

WOMEN ON THE CORPORATE BOARD OF DIRECTORS AND CORPORATE SUSTAINABILITY DISCLOSURE

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Abstract

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This research examined whether an improved participation of women in the board of directors has any relationship with sustainability disclosure. Accordingly, the objective of this research was to examine the relationship between the number of women on the board of directors and social investment disclosure and energy disclosure in the sample of companies. The paper used a quantitative approach and data were collected from the archives of sustainability reports of five companies that formed the sample. The panel-data regression analysis was used in data arrangement. Five sample of companies over five years produced a (5 x 5) panel resulting in 25 observations. Data was tested at an alpha (α) of 0.05. Results from all the analysis showed a P value below the research alpha ($P < 0,05$) indicating a significant relationship. Therefore, findings from the panel-data regression analysis disclosed a positive relationship between the number of women on the board of directors and corporate disclosure on social investment and energy consumption. Further analysis also disclosed that women on the board of directors are related with the overall number of women employees in the company. The paper concludes that within the sample of companies, women on the board of directors may influence sustainability disclosure such as energy and social investment. Women on the board of directors might also assist the companies to achieve gender equity employment goals. The research recommends that given the unique social and environmental proclivity of women, the corporate should recruit more women in the boards to enhance accelerated corporate sustainability performance. Further research using expanded number of companies is recommended.

Keywords: Corporate Boards, Sustainability Disclosure, Women on the Board, Social Investment Disclosure, Energy Disclosure, Board of Directors, Gender Equity on the Board

1. INTRODUCTION

Gender representation on the board refers to an appropriate mix of male and female executives in the corporate board of directors (Grosvold et al., 2015). However, there is a global concern that men dominate the corporate boards. This asymmetry in male and female representation has attracted concern in public and private sectors (World Economic Forum, 2013). The desire by governments and organisations to reduce the disproportionality on corporate boards is part of the advocacy in the principle of equality of treatment (Fineman, 2014). The role of women in the boards has been discovered to spur sustainability performance and disclosure in some countries (Fernandez-Feijoo et al., 2014). Given South Africa's commitment to sustainable development and gender equality, this

research intends to examine the possible relationship between women on the board of directors and sustainability disclosure. Whilst there are many sustainability variables in corporate disclosure, this paper focusses on social investment disclosure and energy disclosure. This focus is primarily driven by the social energy problems of South Africa, hence the paper seeks to examine whether women in the board directors spur social investment and energy disclosure in the sample of Johannesburg Stock Exchange companies.

Previous researchers have focused on general study of the relationship between women in the board and sustainability disclosure (e.g. Jizi, 2017; Ben-Amar et al., 2015), this study will add additional interest to researchers and therefore contribute to the literature by looking at how specific sustainability disclosure variables such as social and

energy disclosure is related to women on the board. The further contribution that will be of interest to scholars is that this paper extends other research by also looking at how women in the board might relate to gender equity employment, which has hardly been researched.

Therefore, the question that informs this paper is whether women on the board of directors have any relationship with social investment disclosure and energy disclosure in the Johannesburg Stock Exchange (JSE) Socially Responsible Index (SRI) companies. Consequently, the objective of this paper is to examine the relationship between women on the board of directors, social investment disclosure and energy disclosure in JSE SRI Companies.

This paper is organised as follows: the next section after the introduction presents a review of related literature; this is followed by the method and result section. The final section is the conclusion.

2. RELATED LITERATURE

Corporate economic activity often affects the natural environment (Lun et al., 2016; Welford, 2013), these includes decreases in biodiversity, Ozone layer depletion and greenhouse due to unsustainable energy usage. The corporate is said to have the highest emission levels, which emanate mainly from energy usage (The Guardian, 2015).

All companies have an environmental impact Epstein and Buhovac (2014) and corporate governance structure mostly the board of directors' composition has been found to instil practical initiatives and compliance in corporate environmental and social responsibility (Haque, 2017; Post et al., 2015; Frias-Aceituno et al., 2013). In a research which evaluated 568 companies' sustainability reporting in 15 countries over three years, Frias-Aceituno et al. (2013) found that gender presence on the board of directors (amongst others) constitute an important factor that spurs corporate sustainability information disclosure (Haque, 2017). Eberhardt-Toth (2017) confirmed the finding that companies who appoint more women to the board of directors experience improved sustainability advantages. Accordingly, many international kinds of literature provide confirmatory findings that the presence of women in the board promotes environmental and corporate social responsibility (Fernandez-Feijoo et al., 2014). There is also confirmatory evidence that board gender composition is related to sustainability disclosure; for example, board gender is positively related to greenhouse gas disclosure (Liao et al., 2015). However as expected in research, a study from Sri Lanka provide a conflicting finding that sustainability reporting has a negative relationship with female directors (Shamil et al., 2014), another study across ten countries also disclosed a negative association between female board members and climate change disclosure (Amran, 2014).

