The Influence of Board Composition on Sustainable Development Disclosure

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Abstract: Knowing the potential effect of social reporting on firms' continuity, there is limited research into the influence of boards of directors' composition on CSR disclosure. This paper adds to the emerging literature empirical evidence by examining how board composition relates to firm's social and environmental disclosure as well as the implementation of social policies. Using a sample of FTSE 350 firms for the period 2007-2012, the results show that higher board independence facilitates conveying firms' good citizenship image through enhancing societal conscience. The results also show that female participation on boards is favorably affecting CSR engagement and reporting as well as the establishment of ethical policies. Hence, the research suggests that boards with higher female participation and independence boost the legitimacy of CSR reporting. Board gender diversity and independence facilitate directing part of the firm's scarce resources towards value maximizing social projects and consequently reporting on them.

Keywords: Sustainable development, Social and environmental disclosure, Environmental and ethical policies, Board Independence, Female board participation.

Introduction

The growing argument against focusing exclusively on stockholder value turned to be more debatable after losing trust in how companies are being managed and the need for social accountability to prevent firms' misbehavior (Arvidsson, 2010). This raised the issue of firms’ accountability to society (Amran et al., 2014; Matten, 2006). Stakeholders, as well as investors, seek more firm-related information, especially with the increasing societal issues (Berthelot et al., 2012). As a response, management communicates social and environmental information through annual reports to meet the expectations of its market actors (Arvidsson, 2010).

The central objective, as the main stream disclosure studies argue, is to fulfill the needs of stakeholders in terms of improving transparency, satisfying the decision needs of interested parties (Meek et al., 1995), reducing agency costs (Jensen and Meckling, 1976; Poshakwale and Courtis, 2005), as well as reducing information cost in stock markets (Cormier and Gordon, 2001; Verrecchia, 2001). Such disclosures can also be linked to a lower cost of capital, better cash flows, and higher share values. Other benefits include a reduction in information asymmetry between firms’ management and outsiders and an improvement of a firm's reputation in the market. The enhancement to the disclosure practice and the volume of information provided to capital markets reduce the uncertainty gap and facilitate trading, which in turn improves stock liquidity and price (Kim and Verrechia, 1994). Diamond and Verrechia (1991) find that informed investors are more confident in placing large orders in the market, which improves stock position. In contrast, uninformed investors ask for a higher return for the higher risk resulting from the lack of information (Easley and O‘Hara, 2004).

Previous literature highlighted the desirable consequences of firms' reporting on their CSR activities. The influence of CSR reporting has been reflected on firm performance, trust and reputation, as well as, risk profile (Aguilera et al., 2006; Ghoul et al., 2011; Salama et al., 2011; Scholtens, 2008). Moreover, CSR information is demanded by investors interested in dealing with socially-responsible firms (Holder-Webb et al., 2009), and is used as a marketing tool to raise awareness (McWilliams and Siegel, 2001). The influence of CSR activities on firms is most likely determined by effectively communicating them to the largest group of stakeholders (Godfrey et al., 2009; McWilliams and Siegel, 2001). Indeed, discussing a firm's governance, social activities, and environmental projects act as a dialogue with stakeholders to achieve stakeholders' acceptance and reflect firm's interest in responding to society's obligations (Gray et al., 1995; Simpson and Kohers, 2002).

Knowing the potential effect of social reporting on firms' continuity, there is limited research into the influence of board composition on social disclosure. Despite the growing literature on corporate governance (CG) and CSR separately, and the strong theoretical link between CG and a firm's CSR (Jain and Jamali, 2016), research into the CG-CSR nexus needs more attention to explain the empirical link as so far evidences are inconclusive and remain mixed (Chan et al., 2014; Khan et al., 2013; Jain and Jamali, 2016). In a thorough review of literature, Jain and Jamali (2016) identify 81 empirical studies out of 94 studies that examined the CSR-CG link in the last 15 years. Among these empirical studies, nine studies examine the influence of board composition on CSR disclosure. These studies examined a sample of international firms, US banks or Asian emerging economy firms, and used either the social, or the environmental dimension. Available CSR research largely ignores investigating whether boards' composition impacts social reporting. Boards of directors are responsible to set firms' social agenda, allocate firms' resources, and develop strategies for sustainable business. If the engagement in social activities is to acknowledge societal needs and to develop constructive relationships with stakeholders for sustainable business, rather than temporary fad (Hennigfeld et al., 2006; Porter and Kramer, 2006), then it is expected that firms with more effective boards will encourage the engagement in and facilitate the disclosure on CSR issues (Gray et al., 1995). Consequently, and due to the increasing public pressure, boards, who are basically designed to safeguard shareholder's interest (Fama, 1980; Hermalin and Weisbach, 1998), might tend to encourage managerial stewardship to benefit wide group of stakeholders.

