Antecedents of corporate social responsibility disclosure: evidence from the UK Extractive and Retail Sector

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Abstract

Purpose – This study examines the level of corporate social responsibility (CSR) disclosure among UK extractive and retail Sectors and consequently ascertain whether corporate board characteristics and firm characteristics can explain observable differences in the extent of CSR disclosure.

Design/methodology/approach – Based on the KPMG survey 2017, our sample comprises all the firms in the extractive industries, such as Mining, and Oil and Gas and also retail industries, such as Food and Drug Retailers and General Retailers for the sample period of 2005 to 2018.

Findings – Our findings show that the level of CSR disclosure from extractive sector is much higher that the counterparts of retail sector. In addition, the multiple regression results show that CSR disclosure is positively and significantly associated with board gender diversity, board independence, board size. Nevertheless, the results show that board meeting and CEO duality do not have significant impact on CSR disclosure.

Originality/value – This study contributes to the existing literature on CSR in that it advances our understanding of the interaction between governance mechanisms and specific firm characteristics of two distinct sectors of the UK economy and how this in turn influence the CSR in the two sectors.

Keywords: Corporate social responsibility disclosure, corporate governance, board characteristics, gender diversity, UK retail and extractive Sector.

Paper type Research Paper

1.Introduction

In recent years, there has been proliferation of studies on corporate social responsibility (CSR), due partly to recent corporate scandals which resulted in a growing interest in the subject from various stakeholders, and the need for transparency in reporting (Rashid, 2021; Yekini et al., 2021). A recent survey (KPMG, 2017) indicates that there has been a general increase in global awareness and importance of CSR reporting (CSRR) with almost 95% of the global largest companies reporting on CSR information of some sort in their annual reports. In the UK, many initiatives and regulations have been introduced to promote the importance and development of CSR (Visser and Tolhurst, 2010). Some of these are the Equal Pay Act 1970, the Health and Safety at Work Act 1974, the Sex Discrimination Act 1975, and the Race Relations Act 1976. In addition, in the year 2000, the world's first Minister for CSR, Kim Howells, was appointed in the UK. This resulted in variety of measures been put in place by the UK government to ensure transparent and comprehensive annual reporting by corporations to address a wider range of stakeholders, with government institutions been at the forefront of reporting (Yekini et al., 2015). Several other initiatives were also introduced to encourage transparent reporting, one of which is the FTSE4GOOD index of the London stock exchange and the Business in the Community (BitC) (KPMG, 2017). Currently, UK is a prominent promoter of CSRR and one of the top ten countries with the highest CSRR rate in the world (Sughra and Crowther, 2015; Khan and Kakabadse, 2014).

The survey by KPMG (2017, p20), show the Extractive sector as the leader in CSRR, while Retail companies have the lowest CSRR rate. Nevertheless, both sectors play important roles in CSR activities in the UK while both also suffer increased attention and criticism from the public. In 2015 Retail was ranked as the second most unethical sector in the UK (IBE, 2016), and involved in 62 media coverage. The key issues identified were mistreatment of stakeholders, particularly late payments to suppliers and breach of human rights (Moyo, 2016; Wilshaw, 2016 and Guardian, 2017). In contrast, the Extractive sector reported substantially less ethical issues (IBE, 2016), yet, the industry is classed as one of the most socially and environmentally harmful (Jenkins and Yakovleva, 2006). Furthermore, while the retail sector has been greatly criticised for abuse of power and misleading customers (Blythman, 2004), the majority of CSR scandals, such as environmental disasters and human rights incidents (Telegraph, 2010; Guardian, 2013), have arisen from Mining or Petroleum industries.

In this paper, we explore the two sectors – Extractive sector with the highest CSRR rate and the Retail sector with the lowest CSRR rate according to KPMG global survey 2017. Our main focus is to examine how corporate board characteristics and firm characteristics in the two sectors, have affected CSR disclosure. We are keen on investigating the applicability of the KPMG findings in the UK context since both sectors have received greater media coverage and criticism than other sectors in the UK. Furthermore, it will be interesting to explore why Retail is at the bottom of the KPMG table while been ranked the 2nd most unethical sector in the UK. Our research agender is therefore to identify how corporate governance mechanism differs between the two industries, and to what extent they influence CSRR. Therefore, using secondary data and quantitative analysis, we collected data over a period of 2005 to 2018 from the sectors of Food & Drug Retailers, General Retailers, Oil & Gas Producers and Mining. The study contributes to the existing literature on CSRR in that it advances our understanding of the interaction between governance mechanisms and specific firm characteristics of two distinct sectors of the UK economy and how this in turn influence the CSRR in the two sectors.

The rest of the paper is structured as follows. In the next section, we provide theoretical and empirical review of CSR literature, particularly those focusing on CSR disclosure in the global context and in the UK context. This will provide useful insight into the phenomena. Section three presents our research design, data collection process and methodology, while we present our findings and discussions in section four. Section five concludes the paper.

2. Literature Review and hypotheses development

The concept of corporate social responsibility disclosure suggests that firms must extend beyond reporting maximisation of firm value but consider environmental, societal, and governance implication of their existence also (Freeman, 1984). In this section, we draw on several theories to understand how corporate governance mechanisms through boards control, monitor and oversight impact CSR disclosure. We hypothesised how specific board-level governance mechanisms – gender diversity, board independence, frequency of board meeting, board size and CEO duality – are likely to impact CSR disclosure.

2.1 Theoretical background

A number of studies on CSR disclosure have adopted stakeholder theory as their theoretical framework (e.g., Jamali, 2008; Brower and Mahajan 2013; Chan et al., 2014). Stakeholder

theory suggests that CSR performance and disclosure balance a multiplicity of stakeholders' interest by managers pursing economic, social and governance responsibilities, meeting environmental commitments and disclosing the information (Freeman, 1984). In the context of the theory, CSR activities and disclosure can mitigate conflicts of interest between firms and their various stakeholders thus improving firms' reputation (Hoeffler et al., 2010). Clarkson (1995) argues that a firm's going-concern objective may be disrupted if the primary stakeholders are not satisfied.

Agency theory relies on the assumption that firms adopt governance mechanisms to demonstrate to stakeholders that self-serving managers are monitored and influenced, thus acting on the interest of stakeholders and improving CSR disclosure. Central to corporate governance mechanisms are board-gender diversity, board independence, board size, meetings and CEO duality. A diverse and independent board of directors are better able to advice and force managers to disclose CSR information, which may reduce information asymmetries and improve value-enhancing CSR (Shankman, 1999; Mitchell et al., 2016). Consistent with this view, empirical studies demonstrate that firms with good governance mechanisms voluntarily disclose CSR information (Chan et al., 2014).

Resource dependence theory posits that the survival firms depends on the ability to manage its resources, including the skills and features of the directors, and its capacity to obtain necessary resources from the environment (Pfeffer, 1972; Hillman, Cannella, & Paetzold, 2000). Thus, diverse board may enrich the decision-making processes by providing a wider range of perspectives, which could consequently result in a higher degree of social and environmental responsibility.