Despite the burgeoning international literature on board gender and sustainability performance, little research exists in South Africa that focuses on board gender and energy disclosure, hence this research hopes to contribute to the existing literature by adding a South African perspective that focusses on board gender and energy disclosure. This is important considering South Africa's energy

problems; if women on the board could make a difference in corporate energy decisions, the practical significance should be that the corporate would contribute toward improving South Africa's energy management and concomitant sustainability by accommodating more women on the board.

In addition to the foregoing literature findings, recent research in the area of corporate sustainability disclosure has also found confirmatory evidence.

Using a meta-analysis of 87 independent samples, Byron and Post (2016) provided empirical findings from their study to support earlier findings from other countries that women in the corporate board have a positive significant relationship with social performance. According to Byron and Post (2016), women offer resources that may provide additional social benefit to the corporate especially in share in countries where shareholder protection is in higher enforcement. In their study on board diversity effect on social disclosure, Boang et al. (2016) also found a significant relationship between board diversity and corporate social disclosure. In a study of 341 companies out of the fortune 500 companies, Landry et al. (2016) found that companies with a good percentage of women in the board and companies led by women directors appeared more in the best ethical and best corporate citizen rankings, showing that women directors outperform men directors in social and ethical issues. The increasing proof of the importance of women on the board and as directors indicates the need for more research that can provide impetus to companies' social and environmental decisions in increasingly competitive markets where corporate social initiatives are becoming advantageous (Rao and Tilt, 2016).

In other studies, board gender diversity has been related to environmental disclosure. In a sample of 329 large companies in the UK, Liao et al. (2015) applied a univariate analysis to measure the extent of the relationship between board gender (represented by the percentage of women on the board) and environmental disclosure. The statistical analysis found a significant and positive relationship between board gender and carbon disclosure. This finding is supported by another empirical study in Canada; using data from the carbon disclosure project, Ben-Amar et al. (2015) found strong empirical evidence to support earlier claims that percentage of women on the board of directors is related to the extent of climate initiatives' disclosure amongst Canadian firms between 2008 and 2014. Other research from developed countries has variously compared femininity and sustainability disclosure and the rate of environmental disclosure (using GHG emission disclosure) before listing requirements for female representation on the board and after the requirements. Findings from the empirical study linking women in the board and as directors show the statistically significant relationship between female representation on the board and as directors and rate of increased GHG emission disclosure (Hollindale et al., 2017). This is conformity with Gallén and Peraita (2017), who found that companies in countries with femininity orientation have a higher quantity of sustainability reporting.

3. METHODS AND RESULTS

The research approach is quantitative and the source of data is secondary - from the integrated archives of a sample of companies. Accordingly, data collection was from the sustainability reports of best performers in the Socially Responsible Investing Index (SRI) of the Johannesburg Stock Exchange (JSE). Whilst the Socially Responsible Index of the JSE constituted the population, the sample selection method was a non-probability approach - specifically purposive (Denscombe, 2014), hence nine best performers in the JSE SRI were purposively chosen for their renowned sustainability disclosure performance. Although nine companies constituted the best performers, however, the number of companies used in the analysis was dependent on data availability in the companies for the five years (2010-2014). Hence, in the following tests, five companies had complete data consecutively for the five years of study; therefore, using the panel data regression for data analysis, the total observation amounted to 25 observations (which is 5 by 5 panel).

The regression model:

$$\gamma = \beta_0 + \beta_1\chi_1 + \varepsilon \quad (1)$$

Where:

γ = dependent variable which is the energy disclosure; social investment disclosure;

β_0 = γ intercept;

β_1 = regression coefficient;

χ_1 = independent variable which is number of women in the board of directors;

ε = error which accounts for other independent variables not considered in this analysis.