Understanding the interrelationships between boards' characteristics of UK firms and CSR reporting is important as firms' accountability to society turns to be more arguable, due to the increased societal issues (Amran et al., 2014; Arvidsson, 2010; Matten, 2006). While investors' perceptions towards firm's performance and risk have been changed, as they turned to be more risk averse (Gemmill and Keswani, 2011), financial markets reward socially responsible firms (Berthelot et al., 2012; Lourenco et al., 2012). This paper contributes to the disclosure literature by examining whether boards of directors' composition influence social and environmental disclosure as well as the implementation of social policies in UK FTSE 350 firms, for the period between year 2007 and 2012 inclusive. Furthermore, the study investigates the impact of gender, by introducing the percentage of females on boards, on the level of disclosed CSR information.

The findings suggest that boards with higher independence levels affect social disclosure, suggesting that independent directors inspire and encourage the involvement in efficient and long-term rewarding social activities (Ibrahim et al., 2003; Jo and Harjoto, 2011). The results also suggest that female participation on corporate boards has a positive influence on firms' CSR reporting. This is in line with previous researches showing that firms with higher proportion of female directors provide more charitable contributions, higher environmental involvements, and social welfare activities (Johnson and Greening, 1999; Post et al., 2011; Williams, 2003). As the examined social score is a weighted average score, social projects with higher societal impact are given a higher weight. Hence, the current research suggests that boards with relatively higher independence and female participation enhance social reporting practice due to their wider engagements in sustainability projects and/or allocating their social spending toward more impactful and higher rewarding projects. In addition, our findings suggest that women on boards of directors bring new perspectives to the board and encourage the establishment, implementation, and reporting on energy efficiency, green building, and climate change policies to enhance shareholders' social welfare and to mirror firms' good citizenship.

The results support Davies report and the UK corporate governance code 2014 in encouraging boards' diversity to facilitate effective communication for better functioning. The code highlights on the importance of diversity in bringing various approaches and experiences to promote "effective engagement with key stakeholders", which in turn facilitates the implementation of the business strategy. This is documented in this research, as female participation on boards is shown to be impactful on CSR reporting and engagement to acknowledge firms' obligations towards wider groups of stakeholders.

The following section provides a literature review followed by the hypotheses development. Afterwards, the sampling, methods and results are discussed. The final section gives the conclusion.

Literature Review

The growing attention toward firms' financial performance to enhance shareholder's well-being raised the need for firm social accountability, on one hand to respond to the developing societal issues, and on the other hand, to prevent management misbehavior (Arvidsson, 2010; Berthelot et al., 2012; Matten, 2006). Hence, management discloses voluntarily social, environmental, and governance information to meet the expectations of its market participants (Arvidsson, 2010). In this respect, Haji and Ghazali (2012) argue, "the financial crisis might have forced companies to be involved in more social activities to legitimize their existence. It could be argued that the public was in greater need during the financial crisis, and hence their expectations from company contributions might have been higher” (p.101).

The World Bank defines corporate social responsibilities as, “the commitment of businesses to contribute to sustainable economic development by working with employees, their families, the local community and society at large to improve their lives in ways that are good for business and for development” (Starks 2009, p. 465). Engaging in social activities and reporting on them is likely to provide firms with both strategic and financial advantages. CSR literature suggests that reporting on firm’s social and environmental activities enhances trust and reputation and promotes firm’s image (Gray et al., 1995; Li et al., 2010), as a consequence to the positive exchange of benefits between the firm and stakeholders (Bear et al., 2010). Socially responsible firms benefit from low impact on financial performance when faced with product safety scandals, labour disagreement, and customer fraud (Waddock and Graves, 1997). Furthermore, they experience higher brand loyalty (Mackenzie, 2007). Therefore, firms’ risk tend to be lower when their CSR standard is perceived to be high, due to the reduced fluctuation in their expected cash flows (Salama et al., 2011). Kytle and Ruggie (2005) argue that CSR acts as a “countermeasure for social risk”, as it provides a tool for stakeholder engagement.

Recent CSR studies shed light on the desirable consequences of CSR. Lourenco et al. (2012) find that CSR is valuable to investors and that markets penalize profitable firms who have poor CSR activities. Such firms are more likely to face higher stakeholder pressure (Lourenco et al., 2012). Similarly, Berthelot et al. (2012) find that firms reporting on their sustainability issues are rewarded in financial markets, which explains the financial motive behind social reporting and investors’ interest in this type of disclosure. Moreover, Cormier et al. (2011) examine the impact of CSR disclosure on stock participants showing that social reporting reduces the level of information asymmetry between management and investors, which was proxied by bid-ask spread and stock price volatility. Examining a sample of 12,915 US firms, Ghoul et al. (2011) show that firms with higher CSR score have a wider investor base and a lower perceived risk. In view of the substantive value of CSR, it turns up on the agenda of both CEOs and boards of directors and is increasingly seen as a driver for growth in a number of various institutions (Arvidsson, 2010; Spitzeck, 2009, Jamali et al., 2008).

The competitive advantage CSR profile might give to firms encourages long-term potential investors to consider firm's CSR profile in their investment decisions (Aguilera et al., 2006). When firms are faced by negative events, the moral capital developed from firm's social behavior prevents the firm from stakeholders' misjudgment and protects shareholders' value (Godfrey et al., 2009). Some firms might even benefit from the positive influence of CSR to engage in risky investments for better returns (Pava and Krausz, 1996). From information asymmetry perspective, Richardson et al. (1999) survey CSR studies over a 20-year period concluding that CSR disclosure reduces information asymmetry and enhances market performance.