From the legitimacy theory perspective, disclosure and performance of CSR are reflections of the moral legitimacy of a firm (Davis, 1973; Lister et al., 2020), that make stakeholders perceive firm as a moral entity. In other words, firms can only continue to succeed if the society in which they operate perceive them to be socially-value enhancing (Gray et al., 1996). In this manner, the legitimacy theory portrays that board of directors may enrich the perception of their firm by ensuring disclosing important information such as CSR to stakeholders (Davis, 1973; Lister et al., 2020).

2.2. The role of CSR

2.2.1. The role of CSR in the Retail sector

Retailers play an important role in the UK economy, acting as direct intermediaries between producers and manufacturers, and consumers. Firms in the retailing industry have an influential position to promote sustainability through their own actions, their partnerships with suppliers and interplay with customers. For example, retailers have the ability to interfere and propose changes in the production stages and influence customer's consumption patterns (Jones et al., 2013). As a result, they are under continuous pressure from a wide range of stakeholders to enhance their social and environmental obligations, and promote stable and sustainable world (Sughra and Crowther, 2015: McWilliams and Siegel, 2000: Idowu and Towler, 2004).

In recent years, retail companies have become more aware of the impacts of their activities on environment and society (Jones et al., 2013) and the benefits of integrating CSR in their business activities (Gössling, 2011: Garriga and Melé, 2004: Idowu and Towler, 2004). For example, Souza-Monteiro and Hooker (2017) report that large retailers are now determined to openly display their concerns with regards to the welfare of the environment, their workforce and the communities they operate in. As a result, they are adapting their CSR strategies to address these concerns by adjusting product prices and product lines, improving their sourcing and supply processes, enhancing their community engagement, and introducing various training schemes to meet the expectation of the community (Yekini et al., 2017). By so doing, firm believe they will enhance the transparency of their activities, improve their risk management and "boost" their brand management (Jones et al., 2013).

Various empirical studies support this statement. For instance, firms that disclose CSR information gains competitive advantage, improves staff loyalty, enhances customer loyalty and trust as well as attracts high-income customers (Ganesan et al. 2009: Hancock 2005: Idowu and Towler, 2004). Another strand of study report that CSR disclose attract investors' attention and improves the relationship of the firm with a wide range of stakeholders and overall improve profitability (Sughra and Crowther 2015: McWilliams and Siegel 2000: Idowu and Towler, 2004: Girod and Bryane 2003).

2.2.2. The role of CSR in the Extractive sector

2.2.2.1. CSR in Mining Industry

In the past, the effects of the operations of the mining firms on the environment had been downplayed, leading to excavation and significant destructions of lands, and exiting affected areas once depleted. On the argument of the "cost-benefit" of the operations however, the progress has been made in highlighting that the cost of the depletion actually outweighs the overall financial gain (Jenkins, 2004).

In view of the highlight, the Mining industry has begun to take seriously the environmental and social influence their operations have on various stakeholders. The improvement is particularly due to the extensive and growing criticism across the globe, which led to a development and propagation of CSR policies, strategies and its reporting (Jenkins, 2004).

A number of studies (Jenkins and Yakovleva, 2006; Waddok and Boyle, 1995) suggest that the key trigger for companies to engage with CSR reporting is legitimacy and increased interest from pressure groups. While Jenkins (2004) state that CSR is about "balancing the diverse demands of communities and the imperative to protect the environment with the ever present need to make profit". Despite that, she argues that CSR reports are based on highly used rhetoric to gain support, maintain operating licences, and enhance competitive positions. Further challenges faced by Mining companies are defining their relationship with communities and accommodating continuously changing expectations (Waddok and Boyle, 1995).

2.2.2.2. CSR in Oil and Gas Industry

Oil and Gas industry plays a significant role and considerably contribute to the UK economy through job creation and financial rewards for communities from direct investments (Sinclair, 2000; Strachan et al., 2003). Anecdote evidences reveal that activities of the industry are more likely to have a negative impact on the environment and society at large. For example, the oil rig accident off the coast of Aberdeen resulted in 167 death in 1988 (Macalister, 2013). The oil spillage of 2010 resulted in the spew of 4.1 million barrels of BP oil into the Gulf of Mexico (Telegraph, 2010). In view of these occurrences, companies operating in the industry are required to comply with various environmental regulations at the national, European and international level (Oil & Gas UK, 2008).

Prior to the 1998 Piper Alpha disaster, sustainability in the oil and gas sector was originally limited to environmental issues (Yusuf et al., 2013). This has since been extended, requiring firms within the industry to acknowledge and enhance its approach towards social sustainability (Oil & Gas UK, 2008). The new policy requires firms to prioritise and take seriously the impact of its operations on the environment and actively cooperate with the government and other stakeholders (Salter and Ford, 2000; Strachan et al., 2003). There are three major ways in which CSR can be improved in the Oil and Gas sector. First, legislations and reputation (Strachan et al., 2003). Second, internal drivers, such as cost reduction and improved performance (Lee et al., 2011). Lastly, competitiveness may force firms to disclose quality information (Yusuf et al., 2013).

2.3. Corporate board characteristics and CSR disclosure

2.3.1. Gender diversity

Corporate governance plays an important role in corporate social responsibility (Michelon and Parbonett, 2012). According to stakeholder theory firms can mitigate divergence of interests and preferences through disclosure of CSR activities (Liao et al., 2015). Moreover, agency theory posits that corporate decisions including CSR can be effective monitored by board gender diversity. The resource dependence theory indicates that board gender diversity, through their different personal ties, knowledge, values and opinions, provides some of critical resources needed by their firms (Cabeza-García et al., 2018; Liao et al., 2015). Gender-diversed boards are effective in monitoring and influencing management and their decision-making process, which may increase the quality of decisions; leading to positive effect on firm performance (Benkraiem et al., 2017; Frias-Aceituno et al., 2013; Higgs, 2003). Gender diversity improves social performance, as a wider variety of CSR engagements that focuses on diversity and community stakeholders (i.e., institutional strength) and consumers, shareholders and employees (i.e., technical strength) are considered (Bear et al., 2010).

Empirical findings reveal that female directors behave differently from men that may significantly influence board governance (Liao et al 2015: Adam and Ferreira, 2009). In a study that examines whether board gender diversity help market participants assess the relevance of CSR information, Nekhili et al. (2017) show that female board directors increase both the credibility of CSR information disclosed and firm value. In another study, Liu (2018) examines the relationship between board gender diversify and environmental lawsuits. Using a sample of 1500 S&P firms during the period of 2000 and 2015, the author finds that firms with greater

female board representation improves their environmental policies and significantly fewer environmental violations.

