the manager to make choices that will maximize the owners' welfare, given that uncertainty and imperfect monitoring exist. However, as a result of the separation of ownership from control, agency theory sees the shareholders as principal and management as agents. More so, shareholders expect the agents to act and make decisions in the principal's interest. On the other hand, the agent may not necessarily make decisions in the best interest of the principals (Padilla, 2000). Sustainability Reporting reduces information asymmetry and risk perceived by investors, increases market efficiency and reduces cost of capital to firm (Dhaliwal et al., 2011; Warren & Thomsen, 2012).

Signaling theory

The concept of signaling was developed in 1973 by Spence; based on the seminar paper of Akerlof in 1970. Signaling is a general phenomenon applicable in any market with information asymmetry. The theory shows how asymmetry can be reduced when the party with more information signals it to others (Morris 1987). Similar to agency theory, the signaling theory recognizes the separation of ownership and management and recognizes that the market pressures motivate managers to disclose information

Slack Resources theory

Availability of financial resources is a determinant of corporate social performance that is firms that are able to invest in corporate social responsibility will perform better (Waddock and Graves, 1997). This theory refers to the stock of excess resources available to an organization during a given

Legitimacy Theory

This theory was first developed by Dowling and Pfeffer in 1975 and it assume that a company should not be in existence unless it can meet the expectations of the society in which it operates. Lindblom (1994) described legitimacy as a condition or status which exists when an entity's system is congruent with the value system of the larger social system of which the entity belong. However, whenever there is potential or actual disparity between the two value systems, entity's legitimacy is threatened. Legitimacy theory came from political economy theory (Davidson, Stewart, & Kent, (2005) and anchored on the idea that the legitimacy of a company to operate in society rest on an implicit social contract between the company and society in which it operates. According to Deegan & Blomquist (2005), managers continuously attempt to ensure that their companies adhere strictly to its social contract by operating within society's expectations. Managers have duty to disclose information that indicates that the company is not in breach of the norms and expectations of society (Connelly, 2012). Legitimacy theory is therefore issues that relate to the perception of the society based on the information on the company. This perception is base on the information upon which outside users base their opinion on by using their annual reports as legitimate means of giving out information (Magness, 2006; and Lightstone and Driscoll, 2008). The theory is therefore relevant to this study in that the existence of a company is non-essential if it considers not its impact on its immediate environment.

Empirical Review

The existing literature on the relationship between social (community relations) and environmental reporting (Research and Development) and financial performance is comprised of mixed findings.

Research by Kiraci, Celikay and Celikay (2016) examined the effect of firm's research and development cost on profitability in Turkey between 1998 and 2012. Forty-six (46) quoted manufacturing firms in the Turkish stock exchange annual report were analysed and data was used to analyse the data. The findings showed that although research and development costs do not have a statistically significant effect on the short-run profitability of a firm, they do have significant effect on the long-term profitability.

Lome et al. (2016) studied the effect of intensity in R&D on financial performance during financial crisis using a sample of 247 Norwegian industrial companies between 2004 and 2009. Annual reports of these firms were analysed using multiple regression technique. The Results showed that companies with more investment in R&D were better in financial performance during the financial crisis. Also, R&D investment was more during the financial crisis than in other periods. Mohammed, Saheed& Oladele (2016) investigated corporate social responsibility disclosure and financial performance of listed manufacturing firms in Nigeria within the period of 2001 and 2012. Annual reports of ten (10) manufacturing firms were gathered and data extracted and multiple regression was used to analyse the data. The findings show that research and development, community relations and product have significant positive effect on earnings per share. The higher the level of corporate social responsibility disclosure, the higher earnings per share. Abdel and Raed (2017) examined the impact of Research and Development cost on financial performance of listed Pharmaceutical firms in Jordan from 2006 to 2010. The annual report of 5 (six) firms were used and data extracted and analysed using simple linear regression square technique. The findings show that there is a significant impact of research and development cost on firm performance in developed countries. Umobong and Agburuga (2018) examined the relationship between financial performance and corporate social responsibility of quoted firms in Nigeria from 2005 to 2015. The study used secondary data and content analysis, Tobin Q and logit regression was used to analyse the data. The findings revealed that return on assets and return on capital employed relates negatively with community development.