The increasing demand for CSR information and investors' realization of the role of CSR in preventing firms' value and appeasing the concerns of influential stakeholder groups, lead to the development of stock market indexes (e.g. Dow Jones Sustainability and FTSE4GOOD Index) grouping firms that meet socially-responsible standards (Arvidsson, 2010). This is why boards, as well as management, are required to engage and report on firm's CSR profile (Kolk and Pinkse, 2010; Scholtens, 2008). Complementing with the government role in setting regulatory frameworks, boards of directors have the responsibility to develop strategies and allocate resources to ensure business sustainability (OECD, 1999). However, investing in CSR activities might not be in-line with the interest of short-term investors; effective boards are requested to invest in long-term value maximizing activities.

The reciprocal exchange of benefits between firms' resources and the civil society conveys firms' acknowledgment to societal needs. This will strengthen firms' relationships with powerful stakeholders and maintain their existence and continuity (Branco and Rodrigues, 2006; Foote et al., 2010; Gray et al., 1995; Jo and Harjoto, 2011). Nevertheless, there is a lack of research on whether CSR is influenced by firms' monitoring environment, in particular the structure of the boards of directors (Chan et al., 2014; Khan et al., 2013; Jain and Jamali, 2016).

A vast body of literature on corporate governance demonstrates that boards of directors maintain firms' relationships with stakeholders, set firms' social agenda, provide valuable expertise, and formulate strategy. The increasing pressure of regulators and powerful groups of stakeholders on firms to operate and manage in a socially responsible way has escalated the need of business engagement with communities and adopting sustainable development programs (Martensson and Westerburg, 2014; Yadav et al., 2016). Consequently, as a strategy for firm value maximization, boards have turned to be more inclined to invest and report on sustainable development activities to engage different stakeholders (Xie and Hayase, 2007; Hansen et al., 2010; Rowe et al., 2014; Ben-Amar and McIlkenny, 2015). Scholars provide evidence on the effect of board structure on the nature and type of sustainable development activities a firm adopts (Walls et al., 2012; Galbreath, 2010,a). It is argued that well-structured boards can act as resources to create value and generate strategic sustainable advantage through their potential to develop connections with firms' stakeholders and better understand their needs (Ibrahim et al., 2003; de-Mandojana and Aragon-Correa, 2015). Given that firms' CSR disclosure acknowledges societal needs and reflects the mutual exchange of benefits with stakeholders to facilitate the development of long-term connections (Gray et al., 1995; Cormier et al., 2011; McWilliam and Siegel, 2001; Godfrey et al., 2009), boards' decision to report on CSR relates to their structure (Jamali et al., 2008; Arora and Dharwadkar, 2011). Therefore, it is expected that effective boards, which have directors' interest aligned with shareholders' interest, are more successful in engaging and reporting on firms' sustainable development activities as a business strategy to achieve the acceptance of stakeholders and develop sustainable competitive advantage. Although boards of directors are essentially structured to protect the interest of stockholders (Guest, 2009; Li et al., 2008), effective boards are expected to address the concerns of a wider group of stakeholders and their communities at large.

Hypotheses Development

Agency theory argues that managers might tend to misuse their power for personal benefits (Haniffa and Cooke, 2002; Hermalin and Weisbach, 1998). In such a case, governance mechanisms, in particular boards of directors, are supposed to oversee, control, and protect shareholders' interest (Guest, 2009; Li et al., 2008). In a review of the corporate governance practice, one can notice that the Cadbury report demonstrates the importance of the board of directors in setting the tone of the company. The report emphasises the role of the chairman of the board and its non-executive directors stating that "the chairman's role in securing good corporate governance is crucial" and "non-executive directors should bring an independent judgement" recommending high proportion of independent directors to influence board decisions.

Board Independence

Boards with higher proportion of independent directors are expected to be more efficient in overseeing management activities and encouraging them toward long-term value maximizing activities and higher levels of transparency (Ahmed et al., 2006; Cheng and Courtenay, 2006). They are, therefore, as agency theory argues, more effective in governing and monitoring management practices. The fact that independent directors are less involved in the implementation of controls and the execution of the company's operations, and CEOs have less control over them, independent directors are expected to be more objective when judging management performance. Hence, boards with relatively higher independence are supposed to exercise better monitoring (Ahmed et al., 2006; Cheng and Courtenay, 2006). Moreover, the diversity in backgrounds and being less dependent by the CEO, allow the independent directors on boards to have a wider look beyond firms' financial measures and to be more inclined toward social responsibility and disclosing on them (Ibrahim, et al., 2003; Jizi et al., 2014).

Firms with relatively higher board independence are presumed to encourage the involvement in more CSR activities and disclose on them (Arora and Dharwadkar, 2011; Jamali et al., 2008). In doing so, they facilitate higher level transparency (Chau and Gray, 2010; Donnelly and Mulcahy, 2008; Li et al., 2008), and are likely to promote long-term performance objectives (Ibrahim et al., 2003). Unlike inside directors, independent directors' compensation is not related to short-term financial performance.