Several reasons have been proffered for this. Unlike men, female directors tend to sit on monitoring-related committees and have better meeting attendance records (Adam and Ferreira, 2009). Women have moral reasoning and have strong orientation toward ethical issues (Arun et al. 2015; Daily and Dalton 2003; Wang and Coffey, 1992). Female directors bring human and relational capital on the board and facilitate a firm's carbon reduction initiatives (Haque, 2017), charitable initiatives (Williams, 2003) and corporate giving (Marquis and Lee, 2013: Wang and Coffey, 1992). Furthermore, female directors have concerns with the welfare of stakeholders and incentives to pre-empt environmental risks that can harm communities (Adams et al. 2011; Gulligan 1977). In addition, female directors promote corporate investment in effectual social engagements, are likely report more information about the investment and reduce potential complexity about disclosures (Garcia-Sanchez et al., 2019; Arayssi et al., 2016; Fernandez-Feijoo et al., 2014; Ibrahim and Angelidis, 1994). In line with the foregoing argument and related evidences, we hypothesised that:

H1: There is a positive relationship between board gender diversity and CSR disclosure

2.3.2. Board independence

The resource dependence theory posits that the commitments of managers to CSR activities largely depend on an existing corporate governance mechanism such as independent board of directors, who have incentives to better advise, monitor to improve access to information and increase influence socially responsible policies (Amin at el. 2020; Hillman et al., 1999). Independent boards are more likely to improve corporate decision-making and increase access to valued resources through sharing of a broader and different range of experience and opinions, oversight, and representation of diverse interest groups (Gordon, 2007; Chin-Jung and Ming-Je, 2007; Wang and Dewhirst, 1992). Independent directors add value to a firm’s board in the form of human and relational capital, including unique skills, competencies, professional expertise and external links, which attract critical resources, resolve environmental uncertainties, and manage external dependencies, leading to an improved corporate social performance (Mallin and Michelon, 2011).

Several empirical evidences have revealed that board independence impacts board monitoring (Yermack, 1996). The proportions of independent directors on the boards positively affect CEO

compensation (Benkraiem et al., 2017). Liao (2015) found that presence of independent directors helps a firm balance its financial and non-financial goals, even with limited resources and mitigating potential conflicts of expectations among stakeholders who may differing interests. The presence of independent directors may lead to strong orientation towards corporate social responsiveness (Husted and Sousa-Filho, 2019; Fernandez-Gao et al., 2018). Yekini et al. (2015) found that the presence of independent directors led to greater and quality disclosure of community involvement activities. Independent directors tend to have high orientation towards long-term goals thus pursuing sustainable development interests and organizational legitimacy (Haniffa & Cooke, 2005; Johnson and Greening, 1999), and disclosure of more CSR activities (Kilic et al., 2015). Similar results were found that firms that have more independent directors than inside directors have strong orientation towards CSR initiatives through charitable and philanthropic themes, (Webb, 2004; Ibrahim, et al., 2003; Ibrahim and Angelidis, 1994).

The preceding arguments suggest that the proportion of independent directors appointed to boards may enhance the board's monitoring role subsequently improve the disclosure of CSR. This suggestion leads to the following hypothesis:
H2: There is a positive relationship between board independence and CSR disclosure

2.3.3. Board size

The relevant literature on board size discusses its impact on the effectiveness of the Board (Gonzalez and Andre, 2014; de Andres, et al., 2005). Based on the stakeholder theory, larger boards are more likely to represent the interests of multiple stakeholders and show greater orientation towards disclosure of relevant CSR information. From the perspective of the resource-based theory, larger board may enhance board effectiveness by relying on the diverse expertise, skills and resources of its members (Coles, et al., 2008), and counterbalance CEO's dominance. Another strand of literature suggests that there might be a negative effect of larger board size. For example, larger boards are more likely to act indecisively or quickly in the presence of moral hazard problems due to poor communication (Goodstein et al., 1994; Jensen, 1993; Lipton and Lorsch, 1992), and controlling of the CEO (Jensen, 1993). Firms with large board size are likely to intensely monitor management activities leading to poor acquisition decision and performance as well as diminished corporate innovation (Faleye et al., 2011; Linck et al., 2008).

Empirical evidence for the effects of board size and CSR activities are mixed. Firms with larger boards have strong orientation towards cash giving and with the establishment of corporate foundations (Brown et al., 2006), as each director have different network connections and differing interests (Marquis and Lee, 2013). Firms with larger board are more likely to network with important suppliers on environmental issues (Dalton et al., 1999). In a more recent study Giannarakis (2014) found that board size significantly and positively affects extent of CSR disclosure among US firms. Also, Husted and Sousa-Filho (2019) found that board size positively affects CSR disclosure and performance in Latin America firms due to family dominance and prevailing legislations that support shareholders wealth creation. Based on the preceding arguments, we formulate the hypothesis:

H3: There is a positive relationship between board size and CSR disclosure

2.3.4. Board meetings

Existing study suggests that frequency number with which directors attend meetings measures the board diligence, its effectiveness and the level of monitoring activity it delivers (Lee et al., 2004; Vafeas, 1999). A large number of meetings may lead to inefficiency of the board (Vafeas, 1999), as board members may be too familiar with each other thus, colluding. Then Godos-Diez et al. (2018) argue that firms are more socially and environmentally responsible when board of directors meet regularly to discuss CSR-related issues. Also, a greater need for frequent board meetings and more frequent meetings may lead to voluntary disclosure, including CSR issues (Giannarakis, 2014; Frias-Aceituno et al., 2013; Kent and Stewart, 2008). Following these arguments, we hypothesised that:

H4: There is a positive relationship between board meetings and CSR disclosure

2.3.5. CEO duality

CEO duality represents a conflict of interest, as it concentrates too much power in one individual, thus impeding the effective functionality of the board (Coles, et al., 2001). Empirical evidences on the effects of CEO duality are mixed. Jizi et al. (2014) found a positive association between CEO duality and CSR disclosure. They argued that powerful CEOs are more likely to provide a high degree of CSR information when under pressure to demonstrate that power is not abused. Cheng and Courtenay (2006) report that there is no significant relationship exists between CEO duality and CSR disclosure. Another strand of literature reports that CEO duality has negative relation with CSR disclosure. For example, Iyengar and Zampelli (2009) found that CEO duality is suboptimal, as it inhibits firm performance. Husted

and Sousa-Filho (2019) found that CEO duality has a negative impact of CSR disclosure among Latin American firms and argue that separation of roles of the board chair and CEO protect the interests of minority shareholders through greater CSR disclosure. Giannarakis (2014) found that US firms that have CEOs with duality characteristics publish less information on their CSR disclosure. Gul and Leung (2004) reported that CEO duality is associated with lower levels of voluntary corporate disclosures among Hong Kong firms. Following the above arguments, we hypothesised that:

H5: There is a negative relationship between CEO duality and CSR disclosure

2.4 Control variables

Financial leverage (e.g. gearing) has been identified in the prior studies as an important trigger for CSR disclosure (Khan, 2010). Wallace et al. (1994) argue that highly geared companies are more likely to disclose information, to provide greater assurance to their creditors. This argument is supported by Ho and Taylor (2007) who argue that highly geared companies appear to provide a greater amount of disclosure in order to mitigate agency costs. In contrast, research by Alsaeed (2006), Garas and ElMassah (2018), Giannarakis (2014) and Reverte (2009) find that no correlation between leverage and CSR disclosure. While Rahman et al. (2011) and Roberts (1992) observe that they are positively related.

