European Journal of Business and Management
ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online)
Vol 4, No.14, 2012

Boards' Gender Mix and Extent of Environmental Responsibility Information Disclosure in Nigeria: An Empirical Study

Musa Inuwa Fodio[1] Victor Chiedu Oba[2*]
1. Department of Accounting, University of Abuja, Pmb 114, University of Abuja, Nigeria
2. Doctoral Candidate, Department of Accounting, Nasarawa State University, Keffi, Nigeria
* E-mail of the corresponding author: oba156@yahoo.com

Abstract
This study examines the extent to which environmental information disclosure is predicted by a board's gender mix. An empirical analysis of panel data from environmentally sensitive sectors of the Nigerian stock exchange shows that the presence and proportion of female directors on a board has a significant impact on its environmental responsibility and information disclosure. Slack resources in contrast had no effect on the extent of environmental practices of sample firms. The study recommends conscious efforts both at firm and governmental levels in striking equipoise in the gender mix of corporate boards and also defining stringent rules in practices and reporting of environmental concerns.
Keywords: Social responsibility, corporate governance, environmental reporting, emissions, labor discrimination

1. Introduction

Corporate social responsibility (CSR) is one of the burning issues in Nigeria. Companies maximizing profits from communities are not responding appropriately to the needs of host communities through environmental protection, strategic philanthropy and community development.

Organizational social responsibility started in the 1960's with the emergence of various social movement e.g. civil rights, women liberation and environment protection association in the United States of America. However, in modern times, the dire need to solve the problems of organizations and their host communities brought in a new perspective in corporate social responsibility. The generally accepted expectation and trend now is that business organizations make profit through legal means and at the same time identify human rights, gender equality and especially environmental protection as core values in CSR. Protecting the environment has been clearly identified as a social responsibility of corporations and as such reporting on this area of sustainability is presently emerging as a crucial issue. There is a growing concern of the society as well as business organizations on environmental issues and the importance of disseminating environmental information. As such environmental reporting has been utilized as the vehicle for expressing the extent of commitment of organizations to the environment and their stakeholders at large.

Corporate environmental reporting has become a critical matter in today's corporate reporting. It has just emerged in the last decade and is at a voluntary stage in most developing countries as Nigeria. Notwithstanding, environmental reporting is a discharge of sound corporate governance practices since at the heart of corporate governance is information disclosure because the higher the disclosure, the better the reduction of information asymmetry and classification of possible conflicts of interest between stakeholders and management.

In this light, good corporate governance requires assessing the impact a corporation has on the wider community and the environment (Andrew, 2003) and thereby creating an overlap between the shareholder conception of corporate environmental disclosure and board competition with a view to adding value to the firm (Freeman, 1984).

According to Uwalomwa et al (2012), corporate environmental disclosures have become more salient to board members as thinking at the top of organizations shift towards more broadly defined performance than just the bottom line. Kassinis and Vafeas (2002) identify disclosure on environmental issues as having the potential to increase shareholders' wealth and can be regarded as one of the elements of good corporate governance. Other research works document that environmental information is important to the users in making investment decisions (Tilt, 1994) and that environmental reporting provided by the companies will benefit the companies itself (O' Dwyer, 2001) in order to build companies' image and show the companies' social responsibility (O' Donovan, 2002).

2. Female Directors on the Board

Most research on women as directors of boards has focused on women's under-representation on boards which was documented as early as 1977 (Burson–Marsteller, 1977) and continues to be well documented by many re-

searchers (Burke and Mattis, 2000). Clearly men occupy most board seats, leading researchers to the suggestion that the few women appointed to boards are 'token' (Scherer, 1997).

The issue of having women on boards of directors is a topic that is recently engendering interest in various quarters with majority of studies showing the positive effects of gender diversity on corporate boards. Companies with high female representation on their board tend to have stronger corporate governance than those with few or no women on the board of directors (Rosener, 2003) and consider the needs of a wider range of stakeholders than male directors (Konrad and Kramer, 2006). Boards with female directors also tend to use more non-financial performance measures (such as innovation and social responsibility) to evaluate their companies than their all-male counterparts (Stephenson, 2004). Bernard and Threadgill (2010) argue that as companies increase the number of women serving on their boards, their customers tend to be more satisfied, revenues and profits tend to increase and the companies tend to develop a more positive corporate environment. Some researchers suggest that a board's decision making process is enhanced when additional female members are brought on board (Bernardi et al, 2009; Konrad and Kramer, 2006).