Previous studies suggest that boards with higher proportion of independent directors encourage higher level of voluntary disclosure and facilitate the engagement in CSR investments (Chau and Gray, 2010; Cheng and Courtenay, 2006). Jizi et al. (2014) emphasize in their research on the role of independent directors in promoting not only the quantity, but also the quality of disclosed CSR information. Indeed, independent directors, contrary to non-independent directors, consider more the perception and efficacy of firms' social profile (Johnson and Greening, 1999). Hence, it is expected that to ensure firm sustainability and reduce the information asymmetry with various stakeholder groups, boards with higher proportion of independent directors direct management towards effective CSR initiatives and facilitate reporting on them.

H1: A higher proportion of independent directors on boards is positively related to CSR disclosure.

Board Size

It is argued that boards of directors with small number of directors benefit from low communication breakdowns and coordination resulting in better monitoring and control to management (Ahmed et al., 2006; Dey, 2008). While, on the other hand, boards with limited number of directors might suffer from high workload and responsibilities, which might hinder their monitoring role (Beiner et al., 2004). In addition, the quality of advice and control provided by small boards might be impaired due to the lack of diversified experience and backgrounds (Guest, 2009).

In terms of CSR, boards are responsible to set firms' CSR agenda and encourage CSR disclosure to communicate their response to societal needs (Jamali et al., 2008; Li et al., 2010). The size of the board reflects firm's complexity and consequently is affected, among other factors, by its industry and size (Krishnan and Visvanathan, 2009; Pathan, 2009). As FTSE-350 listed firms are in general large and complex corporations, it is expected that boards with larger size will be more efficient (in terms of workload allocation and responsibility distribution) in setting firms' CSR agenda and encouraging the communication of CSR information.

H2: CSR disclosure is positively influence by the size of the board.

CEO Duality

In line with agency theory perspective, the level of CSR involvement and reporting is likely to be influenced by managers' private interests. The appointment of CEOs as chair of the board is generally determined by their successful career records and/or controlling a significant proportion of shares (Hermalin and Weisbach, 1998). Therefore, CEO role duality could indicate managerial power. This might influence inside directors as they might accept decisions not in favor of shareholders' interest to avoid confrontation with their Chairman-

CEO (Dey, 2008). Furthermore, the power of CEO duality might lead to the appointment of directors who will act in favor of the chairman (Haniffa and Cooke, 2002). CEO duality scratches the objectivity of the board as a monitoring body (Krishnan and Visvanathan, 2009); knowing the authority of the chairman in setting the agenda, selecting members, as well as hiding critical information from other board directors (Haniffa and Cooke, 2002; Krishnan and Visvanathan, 2009; Li et al., 2008). Previous studies suggest that CEO duality is perceived to have negative effect on monitoring (Tuggle et al., 2010). However, Finkelstein and D'Aveni (1994) conclude that acting as a chairman of the board and CEO is not always inefficient (in terms of board vigilance). With respect to transparency, literature provides contradicting results. Some empirical findings suggest that the level of voluntary disclosure is lower when CEO duality exists (Chau and Gray, 2010; Donnelly and Mulcahy, 2008). In contrast, others show that CEO duality facilitates CSR reporting either to appease the pressure of powerful stakeholders and reduce supervision, or to increase tenure and remuneration (Haniffa and Cooke, 2005; Jizi et al., 2014)

If a chairman-CEO tends to use CSR disclosure merely to maintain external relationships and/or greenwash firm’s reporting, rather than engaging in and reporting on effectual social and environmental activities, he/she will not be able to reflect the quality of the firm’s social involvement through its social disclosure. As powerful CEOs cannot only protect their human capital against short-term oriented investors and manage their risk through investment and finance strategies (Barry et al., 2011; Laeven and Levine, 2009; Pathan, 2009), but also through higher level transparency and CSR involvement (Ghoul et al., 2011; Gill, 2008; Salama et al., 2011; Scholtens, 2008;), CEO duality is expected to have positive influence over social reporting.

H3**:** CEO duality is positively related to CSR disclosure

Women on Board

From agency theoretical perspective, the balanced mix of capabilities and experiences is essential for the board to exercise an effective monitoring function, assess management practices, and evaluate management strategies and their influence on CSR (Hillman and Dalziel, 2003). Boards with higher female participation are supposed to be more transparent and superior in monitoring management activities, as firms with higher proportion of female directors display better earning quality and encourage more public disclosure (Gul et al., 2011; Srinidhi et al., 2011). In this context, Adams and Ferreira (2009) notice that the behavior of female directors differs from male directors and that gender diversity is an indicator of board effectiveness. However, the collective experiences and backgrounds of the directors determine board's effectiveness, the significant role of a director overflows with the public responsibility (Forbes and Milliken, 1999). Given the importance of gender diversity on boards, UK corporate governance code 2014 encourages female participation on boards of directors to facilitate effectual functioning and maintain effective relationships with key stakeholders.