According to Ali et al. (2017) and Villiers and Alexander (2014), firm size is one of the determining factors affects the probability of CSR disclosure. For instance, Gamerschlag et al. (2010), Giannarakis (2014), Khan (2010) and Thijssens et al. (2015) state that the larger the company is, the more it is visible to various stakeholders. Hence, it is more prone to be scrutinised and under pressure to disclose more information. Various measures have been used to measure firm size in prior studies. For example, total assets (Brammer and Pavelin, 2008; Gamerschlag et al., 2010; Khan, 2010; Rahman et al., 2011; Reverte, 2009), the number of employees (Gamerschlag et al., 2010; Tagesson et al., 2009), market value (Reverte, 2009; Thijssens et al., 2015) and turnover (Adams et al., 1998; Tagesson et al., 2009). The most of studies found that firm size has a positive impact on CSR disclosure (Adams et al., 1998; Brammer and Pavelin, 2008; Gamerschlag et al., 2010; Khan, 2010; Rahman et al., 2011; Reverte, 2009; Tagesson et al., 2009), however, However, Roberts (1992) find that no significant relationship between firm size and CSR disclosure. Finally, Karyawati et al. (2017) found that a U-shape relationship between firm size and CSR.

Firms with better performance have incentives to disclose their CSR engagements (Li et al., 2018). For example, firms with high performance are more likely to disclose their CSR engagements to investors in the capital markets because it is socially responsible for them to do so and to favourably distinguish themselves from other firms (Gelb and Strawser 2001; Lang and Lundholm, 1993). According to the legitimacy theory, firms with high performance have incentives to disclose their CSR activities to avoid regulations from communities and other stakeholders (Ng and Koh, 1994; Cho and Patten, 2007; Sial et al., 2018).

The industry has been recognised as one of the leading indicators for CSR disclosure (Ali et al., 2017; Villiers and Alexander, 2014). A number of studies have been conducted which indicate significant differences in CSR disclosure across various industries (Chen and Bouvain, 2009; Gamerschlag et al., 2010; Wallace et al., 1994). Moreover, Brammer and Pavelin (2008), Ho and Taylor (2007) and Reverte (2009) further report significant differences between industry sector and CSR disclosure. As it's showed in KPMG's latest survey, although CSR disclosure has significantly increased among all of the industry sectors, the difference across the sectors is persistent. The leading companies are those who have the highest environmental impact, such as Oil and Gas, and Mining; while Retail remains the lagging sector (KMPG International, 2017, p20). Hence, we anticipate that CSR disclosure varies across retail and extractive industries.

3. Research design

3.1 Data and sample

Our data are drawn from a number of sources, such as Bloomberg, FAME and company annual reports. We collected CSR disclosure data and corporate governance data from Bloomberg. Bloomberg provides accurate, verified and most recent data on different markets and securities across the world and is used as a primary source by researchers and investors (Bloomberg, 2018a). Besides, financial data was mainly collected from FAME and company annual reports. FAME contains financial information for the UK and Irish company, such as balance sheets and income statements. Based on the KPMG survey (2017), our sample comprises all the firms in the extractive industries, such as mining, and oil and gas, have been identified as the "strongest" sector in CSR disclosure and retail industries, such as Food & Drug Retailers, General Retailers, have been identified as the "weakest" sector (KPMG International, 2017). We require firms to have the data available for CSR disclosure data, board gender diversity, board independence, board size, board meeting, CEO duality, return on assets, financial

leverage, Tobin's Q and total assets. Our final sample contains 438 firm year observations over the sample period of 2005 to 2018.

3.2 Variables measurement and empirical model

Following the similar approach adopted by Giannarakis (2014), the CSR disclosure is measured by four different ways including overall Environmental, Social, Governance Disclosure Score (ESGD), which is a disclosure score and range from 0.1 to 100, depending on the amount of environmental, social and governance information revealed by the companies. The ESG overall score is a combination of all three scores (Environmental, Social and Governance), which are updated annually and are constructed based on approximately 120 quantitative and qualitative measures. Environmental disclosure score (EDSD) contains data on aspects such as energy use, water consumption and waste generation. Social disclosure score (SDSD) focuses on elements, such as employee turnover, number of accidents at work and the proportion of woman across the workforce. Lastly, Governance disclosure score (GDSD) focuses on the aspects of board structure and characteristics (Bloomberg, 2018b; Giannarakis, 2014).

The independent variables are divided into two categories. The first category consists of corporate board characteristics variables, which has been identified in the past literature as the key determinants and enhance the scope and likelihood of CSR disclosure (Frias-Aceituno et al., 2013; Gamerschlag et al., 2010; Giannarakis, 2014; Khan, 2010). The corporate board characteristics variables considered in this study are board diversity, board independence, board size, the number of board meetings and CEO duality. The second category consists of firm characteristics variables, such as profitability, financial leverage and firm size have been identified in prior studies (Waddock and Graves, 1997) as the main determinants which influence the CSR disclosure. To control for the industry effect and year effect, dummy variables for industries and years were also included (El-Faitouri, 2014). To test our hypotheses, we develop the following regression model:

$$\text{CSR Disclosure}_{it} = \beta_0 + \beta_1 DIV_{it} + \beta_2 IND_{it} + \beta_3 BS_{it} + \beta_4 BM_{it} + \beta_5 DUA_{it} + \beta_6 ROA_{it} + \beta_7 LEV_{it} + \beta_8 Q_{it} + \beta_9 SIZE_{it} + \varepsilon_{it} \quad (1)$$

Where CSR disclosure is measured by overall ESG disclosure score (ESGD), Environmental disclosure score (EDSD), Social disclosure score (SDSD) and Governance disclosure score (GDSD). DIV is defined as the number of female directors divided by the number of board members, IND is calculated as the proportion of independent non-executive directors, BS is

the total number of executive and non-executive directors sitting on the board, BM refers to the number of board meetings, DUA refers to CEO duality, it takes value of 1 if the CEO also holds the position of the chairman of the board, 0 otherwise. ROA is defined as Profit before tax as percentage of total asset, LEV is measured as ratio of total debt to total assets, Q refers to Tobin's Q which is calculated as the book value of long-term debt and market value of the equity divided by the book value of the total asset, and SIZE is measured by the logarithm of total assets. Industry effect and year effect was controlled through dummy variables. Table 1 defines the all the dependent, independent variables and control variables.

Insert Table 1 about here.

4. Empirical results

4.1 Descriptive statistics

Table 2 presents the descriptive statistics for all the variables in the regression model. Specifically, Panel A of Table 2 shows descriptive statistics for the overall ESG disclosure (ESGD) and Environmental (EDSD), Social (SDSD) and Governance (GDSD) disclosure of the full sample and also retail industry and extractive industry, respectively. In terms of the full sample, the average score of overall ESG disclosure is 36.428 (out of 100), ranges from 4.785 to 70.125. Similarly, the level of Environmental, Social and Governance disclosure vary substantially. For instance, EDSG ranges from 2.326 to 68.595 with a mean value of 28.127, the mean value of SDSD is 38.608 and ranges from 5.263 to 76.563, indicating that there is substantial variation in the ESG disclosure. In term of the two industries, it is evident that the mean value of ESG disclosure score for the Extractive industry (39.443) is higher than the Retail industry (39.443). This is aligned with the KPMG's survey, which indicates that Extractive industry (Mining, Oil and Gas) is the leading sector, while Retail remains the lagging sector. Moreover, the findings are consistent with the study of Chen and Bouvain (2009) and Gamerschlag et al. (2010) who state that energy supplying firms and companies with environmentally harmful operations are required to disclose more CSR information in contrast to other industries.