Gender quotas have recently arrived in the business world. The most widely known example of corporate board quotas is in Norway, where a 40% gender quota for public limited and state owned companies was introduced in December 2003 (Hoel, 2008). Such legislated board quotas have since been introduced in Spain (2007) and France, Iceland and the Netherlands (2010) see Marinova et al (2010). France has set a 40% target to be attained in 2016, Spain (2015) while the Netherlands has not set a target date for compliance and simply requires non-compliance to be explained in a company's annual report. Such quotas are also being discussed in Belgium, Canada and Italy where laws are pending at different stages of the ratification process (Sealy et al, 2008).

In Nigeria no such laws exists or are being deliberated. The vision 2020 (National Technical Working Committee on Corporate Governance and Corporate Social Responsibility) which was discarded before implementation only advocated for greater participation in corporate governance matters but was without specifics.

In any case, as members of underrepresented groups in corporations, women directors are expected to be more interested in the welfare of various stakeholders. Ibrahim and Angelidis (1994) in their study affirm that female directors tend to be more sensitive to CSR than their male counterparts. The question then remains: Are those companies that bring women into their boards more likely to be involved in environmental responsible actions and present these actions in their annual report?

2.1 Theoretical Underpinnings and Hypotheses

According to Terjesen et al (2009), gender diversity scholars use the resources dependency framework and theory to argue that today's increasingly complex and uncertain environment requires leadership from individuals who can provide a breadth of resources including prestige, legitimacy and diversity. A number of research works utilize a resource dependency lens that views firms as operating in an open system and needing to exchange certain resources in order to survive, creating a dependency between the firms and external units.

The resource dependency theory considers agents as a resource since they provide social and business networks and influence the environment in favor of their firm (Pearce and Zahra, 1992). It further suggests that the selection of a gender mixed board will provide more resources, information and legitimacy to the board (Johnson, Daily and Ellstrand, 1996). It is along this line that this study thus hypothesizes that:-

H_1 – Board Gender mix has no significant impact on the extent of environmental responsibility disclosure.

The general assumption in extant research is that environmental responsibility is expensive and cannot directly maximize shareholder value (Rose, 2007). The Slack Resources theory argues that firms that have the requisite financial slack can more readily shoulder CSR expenses and investments (Johnson et al, 1996).

To account for the effect of financial slack on environmental responsibility disclosure, the study controls for slack resources of sample firms. The study employs formula as utilized by Bourgeois and Singh (1983) in identifying available slack as: current assets divided by current liabilities. It is therefore reasonable to come out with the following hypothesis.

H_2: Financial slack has no significant impact on environmental responsibility disclosures.

3. Methodology

The chemical and paints construction, conglomerates and building materials industries have been selected for this study because of their environmental sensitivity, direct contribution to environmental pollution and high impact on the environment (Haslinda et al, 2004). The final sample consists of 16 companies from these four industries for the study period of 2005-2007. List of the companies is found in Appendix A.

The study period 2005-2007 has been selected because of its outcry for environmental responsibility by stakeholders and also because of its current nature and more so data is available for the period at the time of carrying out this study. Both dependent and independent variables have been extracted from corporate annual reports. A multiple regression analysis has been employed to examine the impact of gender mix on extent of environmental reporting while the combinatorial method was used to control for financial slack in the model. The SPSS version 17.0 was employed to conduct the regression.

The study employs content analysis which is the most ideal method to explore environmental information in annual reports (Neuendorf, 2002; Sharifah, 2010). A developed checklist of 20 established environmental items is used to derive an environmental information disclosure index (See Appendix B).

Along the line of Cooke (1989), the index employs an unweighted dichotomous rating system which assigns 1 if item is disclosed and 0 if it is not disclosed. A firm could score maximum of 20 points and a minimum of 0.Formula for calculating the reporting scores by using the index is shown thus:

$$Ij = \sum_{i=1}^{Nj} Exij \quad (1)$$

Where IJ = Reporting score
nj = Number of relevant items for jth firm
Xij = 1 if ith item is disclosed and 0 if ith item is not disclosed.
i = 1,2,3…20

3.1 Model Specification

$$ENVR = B_0 + B_1PRESENCE + B_2PROPORTION + B_3SLACK + eit \quad (2)$$

Where
ENVR = Environmental responsibility disclosure index
Presence = Presence of woman in board (dummy variable)
Proportion = Board Gender mix (proportion of female directors)
Slack = Financial slack
eit = Gaussian White noise