Furthermore, the data set satisfied the normal distribution (normality test) for regression analysis. The analysis and results are present in Table 1 and Table 2.

3.1. Panel data regression results

Null Hypothesis 1: There is no relationship between women in the board and energy disclosure.

Table 1. Regression result for women on the board and energy disclosure

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
Const	6.86667	0.716426	9.5846	<0.00001	***
Women on Board	0.833333	0.260534	3.1986	0.00473	***
Mean dependent var	9.000000	S.D. dependent var		6.123724	
Sum squared resid	32.50000	S.E. of regression		1.307871	
R-squared	0.963889	Adjusted R-squared		0.954386	
F (5, 19)	101.4308	P-value (F)		5.00e-13	
Log-likelihood	-38.75302	Akaike criterion		89.50603	
Schwarz criterion	96.81929	Hannan-Quinn		91.53442	
Rho	0.417949	Durbin-Watson		0.773504	

*Note: Model 1: Fixed-effects, using 25 observations
Included 5 cross-sectional units
Time-series length = 5
Dependent variable: Energy*

The first research hypothesis was tested at 0.05 alpha level, the panel data regression analysis show that $P < 0.01$, which is less than 0.05 alpha level. The null hypothesis 1 is therefore rejected. This indicates that holding other factors constant, women on the board is associated with energy disclosure in the JSE-SRI sampled companies. This relationship shows a linear scatter between energy disclosure and a number of women on the board of directors. The close association is depicted by a high percentage of coefficient of determination (R-squared [R^2]). It measures the percentage of change in the dependent variable, which is attributable to variation in the independent variable (Cohen et al, 2013). Accordingly, in the above result, the high R^2

of 96.38 percent indicates that more than 96 % of variations in energy disclosure can be attributed to changes in women in the board. This result goes a long way to highlight the importance of women in the board of directors on energy disclosure and as well the conservation of corporate energy usage. The practical and sustainability implication of this result thus is that women on the corporate board of directors are environmentally conscious and can contribute to sustainable development if given the chance to participate in the board of directorship positions.

Null Hypothesis 2: There is no relationship between women in the board social investment disclosure.

Table 2. Regression result for women on the board and social investment disclosure

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
Const	8.3625	0.828396	10.0948	<0.00001	***
Women on Board	0.75	0.271314	2.7643	0.01446	**
Mean dependent var	10.50000	S.D. dependent var		5.916080	
Sum squared resid	26.50000	S.E. of regression		1.329160	
R-squared	0.960150	Adjusted R-squared		0.949524	
F (4, 15)	90.35377	P-value (F)		2.61e-10	
Log-likelihood	-31.19290	Akaike criterion		72.38579	
Schwarz criterion	77.36445	Hannan-Quinn		73.35768	
Rho	0.447939	Durbin-Watson		0.745283	

*Note: Model 1: Fixed-effects, using 20 observations
Included 4 cross-sectional units
Time-series length = 5
Dependent variable: SoInvest*

The second research hypothesis was also tested at 0.05 alpha level, the regression analysis in Table 2 show that the P level is less than the alpha level, which is $P < 0.01$. Accordingly, the null hypothesis 2 is rejected. This shows that holding other factors constant, women on the board are associated with social investment disclosure in the JSE-SRI sampled companies.

In addition to the above analysis, the paper also evaluated whether the number of women on the board of directors has a relationship with the number of women employees in the sample of companies. Therefore, the third analysis is presented in Table 3.

Hypothesis 3: There is no relationship between number of women on the board of directors and number of employees in the company

Table 3. Regression result for women on the board and number of women employees in the company

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
Const	11476.2	478.925	23.9624	<0.00001	***
Women on Board	430.528	168.053	2.5619	0.01907	**
Mean dependent var	12612.80	S.D. dependent var		11658.69	
Sum squared resid	15453934	S.E. of regression		901.8675	
R-squared	0.995263	Adjusted R-squared		0.994016	
F (5, 19)	798.3496	P-value (F)		2.18e-21	
Log-likelihood	-202.1547	Akaike criterion		416.3094	
Schwarz criterion	423.6226	Hannan-Quinn		418.3378	
Rho	-0.102621	Durbin-Watson		1.482101	

*Note: Model 1: Fixed-effects, using 25 observations
Included 5 cross-sectional units
Time-series length = 5
Dependent variable: No of Women Employed in the Company*

The third hypothesis was equally tested at an alpha of 0.05. From the regression result in Table 3, the P value is 0.01, which is less than the research alpha level of 0.05, meaning that: $P < 0.05$. Accordingly, with this result, the research null hypothesis 3 is rejected. This shows that within the sample of JSE SRI companies, the number of women in the board is related to the number of women employees in the companies. The implication, therefore, is that the quest for gender equity employment in the work place can be accomplished if more women are allowed on the corporate board of directors.