Panel B of Table 2 shows descriptive statistics for the corporate board characteristics variables. The mean value of board diversity (DIV) is 0.131, meaning on average 13.10% directors are female, suggesting the majority of the boards are dominated by male directors. The mean value of IND is 0.583, meaning on average, independent NEDs comprised approximately 58.3% of

the board. Board size (BS) ranges from 4 to 17 with a mean value of 9.021, which means, on average, there are 9 members sitting on the board. From the industry perspective, it seems that retail industry (0.170) is more diverse than the counterparts of extractive industry (0.100). However, the mean value of board independence (0.574 and 0.591) and board size (8 and 9) are similar in both retail and extractive industries. This indicates that companies comply with the UK Corporate Governance Code, which stresses the importance and necessity of board independence and recommends that the majority of board should be represented by non-executive directors (Solomon, 2013).

Insert Table 2 about here

4.2 Correlation matrix

Table 3 presents the results of Pearson correlation matrix for all the variables. It suggests that multicollinearity is not likely to be an issue in our regression models as the level of correlation between variables is relatively low. Furthermore, we use the variance inflation factor (VIF) to double-check the potential issue of multicollinearity. Yusr et al. (2012) suggest that the value of VIF is less than 10, the issue of multicollinearity is not problematic. Table 4 shows the values of VIF are well below 10 indicating that there are no potential multicollinearity issues in our models. Overall, Table 3 suggests that there is significant relationship between ESG disclosure (ESGD, EDSD, SDSD and GDSD), corporate board characteristics (DIV, BI, BS, BM and DUA) and firm characteristics (ROA and TA).

Insert Table 3 and Table 4 about here.

4.3 Regression results and discussion

Table 5 reports the multiple regression from estimating equation (1). Column 1 is estimated using overall ESG disclosure as dependent variable. First, the coefficient of board diversity (DIV) is positive and significant at the 1% level, thus H1 is supported. The results are consistent with prior studies (Carter et al., 2003; Daily and Dalton, 2003; Frias-Aceituno et al., 2013; Wang and Coffey, 1992), which report a positive relationship between board diversity and ESG disclosure and indicate that diversified boards may put more pressure on directors to engage in the implementation of CSR strategies in order to enhance legitimacy of the firm and attract resources from stakeholders. Second, consistent with our prediction, board independence (BI) is positively and significantly associated with ESG disclosure at the 1% level and thus H2 is

supported. The findings are consistent with previous studies (Yekini et al., 2015; Garas and ElMassah, 2018), which conclude that boards with greater proportion of non-executive directors tend to disclose more information on CSR and thus enhances transparency and corporate legitimacy. Third, the coefficient on board size (BS) is positive and significant at the 1% level, thus H3 is supported. The findings are aligned with prior studies of Frias-Aceituno et al. (2013), which state that larger boards provide better monitoring, including CSR implementations and disclosures (Giannarakis, 2014), offer more diverse and critical resources to the firms (Abeysekera, 2010), and more innovative and experienced (Esa and Mohd Ghazali (2012). Fourth, the board meeting is found to have negative but insignificant association with ESG disclosure and thus H4 is not supported. The results are inconsistent with the statement of Frias-Aceituno et al. (2013) who stress the need for more frequent meetings and of Giannarakis (2014) who suggests that greater number of meetings will enhance the likelihood of CSR issues and more frequent meetings may lead to voluntary disclosure, including CSR. Fifth, the results of CEO duality (DUA) are mixed and insignificant, thus H5 is not supported. The findings are consistent with the study of Cheng and Courtenay (2006) and Khan (2010) who find that CEO duality is not associated with CSR disclosure. However, it differs from the findings of Garas and ElMassah (2018), Giannarakis (2014) and Gul and Leung (2004), which show that separation of roles of CEO and Chairman results in greater transparency and CSR disclosure.

In terms of firm characteristics, financial leverage is positively but insignificantly associated with ESG disclosure. The findings are consistent with past studies of Garas and ElMassah (2018), Giannarakis (2014), Khan (2010), Reverte (2009), who found no significant relationship between financial leverage and CRS disclosure. Total assets is found to be significant and positively associated with ESG disclosure. The results are consistent with the findings of Brammer and Pavelin (2008), Gamerschlag et al. (2010), Giannarakis (2014) and Khan (2010) which show that larger companies are more visible, hence are more scrutinised and under pressure to disclose more CSR information. Industry is significantly and positively associated with ESG disclosure which indicates that CSR disclosure varies across retail and extractive industries.

In addition to overall CSR disclosure, we also examine the impact of corporate board characteristics and firm characteristics on the three components of ESG (i.e., Environment, Social and Governance disclosure) and the results are reported in column 2, 3 and 4 of Table

5. Overall, the findings of Environment, Social and Governance disclosure are consistent with overall CSR disclosure, suggesting that corporate board characteristics and firm characteristics have significant impact on CSR disclosure.

Insert Table 5 about here

Table 6 presents the antecedents of CSR disclosure across retail and extractive industries. Specifically, Column (1) to (4) refer to retail industry while Column (5) to (8) refer to extractive industry. Board diversity (DIV) is found to be positively and significantly associated with ESG and Environment, Social and Governance disclosures across retail and extractive industries and the findings are similar to the results reported in Column (1) to (4) of Table 5. However, board independence is positively and significantly associated with ESG and Environment, Social and Governance disclosures in retail but not extractive industry. Board size (BS) is positively and significantly associated with ESG and Environment, Social and Governance disclosures across retail and extractive industries. The results on board meeting and CEO duality are mixed. Overall, the findings reported in Table 6 suggest that the impact of corporate board characteristics and firm characteristics on ESG disclosure differs across retail and extractive industries.

Insert Table 6 about here.

4.4 Additional analyses

In order to further examine the robustness of our findings, we conduct a number of additional analyses. First, and following previous studies (Larcker and Rusticus, 2010; Ntim et al., 2013), we estimate a lagged structure model in order to address the potential endogeneity issues which might arise whereby the board characteristics and CSR disclosure are determined simultaneously, in this case current year's CSR disclosure depends on previous year's board characteristics. The results reported in Column (1) to (4) of Table 7 are similar to the baseline results reported in Table 5, which suggests that our results are robust to estimating lagged effects model. Second, we further examine the presence of unobservable firm level heterogeneity by estimating a fixed effects model due to the fact that unobservable factors may correlate with board characteristics and CSR disclosure and make our results from pooled OLS biased (Ntim et al., 2013; Wang et al., 2019). The results provided in Column (5) to (8) of

Table 7 remain generally same to the results reported in Table 5. Thus, we conclude that our results are robust to the presence of potential firm level heterogeneity.