4. Results and Discussion

Table 1. Descriptive Statistics

	Mean	**Std Deviation**	**N**
Presence	.5000	.50529	48
Proportion	.0769	.10464	48
Slack	1.1944	.61048	48
Envr	.2052	.12473	48
Valid N (List wise)	48		

Based on the descriptive statistics in Table 1, it is demonstrated that 50% of the sample firms had the presence of a female director while the percentage proportion of female directors to board size was 7%. On the other hand, financial slack stood at an average of 1.19 for the sampled firms. This suggests that the liquidity level of sampled firms for the period under study was quite tangible and thus meaningful for logical conclusions. Twenty percent (20.5%) of the total environmental scores were obtained. This is a dismal score. Regardless of the environmentally sensitive nature of the sampled firms, they still did not do appreciably well vis-à-vis environmental responsibilities and consequently disclosures.

Table 2 Correlations

	Presence	**Proportion**	**Slack**	**Envr**
Presence Pearson Correlation	1	.742**	.048	-.008
Sig (2 tailed)		.000	.746	.955
N	48	48	48	48
Proportion Pearson Correlation	.742**	1	.072	.377**
Sig (2 tailed)	.000		.626	.008
N	48	48	48	48
Slack Pearson Correlation	.048	.072	1	-.047
Sig (2 tailed)	.746	.626		.752
N	48	48	48	48
Envr Pearson Correlation	-.008	.377**	-.047	1
Sig (2 tailed)	.955	.008	.752	
N	48	48	48	48

** Correlation is significant at the 0.01 level (2 tailed)

Correlation matrix in table 2 reveals a number of significant correlations among the variables. As shown, association exists between the presence and proportion variables, and the proportion and environmental reporting variables.

Gujarati and Porter (2009) argue that a correlation matrix is free from multicollinearity when correlation coefficient falls below 0.8 or 0.9. In this study, multicollinearity does not appear as a problem in interpreting the result since the highest Pearson correlation is below the threshold of 0.8.

An assessment of the variance inflation factors and tolerance values on Table 3 go to support our results on the absence of multicollinearity. They both demonstrate acceptance levels going by Hair et al (1987).

Table 3. Coefficients

	Unstandardized coefficients		**Standardized coefficients**	**T**	**Sig**	**Collinearity statistics**	
Model	B	Std.error	Beta			Tolerance	VIF
Constant	.225	.036		6.177	.000		
Presence	.159	.045	.644	3.503	.001	.449	2.228
Proportion	1.026	.219	.860	4.676	.000	.447	2.235
Slack	-.016	.025	-.078	-.633	.530	.995	1.005

Results on table 3 reveal that both female director presence and proportion of female directors have positive significant impact on the extent of environmental responsibility information disclosure. The P values for both variables were < 0.05 and as such permits the rejection of the null hypothesis and acceptance of the alternative that boards gender mix is a positive significant predictor of the extent of environmental responsibility information disclosure. These results lend support to the findings of Bernardi and Threadgill (2010) that the presence of female board members has tangible effects on a company's social and environmental responsibility. The results also find defense in the work of Ibrahim and Angelidis (1994) who document that women are simply more inclined to be socially and environmentally oriented than their male counterparts.

On the other hand, financial slack had no effect on the environmental responsibility and information disclosure by sample firms. This conflicts with the findings of Johnson et al (1996) that firms that have requisite slack can shoulder more social and environmental expenses.

Table 4: Model Summary

Model	R	R-square	Adjusted R-square	Std. error of estimate	Durbin-Watson
1	0.577	.333	.288	.10524	1.502

a. Predictors: (Constant), presence, proportion, slack
b. Dependent variable: Envr

Table 5: Anova

Model	Sum of squares	Df	Mean square	F	Sig
Regression	.244	3	.081	7.339	0.000
Residual	.487	44	.011		
Total	.731	47			

An examination of the model summary shows that the adjusted R^2 of the model was 0.288. This suggests that 28.8% of the changes in environmental responsibility information disclosure are explained by the gender mix variables. This is a reasonable fit since there certainly would exist other unrelated variables that explain the variation of the dependent. The Durbin Watson statistic stood at 1.502. It explains the absence of serial correlation in the model's error term since it falls within the threshold of '2' (Hair et al, 1987).
The overall significance of the model was also firmly established by the F-statistic with its P-value <0.05.