4. DISCUSSION

The two main purpose of the study were: 1. to examine the relationship between the board of directors' gender and energy disclosure and 2. to examine the relationship between the board of directors' gender and social investment disclose. Therefore, the following discussion is related to the two main purpose of this study.

The first research objective was to evaluate the extent to which women in the board relate with corporate devotion to energy disclosure. It should be noted that energy conservation is an important aspect of corporate environmental initiatives, which, if successfully conserved may also reduce carbon emission. The more energy is used, the more power generation is stressed, which results in carbon emission. Therefore, aside from energy savings, which may result in cost savings and improved profitability, energy savings and the resulting disclosure, is one of the core components of corporate environmental citizenship. This is why prior research has found that corporates that conserve energy are happy to disclose their energy conservation. By implication, therefore, the results of this study, which indicate a significant relationship between women in the board and energy disclosure, might equally extend to mean that women on the board have the propensity to

improve corporate energy conservation (Liao, Luo & Tang, 2015).

The second objective of this study sought to provide an answer to whether there is a relationship between board director of gender and social disclosure. Integrated reports were obtained from companies' websites with the purpose of finding out if companies do invest and report social issues. Findings from the panel data statistical analysis revealed a positive correlation between the board of director gender and social disclosure within the five companies under study from 2010 to 2014.

This is in conformity with previous research findings, which has shown that women as the board of directors play an important role in supporting CSR strategies (Mishra and Kumar, 2014). According to the resource dependence theory, board members usually bring resources emanating from gender diversity (Ben-Amar et al., 2013). This means that female directors bring the important socially-inclined resource to the corporate, which might increase companies a competitive advantage in a contemporary social-aware market environment where customers tend to consider the social responsibility of business in making choice of patronage.

Having found a positive significant relationship in the two main objectives of the research as discussed above, the paper extended the analysis to check if the presence of women on the board has any relationship with gender equity and employment at work place. Data was collected from the annual reports from 5 companies on the JSE-SRI from 2010 to 2014.

The results indicate a significant relationship between women on board and increase in a number of female employees and an increase in women empowerment. According to the study conducted in Spain, a significant and positive correlation between women directors and an increase in the proportion of women employees. Other studies have equally found that female board members or executives are related to more women employees (Skaggs et al., 2013). This is possible as women executives are

more prone to mentoring fellow female employees (Skaggs et al., 2013) and that women director programme has introduced a programme to educate women director and ensuring that they have the required skills experience for directorship responsibilities (Azmi & Barret, 2013).

5. CONCLUSION

This paper examined the relationship between women on the board of directors and sustainability disclosure in the JSE-SRI companies. Data were collected from the archives of sustainability reports of the sample companies. The methodological approach was quantitative and the panel data regression was applied in the analysis of data. Findings from the analysis of data showed three positive and significant relationships. Firstly the results show that women on the board of directors are related to social investment disclosure. Secondly, it also revealed that women on the board of directors are related to energy disclosure and thirdly, the results showed that women on the board of directors are related with the number of women employed in the main company. These findings concur with previous literature evidence that women on board is related to sustainability performance and reporting (Liao et al., 2015).

This research adds to previous research findings outside of South Africa on women in the board and sustainability performance by highlighting the important of women in the board on social investment disclosure, energy disclosure and the number of women employees in the company. The practical and sustainability implication of this result thus is that more women in the corporate board of directors contribute immensely to corporate environmental consciousness and that women have the veritable potential to contribute to corporate sustainable development if given the chance to participate in the board of directors and in sustainability decision making. The paper thus recommends that the South African corporate should consider increasing the number of women on the board of directors, as this will contribute to improving corporate sustainability and overall sustainable development progress of the country. One of the limitations of this paper is its focus on few companies in the JSE. Further research is recommended to consider including many companies from different industrial sectors to see how the result might differ.

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