Insert Table 7 about here

Third, to further account for the potential endogeneity issues which might arise from omitted variable bias, we adopt the widely used instrumental approach: two stage least squares (2SLS). Following the existing literature (Fang et al., 2009; Wang et al., 2019), we use the lagged value of board characteristics (board diversity, board independence, board size, board meeting and CEO duality) as instruments that are correlated with board characteristics but are not correlated with the error term. Thus, we re-estimated Model 1 of Table 5 using the Two-Stage Least Squares (2SLS) model. The findings shown in Table 8 are consistent with the results reported in Table 5, this indicating that our findings are fairly robust to the presence of potential endogeneity issue which might arise from omitted variables.

Insert Table 8 about here

5. Conclusion

This paper sets out to compare the CSR disclosure agender of UK Extractive sector with that of the Retail sector following the findings of KPMG 2017 international survey that placed the extractive industry as a leader in CSR disclosure while placing the retail industry at the bottom. Our aim was to examine how corporate board characteristics and firm characteristics affects CSR disclosure of these two distinct sectors. The study was conducted on Extractive and retail sectors of the FTSE all share for a period from 2005 to 2018.

The study provides interesting findings and offers an additional empirical contribution to the existing literature. Firstly, from the comparative perspective, the results indicate that industry profile is the leading factor affecting CSR disclosure, leading to significant differences in CSR disclosure rates and CG mechanism across both industries. The findings are consistent with our expectations and suggest that due to the greater scrutiny of the Retail sector in the UK, it remains the lagging sector in CSR disclosure, which aligned with the KPMG survey (2017). Besides, the results are consistent with prior research (Carter et al., 2003) and support the legitimacy framework, which emphasizes that companies with environmentally harmful operations are more prone to enhance their CSR disclosure, in contrast to other industries, due

to the growing stakeholders' interest, external pressure (Jenkins and Yakovleva, 2006) and if their legitimacy is under threat (Deegan et al., 2002).

Secondly, this study examined how corporate board characteristics and firm characteristics affect CSR disclosure and the results report that, overall, the corporate board characteristics and firm characteristics have a significant and positive impact on CSR disclosure. This further supports the existing evidence, which suggests that engagement in CSR practices is greater in well-governed organisations, compared to poorly governed firms (Ntim and Soobaroyen, 2013; Yekini et al., 2015). Particularly, companies with larger, more diverse, independent, and more active boards. Therefore, it could be argued that a greater compliance with the UK Corporate Governance Code (UK CGC), which promotes the principles of good governance (Solomon, 2013), is cannot be overemphasised as it enhances the implementation of CSR practices among UK companies (Sughra and Crowther, 2015).

The timing of this study is crucial in that it will play a pivotal role in shaping the future of ESG practices and disclosures among UK firms. First, the results could stimulate UK authorities to introduce additional changes into the existing regulations, to strengthen CSR engagement across UK companies. Secondly, our findings serve as a clarion call to the authorities to institute regulations that would harmonise the practice and reporting of CSR across different sectors of the economy with the aim of promoting uniformity in CSR disclosures across industries in the UK. This will not only ensure transparency but will also promote accountability among firms irrespective of the industry they belong. Our finding is also a clarion call to corporate boards and policy makers. Our findings clearly show that board characteristics have significant effect on ESG disclosure. Boards of corporation within the extractive and retail industries in particular and corporate boards and policy makers generally should recognise this fact and therefore create an ESG friendly corporate culture across their corporations through the 'Tone at the top' and regular training of employees.

The author acknowledges that this research is subject to a number of limitations, which are open to further research. Firstly, although this study is based on the KPMG survey, the results are applicable [only] in the UK context. Therefore, other outcomes are possible if a different country is selected. Particularly, considering that the UK is one of the leading countries in CSRD (KMPG International, 2017). Secondly, the study focused on the examination of only two industries from the list available. Therefore, to [fully] understand what drives the

differences between sectors, it could be suggested for future research to incorporate other, or all sectors listed in the survey.

Due to the time and cost constraint of this study, an additional limitation is the choice of CSR measurements and other measures could be used in future studies. As suggested by Gössling (2011), a discrepancy in CSR measurement will have an effect on the outcome of a research study. Therefore, a choice of a content analysis of CSR reports could be used, to gain more in-depth understanding from an individual company perspective. Moreover, to enhance the reliability of the results, other independent variables could be used in future studies, such as the level of media scrutiny, R&D, and the existence and size of the CSR committee. Lastly, a different design and method could be used in the future research, for instance, a case study of a particular company to gain a better understanding "why" companies are engaging in CSR.

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Table 1: Variables Definition and Measurement

Dependent variables	
ESGD	CSR Disclosure score ranges from 0-100
EDSD	Environment Disclosure score ranges from 0-100
SDSD	Social Disclosure score ranges from 0-100
GDSD	Governance Disclosure score ranges from 0-100
Corporate board characteristics variables	
DIV	Number of female directors divided by the number of board members.
IND	Number of independent non-executive directors divided by the number of board members.
BS	Number of executive and non-executive directors.
BM	Number of board meetings.
DUA	CEO duality is a dummy variable, it takes value of 1 if the CEO also holds the position of the chairman of the board, 0 otherwise.
Firm characteristics variables	
LEV	Ratio of total debt to total assets.
TA	The natural log of total assets.
Tobin's Q	The book value of long-term debt and market value of the equity divided by the book value of the total asset.
ROA	Profit before tax as percentage of total asset.
INDUS	Dummy variables for the two industries: Retail and Extractive.
YEAR	Dummy variables for the years between 2005 to 2018.

Table 2: Descriptive statistics Panel A: Environmental, Social and Governance disclosure

Variable	Mean	Median	SD	Min	Max
Full Sample					
ESGD	36.428	33.195	14.689	4.785	70.125
EDSD	28.127	22.917	17.254	2.326	68.595
SDSD	38.608	38.596	16.099	5.263	76.563
GDSD	57.143	53.571	9.331	8.929	82.143
UK Retail Industry					
ESGD	32.634	30.622	11.573	4.785	60.287
EDSD	24.237	19.379	13.530	6.250	54.167
SDSD	32.807	28.070	13.046	8.772	73.684
GDSD	53.722	53.571	7.623	8.929	71.429
UK Extractive Industry					
ESGD	39.443	38.429	16.157	7.851	70.125
EDSD	31.045	29.457	19.103	2.326	68.595
SDSD	43.339	47.368	16.815	5.263	76.563
GDSD	59.863	57.142	9.677	33.929	82.143

Panel B: Corporate board characteristics variables

Variable	Mean	Median	SD	Min	Max
Full Sample					
DIV	0.131	0.125	0.111	0.000	0.500
IND	0.583	0.571	0.131	0.000	0.867
BS	9.021	9.000	2.458	4.000	17.000
BM	8.200	8.000	2.898	1.000	25.000
DUA	0.039	0.000	0.194	0.000	1.000
UK Retail Industry					
DIV	0.170	0.166	0.115	0.000	0.500
IND	0.574	0.555	0.122	0.286	0.800
BS	8.098	8.000	1.919	4.000	14.000