In the context of decision-making, a diverse board is more likely to provide a better platform to share a wider range of opinions, beliefs, networks, and backgrounds to balance firm's financial and non-financial objectives and address the demands of different groups of stakeholders with conflicting needs (Liao et al., 2015; Post et al., 2011). Females on boards are likely to bring an additional independent view that enhances the decision quality (Colaco et al., 2011). Having more female directors adds quality to board discussion and decision making as, in general, the presence of women on board ensures having demographic difference and reflects the socio-economic environment diversity, which facilitates better understanding of the business environment (Bowrin, 2013; Campbell and Minguez-Vera, 2008; Hillman and Dalziel, 2003). Business challenges could be more efficiently managed when boards have diversified resources (Boyd, 1990). That is, boards' gender diversity assist firms in understanding their environments and addressing multiple stakeholders' needs (Bear et al., 2010; Galbreath, 2010,b). For example, female directors are more likely to bring wider variety of perspectives to the boards to improve firms' image and to be community impactful (Campbell and Mingues-Vera, 2008; Hillman and Dalziel, 2003).

Female directors' autonomous oversight was captured by scholars who evidence a positive association between the percentage of women on board and firm's social activities and reporting (Barako and Brown, 2008; Bear et al., 2010; Fernandez-Feijoo et al., 2012; Williams, 2003; Zhang et al., 2013). Firms with higher female participation on boards provide more charitable contributions and have higher environmental involvements and social welfare activities (Johnson and Greening, 1999; Post et al., 2011; Williams, 2003). Previous research suggests that women care more about social and environmental issues, which makes them more encouraged than men in managing environmental risks and less likely to compromise quality of life for material success (Fukukawa et al., 2007; Hofstede et al., 2010; Liao et al., 2015).

Therefore, board gender diversity forms a new governance dimension, as females differ from their counterparts in terms of communication skills, personality, commitment, diligent and being less self-interest oriented (Coffey and Wang 1998; Huse and Solberg, 2006). Thus, female participation on corporate boards is likely to influence the effectualness of firm's social and environmental profile (Barako and Brown, 2008; Bear et al., 2010 and Liao et al., 2015). Hence, it is expected that boards with gender diversity have enhanced ability to respond effectively to firm's social and environmental obligations and report on them.

H4: A higher proportion of female directors on the board is positively related to CSR disclosure.

Research Design

Sample

In investigating whether CSR disclosure of U.K. firms is influenced by the structure of their boards, we used Bloomberg database to collect CSR disclosure score for FTSE 350 firms. Bloomberg provides a weighted CSR score based on the level and type of social, environmental, and governance information a firm discloses. The score is based on a defined set of weighted data points for each CSR dimension according to their importance. For example, information on greenhouse gas emission has higher weight among other environmental data points. In addition, the score is tailored for each industry to consider the value relevance of the collected data in each industry sector. Therefore, CSR score can have a value that varies between 0.1, for firms disclosing minimum level of CSR information, and 100 for firms disclosing on all Bloomberg's data points. We also utilize Bloomberg database to collect board composition related variables; financial data and firm characteristics. The examined data set covering the period from 2007-2012, after omitting observations with missing variables, comprises of 1,155 observations.

Control Variables

In line with previous research into CSR disclosure, we controlled for a set of variables that might impact on the level of CSR disclosure. As a measure of board diligence and effectiveness (Lee et al., 2004; Kent and Stewart, 2008), the number of board meetings is expected to influence on the provision and quality of voluntarily disclosed information. Asset size is used to control for firm size, as firms are exposed to community scrutiny and stakeholders' pressure relative to their sizes (Barnea and Rubin, 2010; Dhaliwal et al., 2011; Reverte, 2009). ROA and beta are used to control for firm financial performance, which is likely to impact on the level and type of firm's CSR investments (Arora and Dharwadkar, 2011; Amato and Amato, 2012; Jizi et al., 2016). Moreover, leverage is used as firms experiencing high leverage have fewer chances to allocate funds for CSR activities and consequently report on them (Barnea and Rubin, 2010; Reverte, 2009).

Methodology

The below model is set to estimate relationships and examine the hypotheses.

$$CSRDS_t = \alpha + \beta_1 BS_t + \beta_2 BI_t + \beta_3 DUAL_t + \beta_4 WB_t + \beta_5 BM_t + \beta_6 ROA_t + \beta_7 Lev_t + \beta_8 SIZE_t + \beta_9 BETA_t + \acute{\varepsilon}$$

Where:

BS	board size, is measured by the number of board members.
BI	board independence, is the proportion of independent directors to the total number of board members.
DUAL	chair/CEO duality, 0 if the CEO is not acting as the chair of the board of directors; 1, otherwise.
WB	women on board, measured by the number of female directors on the board over the total number of board members.
BM	board meetings, is the number of board meetings per year.
ROA	profitability, measured by net income over total assets.
LEV	leverage, measured by total debt over assets.
SIZE	firm size, measured by log total assets.
BETA	firm's risk, measured by systematic risk.
α	the intercept.
$\beta_1 \ldots . \beta n$	the regression coefficients.
t	period indicator.
$\acute{\varepsilon}$	the error term.