5. Conclusion

This study basically examined the nexus between a board's gender mix and the extent of its environmental responsibility and disclosure. Interesting findings emerged from the results which could be of vital importance to researchers investigating gender issues in the Nigerian corporate terrain.

The study observed that a board's gender mix and presence of a female director have positive impact on the extent of the organization's environmental responsibility information disclosure. This result is however in tangent to the resource dependency theory that suggests that the selection of a gender mixed board will provide more information to the board. However, the findings of the study seem to conflict with the slack resources theory. The results of the investigation do not align with the argument that firms react to environmental issues in accordance to their financial slack levels. Consequently, this paper concludes that environmental responsibility and resultant disclosures should not be anchored on liquidity levels but be seen to enhance corporate image and reputation. The government on its part should draft a rigid environmental reporting and practice guideline to be adhered to by listed firms. Also, conscious efforts are expected to be made by socially and environmentally responsible firms to strike a gender balance in their boards' formation.

Finally, this paper therefore calls for further investigations into possible female gender traits that trigger such social responsiveness and also environmental reporting patterns among listed, non-listed firms, environmentally sensitive and non-environmentally sensitive firms in Nigeria.

References

Andrew, J. (2003). Corporate Governance: The Environment and the Internet, *Electronic Green Journal*. Issue 19.

Bernardi, R.A. and Threadgill, V.H. (2010). Women Directors and Corporate Social Responsibility, *Electronic Journal of Business Ethics and Organization Studies.* Vol. 15, No.2, pp.15-21.

Bernardi, R.A; Bosco, S.M. and Columb, V.L (2009). Female Representation on Boards of Directors Associate with the most Ethical Companies List ,*Corporate Reputation Review*. Vol. 25, No.3 pp.270-280.

Bourgeois, L.J. and Singh, J. (1983). Slack Resources and Political Behavior within Top Management Terms, *Academy of Management proceedings*. 43-47.

Burke, R.J. and Mattis, M.C. (2000). Women Corporate Board of Directors: Where do we go from here? In R.J. Burke and M.C. Mattis. (eds), *Women on Corporate Boards of Directors* (Kluwer Academic Publishers, The Netherlands), pp.3-10.

Burson-Marsteller (1977). Study of Women Directors, New York: Burson Marsteller.

Cooke, T.E. (1989). Voluntary Corporate Disclosure by Swedish companies, *Journal of International Financial Management and Accounting*. Vol. 1, 171-195.

Freeman, F.R. (1984). *Strategic Management: A Stakeholder Approach*. Marshfield, M.A. Pitman.

Gujarati, D.N. and Porter, D.C. (2007). *Basic Econometrics*. McGraw-Hill International Edition, New York.

Hair, J.R; Anderson, R. and Tatham, D. (1987). *Multivariate Data Analysis*. Macmillan Publishing Company, New York.

Haslinda, Y; Normahiran, Y. and Noraini, M.N. (2004). Analysis of the Development of Environmental Disclosure Practices by Selected Malaysian Companies from 1999 to 2002, Fourth Asia Pacific Interdisciplinary Research in Accounting Conference, Singapore.

Hoel, M. (2008). The Quota Story: Five years of Change in Norway. In Vinnicombe, S; Singh, V; Burke, R. Bilimoria, D. and Huse, M. (eds). Women on Corporate Boards of Directors: *International Research and Practice*, 79-87. Edward Elgar, Chettenham.

Ibrahim, N.A. and Angelidis, J.P. (1994). Effect of Board Members' Gender on Corporate Social Responsiveness