Jian, Feng and Chen (2019) evaluated the relationship between Research and Development, Advertising and firm's financial performance in South Korea from 2012 to 2016. Annual reports of 598 listed firms were used and multiple regression technique was used to analyse the data. The findings show that Research and Development and Advertising are complementary in South Korea. Secondly, for large firms, Advertising is positively and significantly associated with financial performance and Research and development cost has a negative impact on the financial performance of small

firms. Nwambeke, Udama&Oko (2019) examined the impact of environmental accounting disclosure on financial performance in cement companies in Nigeria from 2006 to 2017. Secondary source of data was used to extract data and panel data regression model was used to analyse the data extracted. The findings revealed that the level of charitable contribution costs have positive and significant impact on the financial performance of cement companies while the level of community development cost has positive and significant impact on the financial performance of cement companies in Nigeria.

Dalida (2020) examined the relationship between Research and Development (R&D) intensity and both of the financial performance and firm value for (13) thirteen pharmaceutical companies listed on Egyptian Stock Exchange for the period from 2000 to 2019. The study examined the relationship between R&D intensity and both of the current and future performance. Findings indicated a significant positive relationship between R&D intensity and future firm performance measured by ROA. Aditi and Madhumita (2021) examined the relationship between corporate social responsibility disclosure and financial performance in Indian firms. Data were collected from the annual reports of companies quoted in the Bombay stock exchange. Multiple regression analysis was adopted to analyse the data the data. The findings revealed that that the aggregate corporate social responsibility disclosure measures have a positive association with the accounting measures of firms' financial performance. Sinha and Mondal (2021) investigated the impact of lagged Research and Development expenditure on financial performance. The study analysed (69) sixty-nine pharmaceutical companies included in the BSE healthcare index (India) using secondary data for the period of 2008 to 2017. The two dependent variables which are considered separately are Return on Asset (ROA) and Return on Equity (ROE). The two estimated regression models show that both the lagged value and its quadratic term have a significant influence on the accounting-based measures. With regard to the control variables, size and leverage are found to influence negatively whereas liquidity poses a positive effect on these two accounting-based performance measure.

Methodology

The study adopted *ex-post facto* research design. The study looks at social and environmental impact on the financial performance of listed cement manufacturing firms in Nigeria for period from 2011 to 2020. The variables for the study are community relations, research and development and return on capital employed. Three (3) cement companies were used namely BUA cement plc, Dangote cement plc and Lafarge cement plc. The three are the major cement companies in Nigeria. The reason for choosing cement firms over other manufacturing firms listed on the Nigerian Stock Exchange is because cement firms constitute the major companies where the society is affected by production activities and their raw materials are extracted from within the society in which they operate. They are responsible for major water pollution, air pollution and soil pollution. These firms pollute the community and society at large and they bring back part of it to take care of the environment.

Description of Model Variables

From the specified regression equation, we measured financial performance by Return on Assets (ROA). **ROA** is the quotient of dividing profit after tax by total assets.

Community Relations Disclosure: This is the proportion of amount spent on donations and community development projects to total income.

Research and Development Disclosure: This has to do with the amount disclosed in the financial statement which the company spent on research and development. It is measured using total cost of research and development to total revenue.

Model Specifications

The model has been modified in tandem with Nnamani, Onyekwelu and Ugwu (2017) in their study titled the effect of sustainability reporting on financial performance of firms in Nigeria

brewery sector was used though subject to some modifications. The structure is as follows:

$$PEF = f(SUS)$$

$$PERF_t = \alpha_0 + \beta_1SUS_t + U_t \dots \dots \dots \text{eqn. 1}$$

Where:

PERF = Performance of Nigerian Manufacturing firms

SUS = Sustainability Accounting

α = constant

β = co-efficient of the independent variables

U = error term

The specific models are as follows:

$$ROA_t = \alpha_0 + \beta_1CRD_t + \beta_2RD_t + U_t \dots \dots \dots \text{eqn. 2}$$

Where:

ROA = Returns on Asset

CRD = Community Relations Disclosure

R&D = Research and Development Disclosure

t = time covered in this study (10 years).