Results and Discussion

Descriptive Statistics

The CSR disclosure score varies between 68.18 and 3.31 with a mean of 30.88 and a standard deviation of 12.53. Table (1) shows that the growing pattern of CSR disclosure, by FTSE-350 firms, has been changed in years 2011 and 2012. The mean of CSR disclosure score decreased, after three years of consistent growth, from (32.1) in year 2010 to (31.36) in year 2011 and then to (30.17) in year 2012. This reflects either a decrease in social spending, particularly after the crisis period, and/or a change in the types of social investments as the score is a weighted score of firms' social, environmental and governance activities. In terms of industries, the Utilities industry followed by Materials recorded the highest CSR disclosure mean across the ten ICB classified industries and technology recorded the lowest CSR disclosure mean.

[Table 1 about here]

The percentage of board independence in the FTSE-350 firms varies between 0% and 100% with a mean of 54.56% and standard deviation of 12.5. The examined sample suggests that the board size of FTSE-350 firms ranges between three and 21 members. The mean of the board size is 9.44 and 2.62 is the standard deviation. The results show that the majority of FTSE-350 firms (only 38 observations have role duality) has a chairman who is not the CEO of the same company. Moreover, the findings reflect low level of female participation on boards, as the mean and median are respectively (8.89%) and (9.09%).

[Table 2 about here]

Data Analysis

The spearman correlation matrix is used to test for multi-collinearity among the independent variables. Table 3 shows no threat of multi-collinear variables in the examined models. Hausman test is used to guide in the use of fixed effect estimation or random effect estimation. The result suggests the use of fixed effect estimation. Dummies for industry and year are used to account for unobserved industry and year specific characteristics. FTSE 350 firms are divided in Bloomberg into 10 industries. To control for any potential heteroskedasticity, White (1980) robust standard errors are employed.

[Table 3 about here]

Analyzing the impact of board structure on CSR disclosure for the six-year period is conducted using four models. Table 4 illustrates the relationship between board structure and CSR disclosure using time series fixed effect, industry fixed effect, years and industries fixed effect and in the last model a dummy variable is introduced to account for the crisis effect.

[Table 4 about here]

The results, support board independence hypothesis expecting higher board independence to have a positive influence on CSR disclosure. This indicates that independent directors on the board are more inclined toward firm good citizenship and more successful in promoting firms' CSR agenda. From an agency theoretical perspective, independent directors encourage higher level of transparency and influence on the choice of CSR investments (Ahmed et al., 2006; Cheng and Courtenay, 2006; Jo and Harjoto, 2011). This prevents from spending on non-productive CSR activities or merely using CSR as public relationship activities (Porter and Kramer, 2006). The evidenced relationship is in line with Ibrahim et al., 2003; Jizi et al. 2014; Johnson and Greening, 1999, showing a direct association between board independence and the level of disclosed CSR disclosure.

The results support the board size hypothesis only in model 1.1 and model 1.4. This suggests that boards with larger number of directors, which have better workload allocation and wider collective experience and backgrounds, are more efficient in setting CSR agenda and encouraging CSR disclosure to respond to social needs. This finding reconciles with previous research into board size and CSR disclosure level (e.g. Jizi at al., 2014). Contrary to the set hypothesis, the relationship between CEO duality and CSR disclosure is not supported. This absence of relationship is likely due to the fact that most of the FTSE 350 firms have a chair who is not acting as a CEO, which is in line with the U.K. corporate governance code 2014 emphasizing on the independency of the chair.

The proportion of women on board is significant and positively related to CSR disclosure score in all estimated relationships. This implies that boards with higher female representation are more inclined toward adopting advanced CSR agenda and selecting long-term rewarding social activities. The results suggest that female directors are likely to be more concerned with the societal and environmental issues and raise their concerns in board meetings. This result reconciles with Zhang et al. (2013) and Bear et al. (2010) findings showing that higher proportion of women on boards is related to firms' CSR performance. The significant positive relationship supports the view of the UK corporate governance code 2014 in having better diversified boards for "effective engagement with key stakeholders" (UK corporate governance code 2014, pp. 2)

Social Policies and Board Composition

In the second set of regressions, the impact of board structure on implementing specific social and environmental policies is explored, particularly, business ethics policy, energy efficiency policy, green building policy and climate change policy. As part of the social, environmental and governance disclosure, Bloomberg captures whether the firm established standard, guidelines or a policy to comply with in conducting business. Hence, Bloomberg captures whether the firm has explicitly disclosed its business ethics policy, implemented any project to efficiently use energy (energy efficiency policy), took any initiative to use environmental technology, design or construct green buildings (green building policy) and finally if the firm documented its intention, plans or investments to minimize global emissions in its operations and/or the energy consumed or generated in products and services.

The findings document analogue results showing that the proportion of women on board is related to implementing all examined policies with the exception of the business ethics policy, which is associated with board independence. In contrast, the implementation of the other policies is not associated with board size, independence or CEO duality. The only exception is to the climate change policy, which is significant and negatively impacted by having CEO duality. This suggests that the participation of women on the board of directors brings new perspectives to the board and encourages the establishment, implementation and reporting on their social related policies to enhance shareholders' social welfare and articulate firms' good citizenship.