Orientation, *Journal of Applied Business Research*. Vol.10 No.1 pp.35-40.
Johnson, J.L; Daily, C.M. and Ellstrand, A.E. (1996). Boards of directors: A Review and Research Agenda, *Journal of Management*, 22(3): 409-438.
Kassinis, G. and Vafeas, N. (2002). Corporate Boards and Outside Stakeholders as Determinants of Environmental Litigation, *Strategic Management Journal* 23(5): 391-415.
Konrad, A. and Kramer, V.W. (2006). How many Women do Boards need? *Harvard Business Review,* vol. 84, No.12, p.22.
Marinova, J; Platenga, J. and Remery, C. (2010) Gender Diversity and Firm Performance: Evidence from Dutch and Danish board rooms. *Working paper.* Available at http://igitar-archieve.library.uu.N/use/2010-0507.pdf
Neuendorf, K.A. (2002). The Content Analysis Guidebook. London Sage Publications Inc.
O'Donovan, G. (2002), Environmental Disclosures in the Annual Report: Extending the Applicability and Predictive Power of Legitimacy theory, *Accounting, Auditing and Accountability Journal* vol. 15, No.3, pp.344-371.
O' Dwyer, B. (2001). Corporate Environmental Reporting, *Accountancy Ireland* vol.3, No.2 pp.18-19.
Pearce, J.A. and Zahra, S.A. (1992). Board Composition from a Strategic Contingency Perspective, *Journal of Management Studies*, vol.29, No.4 pp.411-438.
Rose, C. (2007). Does Female Board Representation Influence Firm Performance? The Danish Evidence, *Corporate Governance: An International review* 15(2): 404-13.
Rosener, J.B. (2003). Women on Corporate Boards make good Business Sense, *Directorship* vol.29, No.5 pp.7-11.
Scherer, K. (1997). Women directors: Talent before Gender, *Corporate Board*, 17:1-5.
Sealy, R; Singh, V. and Vinnicombe, S. (2008). The Pipeline to the Board finally opens: Women's Progress on FTSE 100 Boards in the U.K. In Vinnicombe, S; Singh, V; Burke, R; Bilimoria, D. and Huse, M. (eds). Women on Corporate Boards of Directors: *International Research and Practice*, 37-46. Edward Elgar, Chettenham.
Sharifah, B. (2010). The Quantity and Quality of Environmental Reporting in Annual Report of Public Listed Companies in Malaysia, *Issues in Social and Environmental Accounting*. Vol. 4, No.2 pp 115-135.
Stephenson, C. (2004). Leveraging Diversity to Maximum Advantage: The Business Case for appointing more Women to Boards, *Ivey Business Journal* vol. 69, no.1 pp.1-5.
Terjesen, S; Sealy, R. and Singh, V. (2009). Women Directors on Corporate Boards: A Review and Research Agenda, *Corporate Governance. An International Review*, 17(3): 320-337.
Tilt, C.A. (1994). The Influence of External Pressure Groups on Corporate Social Disclosure. Some Empirical Evidence, *Accounting, Auditing and Accountability Journal*. Vol. 7, No.4, pp42-72.
Uwalomwa, U; Uwuigbe, O. and Egbide, B. (2012). Corporate Social disclosures by environmentally visible corporations: A study of Selected Firms in Nigeria, *European Journal of Business and management*. Vol. 4 No. 5 pp.99-110.

Appendix 1: Sample companies

	Sample firms	Sector
1.	CAP NIG PLC	Chemical and Paints
2.	Berger Paints Plc	Chemical and Paints
3.	Cappa D'Alberto	Construction
4.	A.G. Leventis	Conglomerates
5.	Cement Company of Northern Nig.	Building Materials
6.	Chellarams Nig Plc	Conglomerates
7.	DN Meyer	Chemical and Paints
8.	IPWA PLC	Chemical and Paints
9.	John Holt	Conglomerates
10.	Nig. German Chemicals	Chemical and Paints
11.	Nigerians Ropes Plc	Building Materials
12.	Premier Paints plc	Chemical and Paints
13.	Pz Cussons Plc	Conglomerates
14.	Unilever	Conglomerates
15.	UTC Nig. Plc.	Conglomerates
16.	WAPCO Plc	Building Materials

Appendix 2: Twenty established environmental check list instruments

Environment management

1. Compliance with environmental laws/regulations
2. Environmental policies
3. Environmental audit
4. Environmental committee in board/department for pollution

5. Environmental research and development
6. Environmental performance section in annual report.
7. Environmental spending- fines, penalties and compensation
8. Financial data on environmental savings or investments/expenses or liabilities.

Impact on Biodiversity

9. Emissions- air, water, noise, waste, green house gas, ozone depleting substances, spills.
10. Recycling waste products/waste management
11. Materials, water, and energy conservation
12. Awards for environmental vision and strategy.

Fair Labor Practices

13. Staff diversity- Employment of physically disabled, employment of women, and multi-ethnicity.
14. Staff protection- Work place safety and security, information on accidents at workplace.
15. Staff training, career development and employees' welfare.
16. Compliance with labor standards.

Products/Energy

17. Product innovation and packaging, product life cycle management.
18. Identification of environmental impacts of products/services.
19. Disclosing energy savings resulting from products/services.
20. Disclosing company's energy policies.