BM	9.021	9.000	2.145	1.000	16.000
DUA	0.036	0.000	0.188	0.000	1.000
UK Extractive Industry					
DIV	0.100	0.100	0.097	0.000	0.455
IND	0.591	0.583	0.137	0.000	0.867
BS	9.747	9.000	2.593	5.000	17.000
BM	7.552	7.000	3.235	2.000	25.000
DUA	0.041	0.000	0.198	0.000	1.000

Panel C: Firm characteristics variables

Variable	Mean	Median	SD	Min	Max
Full Sample					
ROA	7.479	6.434	12.244	-68.185	79.487
LEV	18.276	14.216	17.952	0.000	133.094
Q	4.075	1.941	13.440	-26.276	260.708
TA	7.806	7.442	2.040	3.605	12.927
UK Retail Industry					
ROA	11.140	9.142	9.941	-12.634	79.487
LEV	19.949	14.678	21.495	0.000	133.094
Q	6.139	2.719	19.867	-26.276	260.708
TA	6.851	6.614	1.335	4.359	9.244
UK Extractive Industry					
ROA	4.598	4.625	13.106	-68.185	72.034
LEV	16.958	13.959	14.480	0.000	64.836
TOBIN'S Q	2.436	1.447	2.334	0.083	13.333
TA	8.558	7.911	2.182	3.605	12.927

Variables are described as follows: ESG disclosure score (ESGD), Environmental disclosure score (EDSD), Social disclosure score (SDSD), Governance disclosure score (GDSD), board gender diversity (DIV), the proportion of independent non-executive directors (IND), board size (BS), board meeting (BM), CEO duality (DUA), return on assets (ROA), leverage (LEV), Tobin's Q (Q), and total assets (TA).

Table 3: Pearson Correlation Matrix

	ESGD	EDSD	SDSD	GDSD	DIV	BI	BS	BM	DUA	ROA	LEV	Q	TA
ESGD	1												
EDSD	.975**	1											
SDSD	.899**	.787**	1										
GDSD	.812**	.722**	.685**	1									
DIV	.373**	.315**	.338**	.241**	1								
IND	.395**	.369**	.393**	.321**	.376**	1							
BS	.473**	.463**	.434**	.499**	.214**	.248**	1						
BM	0.032	0.014	-0.033	0.009	.132**	-0.015	-0.041	1					
DUA	-0.06	-0.028	-.097*	-0.081	-0.085	-0.052	-.118*	0.015	1				
ROA	-.129**	-0.063	-.208**	-.137**	0.031	-.122*	-0.052	0.049	0.033	1			
LEV	0.093	0.089	0.032	0.042	0.037	-0.035	-0.012	.140**	-0.035	-0.061	1		
Q	-0.017	-0.008	-0.029	-0.052	0.058	-0.014	-0.079	0.054	-0.003	.153**	0.043	1	
TA	.672**	.652**	.568**	.623**	.273**	.517**	.697**	0.01	-0.076	-.160**	-0.019	-.143**	1

***, ** and * represent significant at 0.01, 0.05 and 0.10 respectively. Variables are described as follows: ESG disclosure score (ESGD), Environmental disclosure score (EDSD), Social disclosure score (SDSD), Governance disclosure score (GDSD), board gender diversity (DIV), the proportion of independent non-executive directors (IND), board size (BS), board meeting (BM), CEO duality (DUA), return on assets (ROA), leverage (LEV), Tobin's Q (Q), and total assets (TA).

Table 4: VIF

Variable	Tolerance	VIF
DIV	0.814	1.228
IND	0.622	1.607
BS	0.516	1.938
BM	0.961	1.04
DUA	0.982	1.018
ROA	0.956	1.046
LEV	0.985	1.020
Q	0.971	1.035
TA	0.397	2.517

Variables are described as follows: board gender diversity (DIV), the proportion of independent non-executive directors (IND), board size (BS), board meeting (BM), CEO duality (DUA), return on assets (ROA), leverage (LEV), Tobin's Q (Q) and total assets (TA).

Table 5: Antecedents of Corporate Social Responsibility (CSR) disclosure

	(1) ESGD	(2) EDSD	(3) SDSD	(4) GDSD
Corporate Board Characteristics				
DIV	41.92***	37.02***	48.62***	17.43***
	(7.05)	(4.84)	(7.24)	(4.77)
IND	8.098***	6.942***	9.87**	0.198**
	(3.58)	(3.98)	(3.25)	(3.06)
BS	1.179***	1.544***	1.209***	0.812***
	(4.22)	(4.35)	(3.81)	(4.72)
BM	-0.0458	-0.286	-0.0054	-0.0062
	(-0.22)	(-1.11)	(-0.02)	(-0.05)
DUA	1.818	4.242	-1.725	-0.546
	(0.63)	(1.17)	(-0.53)	(-0.31)
Firm Characteristics				
ROA	-0.0267	0.0261	-0.107	-0.0103
	(-0.54)	(0.40)	(-1.93)	(-0.34)
LEV	0.0102	0.0133	0.0044	0.0019
	(1.81)	(1.88)	(0.69)	(0.56)
Q	-0.173	-0.225	-0.0550	-0.0367
	(-1.40)	(-1.46)	(-0.39)	(-0.49)
TA	0.0001***	0.0001***	0.0001***	0.0001***
	(5.51)	(6.19)	(4.32)	(6.14)
Constant	12.19**	3.216	14.83**	44.65***
	(2.70)	(0.56)	(2.94)	(16.10)
R-squared	0.433	0.400	0.406	0.417
Year effects	YES	YES	YES	YES
Industry effects	YES	YES	YES	YES
F-Value	31.30***	25.10***	27.61***	29.29***

t statistics in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Variables are described as follows: ESG disclosure score (ESGD), Environmental disclosure score (EDSD), Social disclosure score (SDSD), Governance disclosure score (GDSD), board gender diversity (DIV), the proportion of independent non-executive directors (IND), board size (BS), board meeting (BM), CEO duality (DUA), return on assets (ROA), leverage (LEV), Tobin's Q (Q) and total assets (TA).