[Table 5 about here]

Conclusion

Knowing the favourable consequences of sustainable development reporting on firms' performance and continuity, research into CSR and corporate governance is emerging (Jain and Jamali, 2016). However, more consideration is needed to explain the empirical link, as evidences in some areas remain inconclusive (Chan et al., 2014; Khan et al., 2013; Jain and Jamali, 2016). Examining the impact of board structure on CSR disclosure sheds light on the connection between good governance and firms' acknowledgment of their societal obligations.

Poorly governed corporations can impose significant negative impacts on a wide range of stakeholders and consequently on their societies, particularly when they are large corporations. This encourages us to examine whether FTSE 350 firms' boards structure, which is designed basically to provide a sound governance structure and maximize investors well-being, is also effectual in promoting firm's societal conscience. The financial benefits of firms' engagements in CSR activities, in addition to maintaining good relationships with significant stakeholders (Ghoul et al., 2011; Gray et al., 1995; Money and Schepers, 2007) suggest that boards should have a role in the choice of CSR activities and reporting on them.

Examining a sample of FTSE 350 firms, the findings show that board structure is related to CSR disclosure score and influence the choice and type of firms' social spending.

The results suggest that board independence, the female board participation, and the frequency of board meetings are positively and significantly related to CSR disclosure. Accordingly, this research indicates that effectively designed boards (Guest, 2009; Ibrahim et al., 2003; Lee et al., 2004) are more successful in allocating firms' resources toward rewarding CSR projects and amplifying stakeholders' welfare, rather than seeking merely the interest of their shareholders. This signals the importance of board governance structure in determining firms' CSR strategy, which has favorable influence on shareholders' well-being.

The empirical findings provide evidence on the significance of board independence and female directors' representation in promoting firms' good citizenship. Therefore, the results provide statistical validity to Davies report and the UK corporate governance code 2014 recommendations, which call for board diversity for effectual functioning and strategy delivery. The documented findings encourage both firms and policy makers to have serious steps toward enhancing female board representation to grasp the opportunity of maintaining constructive dialogue with stakeholders to achieve business sustainability and facilitate strategy delivery. To achieve a substantial change in corporate social behavior, the study recommends structural improvements in boards composition to facilitate disclosing CSR information for better stakeholder engagement.

The findings also suggest that the participation of women on corporate boards is positively associated with the implementation of social and environmental related policies. This suggests that females' participation on boards of directors encourages the establishment, implementation and reporting on energy efficiency policy, green building policy, and climate change policy to enhance shareholders' social welfare and promote the good image of the firm. Female participation on corporate boards seems to enhance the efficacy of a self-regulated corporate governance system.

The present research shows that female directors are associated with energy efficiency, green building, and climate change policies. It would be interesting in a future research to focus on gender as related to reporting these areas.

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TABLE 1

Descriptive Statistics of CSR Disclosure Score by Industry and Year

Industry	Mean	Maximum	Minimum	Year	Mean	Maximum	Minimum
Utilities	39.50	63.22	17.36	**2007**	29.20	61.40	9.92
Materials	37.31	68.18	10.33	**2008**	30.88	62.28	8.26
Consumer Goods	33.57	60.74	11.16	**2009**	31.46	67.11	3.31
Energy	33.12	65.56	3.31	**2010**	32.10	65.35	6.61
Health care	33.11	63.64	9.92	**2011**	31.36	65.70	6.20
Financial	30.62	67.10	6.61	**2012**	30.17	68.18	6.20
Telecom	29.76	53.09	10.33				
Consumer Services	29.35	29.09	6.20				
Industrial	28.76	61.57	10.33				
Technology	23.21	48.76	11.16				

TABLE 2

Summary Descriptive Statistics

	CSR disclosure	Board size	Board independence	CEO duality	Women on boards	Board Meetings	Firm size	ROA	Leverage	BETA	Market-to-book value
Mean	30.88	9.44	54.56	0.23	9.25	8.80	9.37	0.07	0.52	0.87	3.33
Median	28.23	9.00	55.56	0	9.09	8	9.25	0.05	0.62	0.83	1.81
SD	12.53	2.62	12.50	0.15	8.95	3.01	0.83	0.15	1.22	0.41	13.48
Skewness	0.67	0.87	-0.01	6.29	0.80	1.74	0.90	4.79	-24.87	0.75	8.12
Kurtosis	2.73	3.88	3.94	40.60	3.42	10.55	4.17	61.32	788.94	4.16	155.94
Minimum	3.31	3	0	0	0	0	7.15	-0.96	-41.25	-0.11	-119.66
Maximum	68.18	21	100%	1	50%	33	12.41	2.27	1.61	2.70	254.51

TABLE 3

Spearman Correlations Matrix

Variables	BS	BI	DUAL	WB	BM	Size	ROA	Lev	Beta	BtoM
Board size (BS)	1.00									
Board independence (BI)	0.14	1.00								
CEO duality (DUAL)	-0.02	-0.2	1.00							
Women on board (WB)	0.28	0.35	0.01	1.00						
Board meetings (BM)	-0.08	0.01	-0.05	-0.01	1.00					
Firm size	0.57	0.35	-0.04	0.27	-0.01	1.00				
ROA	-0.12	-0.03	0.03	0.04	-0.13	-0.35	1.00			
Leverage	0.17	0.011	-0.06	0.20	0.16	0.32	-0.32	1.00		
Beta	0.17	0.15	0.00	-0.01	0.04	0.35	-0.16	-0.05	1.00	
Book-to-market value	0.09	0.02	-0.05	0.04	-0.01	0.05	0.01	-0.03	0.03	1.00

TABLE 4
The Relationship between Board Structure and CSR Disclosure

Table 4: estimates the relationship between board structure and CSR disclosure. The examined sample period covers years 2007-2012 inclusive. Bloomberg CSR disclosure score is the dependent variable which is a weighted average score that varies between 0 and 100 based on the level and type of social, environmental and governance information disclosed. White (1980) robust standard errors are employed, to control for any potential heteroskedasticity.