Table 1 report the result of the descriptive statistics of the variables. The average of sampled ROA was 0.1080, with industry mediana value of 0.1175. The maximum ROA was 0.2980 and minimum stood at -0.060. The ROA varied from the mean at the estimated value of 0.077. ROA was skewed and also normally distributed with Jarque-Bera statistics of 1.8987. The average of CRD stood at 0.011 with median value of 0.004. CRD report the maximum value of 0.120. The minimum CRD was 0.001. The variable reject the null hypothesis of non-normality. The mean of research and development was 0.2726. The median of RD was 0.1350 and the maximum value of RD was 0.9700. The minimum of RD stood at 0.0010. The variable report positive skewness and normally distributed. The outcome of the descriptive statistics analysis indicates that all the three variables exhibited no outliers, because the mean and median of the variables are close.

Table 1: Descriptive Statistics

	ROA	CRD	R D
Mean	0.1080	0.0118	0.2726
Median	0.1175	0.0040	0.1350
Maximum	0.2980	0.1200	0.9700
Minimum	-0.0600	0.0010	0.0010
Std. Dev.	0.0776	0.0236	0.3131
Skewness	0.4885	3.5554	0.7658
Kurtosis	3.7511	16.0593	2.0133
Jarque-Bera	1.8987	276.3892	4.1499
Probability	0.3869	0.0000	0.1255
Observations	30	30	30

Correlation Matrix

One of the problem of the least square is the multicollinearity problem. This is the correlation among the independent variables. When the correlation high, the standard error of the estimate will either be overstated or understated. In view of this, the study obtained the correlation among the

variables as reported in table 2. The correlation results in Table 2 showed that the independent variables were not correlated with each other. Form the evidence in the table 2, it was obvious that existence of multicollinearity is less likelihood among the variables.

Table 2: Correlation Analysis Matrix

Correlation Analysis: Ordinary			
Correlation			
Probability	ROA	CRD	R D
ROA	1.0000		

CRD	0.0533	1.0000	
	0.7795	-----	
R D	-0.5869	0.0739	1.0000
	0.0007	0.6976	-----

This section reports the social and environmental impact on financial performance of selected listed manufacturing firms in Nigeria. Fixed effect and random effect were estimated as reported in table 3. The of Hausman test was indicates that fixed effect was the most appropriate model. In view of this result the study will report the outcome of the analysis of fixed effect model in table 3. R-squared of the model indicates that 65.53% of the variation in the dependent variable. The f-value indicates that the variables are jointly different from zero at 5% level of significance. The variable of research and development was positively related to the financial performance of

the firms ($t=2.2330$, $p<0.05$). Research and development exert 0.1927 coefficient effect on the financial performance. This implies that investment on research and development enhances the manufacturing performance. However, insignificant relationship was discovered between firm performance and community relations disclosure with t-value of -0.9395. Community relations disclosure report weak effect on the financial performance because the finished goods of the firms are essential and also they enjoy closed domestic market with no foreign competition.

Table 3: Regression Analysis

	Random Effect Model		Fixed Effect Model	
	Coefficient	t-value	Coefficient	t-value
CRD	0.3196	0.766101	-0.3292	-0.9395
R_D	-0.1472	-4.678467	0.1927	2.2330
C	0.1444	10.61952	0.0594	2.5878
R-squared	0.3539		0.6553	
Adjusted R-squared	0.3061		0.6002	
F-statistic	7.3966		11.8869	
Prob(F-statistic)	0.0027		0.0000	
Hausman Test	15.2727(p=0.000			

Conclusion and Recommendations

R&D can be likened to innovation and it puts the company ahead of its competitors. It is usually separated from operational activities carried out in a company. Companies who venture into this do not have expectation of an immediate profit but is expected to contribute to the long-term profitability of the company. Patents, copyrights, and trademarks are improved due to the discoveries made and new products introduced. Findings reveal that environmental disclosure especially R&D disclosures has a significant effect on firm financial performance as these items show-up in the fixed effects regression with statistically significant p-values. Likewise, findings reveal that social disclosure especially Community relations disclosure has an insignificant effect on firm financial performance. The study concluded that environmental disclosure impact firm financial performance in a significant way while social disclosure does not. It is therefore recommended that shareholders and the government should ensure compliance with environmental regulations, especially in the area of environmental disclosures as this helps the firms to be conscious of the environment where it belongs.

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