Table 6: Antecedents of CSR disclosure across retail and extractive industries

	(1) ESGD (Retail)	(2) EDSD (Retail)	(3) SDSD (Retail)	(4) GDSD (Retail)	(5) ESGD (Extractive)	(6) EDSD (Extractive)	(7) SDSD (Extractive)	(8) GDSD (Extractive)
Corporate Board Characteristics								
DIV	20.20***	8.591*	28.55***	16.18***	35.85***	30.10*	48.37***	4.629**
	(4.06)	(2.41)	(4.94)	(3.97)	(3.63)	(2.47)	(4.14)	(2.76)
IND	8.985**	3.115**	22.57***	0.870**	5.247	4.651	6.795	6.362
	(2.97)	(2.53)	(4.26)	(2.23)	(0.60)	(0.42)	(0.65)	(1.19)
BS	0.807*	0.078	1.118**	0.012	1.224**	1.415**	1.103*	0.717**
	(2.34)	(0.18)	(2.78)	(0.04)	(3.15)	(2.90)	(2.37)	(3.00)
BM	0.846**	0.860**	0.404	0.165	-0.327	-0.688	-0.151	-0.073
	(3.34)	(2.67)	(1.37)	(0.79)	(-1.29)	(-1.23)	(-0.51)	(-0.47)
DUA	6.892**	10.46***	3.415	1.006	-6.514	-5.530	-10.03*	-3.543
	(2.73)	(3.57)	(1.16)	(0.49)	(-1.57)	(-1.04)	(-2.05)	(-1.39)
Firm Characteristics								
ROA	0.164**	0.469***	0.090	0.070	-0.031	-0.012	-0.129	-0.025
	(3.00)	(5.92)	(1.42)	(1.57)	(-0.50)	(-0.16)	(-1.70)	(-0.65)
LEV	-0.015***	-0.015**	-0.007	-0.006	0.0407**	0.052***	0.024	0.023**
	(-3.41)	(-2.99)	(-1.40)	(-1.72)	(3.27)	(3.46)	(1.65)	(3.09)
Q	0.375***	0.400***	0.199	0.138	-0.705	-0.863	-0.269	-0.013
	(3.90)	(3.47)	(1.78)	(1.75)	(-1.83)	(-1.73)	(-0.58)	(-0.06)
TA	0.003***	0.003***	0.003***	0.001***	0.005***	0.007***	0.002***	0.004***
	(12.79)	(12.33)	(11.11)	(6.28)	(5.09)	(5.66)	(4.86)	(6.30)
Constant	13.23**	-1.249	12.13*	46.62***	26.94***	17.36*	22.72**	53.93***
	(2.66)	(-0.20)	(2.10)	(11.43)	(4.05)	(2.12)	(2.90)	(13.19)
R-squared	0.707	0.718	0.692	0.446	0.459	0.456	0.316	0.396
Year effects	YES	YES	YES	YES	YES	YES	YES	YES
F-Value	47.38***	43.97***	43.96***	15.78***	21.19***	19.65***	11.28***	16.34***

Table 7: Additional analyses: Lagged effects (LE) and Fixed effects (FE) models

	(1) ESGD (LE)	(2) EDSD (LE)	(3) SDSD (LE)	(4) GDSD (LE)	(5) ESGD (FE)	(6) EDSD (FE)	(7) SDSD (FE)	(8) GDSD (FE)
Corporate Board Characteristics								
DIV	21.184***	14.722***	41.071***	5.618*	24.637***	20.548***	39.440***	6.898***
	(6.24)	(3.45)	(8.26)	(1.95)	(7.74)	(4.95)	(8.66)	(2.68)
IND	14.239***	11.848***	23.217***	2.085***	16.043***	10.883**	25.063***	4.622*
	(4.52)	(2.89)	(5.02)	(3.78)	(4.99)	(2.48)	(5.42)	(1.77)
BS	0.032**	0.057	0.588*	0.482**	0.367*	0.367	0.068*	0.570***
	(2.34)	(1.32)	(1.73)	(2.46)	(1.68)	(1.04)	(1.72)	(3.28)
BM	0.032	-0.035	0.002	0.163	0.010	0.086	0.115	0.030
	(0.27)	(-0.23)	(0.01)	(1.61)	(0.09)	(0.56)	(0.67)	(0.31)
DUA	3.433**	4.449**	-0.868	-0.212	1.796	3.161	-2.879	0.089
	(2.40)	(2.51)	(-0.41)	(-0.17)	(1.18)	(1.62)	(-1.30)	(0.07)
Firm Characteristics								
ROA	-0.044	-0.062*	-0.123***	0.014	-0.015	-0.014	-0.099***	0.024
	(-1.59)	(-1.75)	(-3.01)	(0.60)	(-0.60)	(-0.39)	(-2.65)	(1.12)
LEV	0.009***	0.015***	-0.002	0.002	0.012***	0.019***	0.003	0.003
	(2.59)	(3.48)	(-0.39)	(0.61)	(3.61)	(4.37)	(0.61)	(1.13)
TA	0.000	0.000**	-0.000	0.000	0.000***	0.000***	0.000	0.000***
	(1.28)	(2.31)	(-0.93)	(1.59)	(2.85)	(4.04)	(0.93)	(3.70)
Q	-0.183**	-0.304***	0.073	-0.044	-0.254***	-0.388***	-0.037	-0.075
	(-2.37)	(-3.15)	(0.64)	(-0.67)	(-3.38)	(-4.03)	(-0.34)	(-1.23)
Constant	25.412***	17.672***	28.543***	49.173***	19.380***	12.927***	17.163***	47.621***
	(8.09)	(4.46)	(6.16)	(18.43)	(5.67)	(2.96)	(3.73)	(18.77)
R-squared	0.342	0.333	0.332	0.355	0.383	0.359	0.261	0.357
Year effects	YES	YES	YES	YES	YES	YES	YES	YES
Industry effects	YES	YES	YES	YES	YES	YES	YES	YES
F-Value	16.15***	10.31***	19.28***	10.27***	12.35***	11.52***	10.84***	11.48***

Table 8: Additional analyses: 2SLS

	(1) ESGD	(2) EDSD	(3) SDSD	(4) GDSD
Corporate Board Characteristics				
DIV	23.129***	16.474***	42.984***	6.006*
	(6.28)	(3.57)	(7.96)	(1.95)
IND	18.771***	15.605***	30.511***	2.620
	(4.51)	(2.90)	(4.98)	(0.75)
BS	0.216*	0.216	0.189**	0.690***
	(1.85)	(1.69)	(2.52)	(3.32)
BM	0.014	-0.090	-0.142	0.249
	(0.07)	(-0.35)	(-0.47)	(1.45)
DUA	5.650**	7.263**	-1.039	-0.307
	(2.42)	(2.52)	(-0.30)	(-0.16)
Firm Characteristics				
ROA	-0.053*	-0.068*	-0.138***	0.007
	(-1.91)	(-1.92)	(-3.36)	(0.29)
LEV	0.009**	0.015***	-0.002	0.002
	(2.41)	(3.30)	(-0.38)	(0.71)
TA	0.000***	0.000***	0.000	0.000***
	(2.98)	(3.96)	(1.03)	(3.61)
Q	-0.168**	-0.283***	0.070	-0.050
	(-2.19)	(-2.96)	(0.62)	(-0.77)
Constant	19.487***	12.477**	18.152***	45.645***
	(4.62)	(2.37)	(3.07)	(13.75)
R-squared	0.363	0.339	0.258	0.357
Year effects	YES	YES	YES	YES
Industry effects	YES	YES	YES	YES
F-Value	9.21***	8.92***	7.85***	9.07***

t statistics in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Variables are described as follows: ESG disclosure score (ESGD), Environmental disclosure score (EDSD), Social disclosure score (SDSD), Governance disclosure score (GDSD), board gender diversity (DIV), the proportion of independent non-executive directors (IND), board size (BS), board meeting (BM), CEO duality (DUA), return on assets (ROA), leverage (LEV), Tobin's Q (Q) and total assets (TA).