	Model (1.1) ***Time series Fixed effect***	**Model (1.2)** ***Industry fixed effect***	**Model (1.3)** **Industry & Year**	**Model (1.4)** ***Crisis***
Independent variables	**Coeff.** ***p*-value**	**Coeff.** ***p*-value**	**Coeff.** ***p*-value**	**Coeff.** ***p*-value**
Board size	0.268* (0.064)	0.253 (0.199)	0.252 (0.084)	0.256* (0.082)
Board independence	0.052* (0.079)	0.050* (0.086)	0.053** (0.029)	0.053** (0.029)
CEO duality	-0.067 (0.972)	0.302 (0.889)	0.303 (0.847)	0.316 (0.840)
Women on board	0.200*** (0.002)	0.193** (0.022)	0.194*** (0.000)	0.193*** (0.000)
Board meetings	0.224* (0.077)	0.217 (0.297)	0.217** (0.028)	0.218** (0.028)
Firm size	7.90*** (0.000)	8.016** (0.003)	8.016*** (0.000)	8.015*** (0.000)
ROA	6.231* (0.056)	5.525 (0.255)	5.525** (0.020)	5.492** (0.021)
Leverage	-0.371 (0.553)	-0.398 (0.684)	-0.398 (0.463)	-0.401 (0.458)
Beta	-0.001 (0.998)	-0.030 (0.987)	-0.030 (0.975)	-0.001 (0.999)
Book-to-market	-0.011 (0.394)	-0.015 (0.230)	-0.015 (0.273)	-0.016 (0.268)
Crisis (dummy)	N.A.	N.A.	N.A.	0.215 (0.747)
Intercept	-55.80*** (0.000)	-54.64** (0.011)	-52.55*** (0.000)	-52.09*** (0.000)
Industry Dummies	Yes		Yes	Yes
Year Dummies		Yes	Yes	Yes
Prob. > F	0.000	0.000	0.000	0.000
Adj. R^2	0.433	0.360	0.426	0.425
Number of observations	1155	1155	1155	1155

*p < 0.1, **p < 0.05, ***p < 0.01; *p*-values in brackets.

TABLE 5

The Relationship between Board Structure and Social policies

Table 5: estimates the relationship between board structure and disclosing the implementation of social and ethical policies. The examined sample period covers years 2007-2012 inclusive. The dependent variable is a dummy variable which gives a value of one if the firm explicitly disclosed the related policy and zero otherwise. White (1980) robust standard errors are employed, to control for any potential heteroskedasticity.

	Model (2.1) ***Business ethics policy***	**Model (2.2)** **Energy efficiency policy**	**Model (2.3)** **Green building policy**	**Model (2.4)** ***Climate change policy***
Independent variables	**Coeff.** ***p*-value**	**Coeff.** ***p*-value**	**Coeff.** ***p*-value**	**Coeff.** ***p*-value**
Board size	0.007 (0.292)	0.005 (0.456)	0.011* (0.069)	0.008 (0.198)
Board independence	0.003** (0.033)	-0.001 (0.361)	0.001 (0.819)	0.001 (0.882)
CEO duality	0.070 (0.508)	-0.168 (0.137)	0.049 (0.462)	-0.153* (0.076)
Women on board	-0.001 (0.568)	0.006*** (0.001)	0.005*** (0.000)	0.005*** (0.001)
Board meetings	-0.010** (0.043)	0.001 (0.854)	0.002 (0.555)	0.006 (0.237)
Firm size	0.130*** (0.000)	0.100*** (0.000)	0.020 (0.379)	0.245*** (0.000)
ROA	0.150 (0.230)	0.257** (0.030)	0.020 (0.849)	0.194* (0.073)
Leverage	0.042 (0.237)	0.007 (0.779)	-0.010 (0.564)	-0.034 (0.261)
Beta	-0.036 (0.419)	-0.014 (0.760)	0.047 (0.168)	-0.080* (0.061)
Book-to-market	-0.002 (0.121)	0.001 (0.910)	0.001 (0.478)	-0.000 (0.680)
Intercept	-0.766*** (0.004)	-0.488* (0.063)	-0.501*** (0.004)	-2.061*** (0.000)
Industry Dummies	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes
Prob. > F	0.000	0.000	0.000	0.000
Adj. R^2	0.104	0.092	0.124	0.255
Number of observations	1027	1027	1028	1028

*p < 0.1, **p < 0.05, ***p < 0.01; *p*-values in brackets.