# **Do corporate governance mechanisms and ESG disclosure drive CSR narrative tones?**

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**Highlights**

* We examine the underlying drivers of CSR narrative tone.
* Two dictionaries have been used to estimate the tone of CSR narrative tone.
* More independent directors lead to having a less optimistic CSR narrative tone.
* Gender diversity has a positive impact on optimistic CSR narrative tone.
* More ESG disclosure leads to a more optimistic CSR narrative tone.

**Abstract**

This study explores the underlying drivers of the tone of corporate social responsibility (CSR) narratives by considering four corporate governance mechanisms and examining whether there is a relationship between environmental, social, and governance (ESG) disclosure and the CSR narrative tone based on a sample of UK firms from 2008 to 2017. The results show that more independent directors would lead to a less optimistic language (positive tone) and a more pessimistic language (negative tone) in the CSR report. The results also show that a higher ESG disclosure score leads to a more positive CSR narrative tone. However, gender diversity has a positive impact on the positivity of CSR tone when the ESG score is medium or high and when the board size exceeds 10 members. These findings are relevant for policymakers, investors, and firm managers. For instance, the findings inform regulators and policymakers about the relevant governance mechanisms that affect the tone of CSR reports.

**Keywords:** CSR narrative tone; textual analysis; ESG disclosure; board size, independent directors, gender diversity; audit committee.

# **Introduction**

Recently, there is a growing demand for improved business reporting and the obvious focus is on encouraging companies to provide more non-financial information (Arena et al., 2015; Lai et al., 2018; Albitar et al., 2020; Mughal et al., 2020; Gerged et al., 2021). Corporate environmental and social responsibility has become an international trend as sustainability has become increasingly significant to economic development and this accompanied by the company's lack of non-financial disclosure especially that related to environmental and social responsibility information (Li et al., 2020; Albitar et al., 2020; Liao et al., 2020; Chen et al., 2021; Gerged et al., 2021). Narrative communication plays an increasingly important role in the accountability process of corporate social responsibility (CSR) and integrated reporting (IR) and the key element of narrative style is the tone (Barkemeyer et al. 2014; Fisher et al., 2019). In addition, textual analysis has increasingly become a new trend in accounting and finance research (Loughran and Mcdonald, 2015; Fisher et al., 2019; El-Haj et al, 2019; Lewis and Young, 2019; El-Haj et al, 2020).

The tone is a way in which a writer can use narrative statements in a specific way (through word selection) to convey non-verbal observations about a specific subject. And thus, the tone can be used to spread progressively useful information, or it can be strategically deployed to influence readers' perception (Arena et al., 2015; Huang et al., 2014; Fisher et al., 2019). The tone can also be described as a "tool" for "creating a unique social impression through word selection (Hart et al. 2013). In other words, it can be a tool for impression management. Cho et al. (2010) conclude that worse environmental performers use language and verbal tone to bias the message presented in their financial report environmental disclosures and worse environmental performance is associated with the use of more optimistic language. On the other hand, tones can be used to facilitate the communication of incrementally useful information. Despite extensive research on narrative tones in political science, communications, and other disciplines, it has recently attracted the attention of accounting and finance scholars (Fisher et al., 2019; El-Haj et al, 2019; Lewis and Young, 2019; El-Haj et al, 2020). In addition, each part of the annual report's narrative has a specific purpose of communication and displays similar content and style (Swales, 1990). Each narrative has its unique purpose of communication and it faces systematically varying degrees of restrictions and opportunities in its production process. For example, CSR reports are a means of signaling a firm’s commitment to social and environmental practices.

In addition, environmental, social and governance (ESG) disclosures help to provide greater opportunities to understand the company’s business as a major part of non-financial information. Non-financial information is also essential to assist management in achieving the entity’s strategic environmental goals (Li et al., 2019; Albitar et al, 2020). In addition, ESG disclosure has become an important topic in academic research and practice as stakeholders began to raise questions about managers’ credentials in integrating environmental, social, and governance (ESG) considerations (Husted and Sousa-Filho, 2018; Albitar et al, 2020). According to stakeholder and agency theories, a company must adopt a more sustainable and long-term perspective as stakeholders are focused on companies' ESG factors to know where the firm invests and how the company conducts business (Eccles et al., 2014; Atan et al., 2018). In addition, governance mechanisms may play a crucial role in controlling CSR tone (Patelli and Pedrini, 2015) and have a significant impact on ESG disclosures (Allegrini and Greco, 2011; Javaid Lone et al., 2016; Husted and Sousa-Filho, 2018; Akben-Selcuk, 2019; Albitar et al., 2020; Gerged et al., 2021).

Tucker (2015) point out that managers have a greater impact on disclosure tone than over numeric reporting. Patelli and Pedrini (2015) recommend that the board of directors and the CEO determine the tone of the disclosure and aggressive financial reporting is correlated with resolute, complex, and not engaging language. They believe that the tone of the CEO's speech is a basic way for directors to establish leadership. Also, Bozzolan et al (2015) report that the management of Fiat Group uses disclosure tone strategically to implement different disclosure ways to communicate with different stakeholders with different levels of salience and optimism. Thus, existing literature implies that management and directors help set the disclosure tone.

Corporate governance mechanisms could affect CSR tone and ESG disclosures because strong corporate governance can affect decision-making on the company policies related to ESG disclosure practice (Dam and Scholtens, 2013; Akben-Selcuk, 2019; Albitar et al., 2020) and research on how corporate governance mechanisms affect CSR tone is very rare (Fisher et al., 2019). Previous research has focused on the relationship between corporate governance mechanisms and risk disclosure (Elshandidy and Nero, 2015; Allini et al., 2016; Haj Salem et al. 2019) Or governance mechanisms and forward-looking disclosure (Wang and Hussainey, 2013; Al Lawati and Hussainey, 2020; Al Lawati et al, 2021) or on the consequences of disclosure and its tone (Schleicher and Walker 2010; Price et al. 2012; Huang et al. 2014; Aly et al, 2018; Fisher et al, 2019). Research on the impact of corporate governance mechanisms on the tone of disclosure is very limited, especially studies related to CSR disclosure tone (Marquez Illescas et al, 2018; Martikainen et al, 2019). Therefore, from a business ethics perspective, as companies disclosure information to better inform stakeholders, it is important to examine the tone of this information and what drives this type of information(Arena et al., 2015; Marquez Illescas et al., 2018; Martikainen et al, 2019). Also, managers may tend to increase the level of ESG disclosure to fulfill stakeholders' needs. This will reduce information asymmetry and lead to more recognition of management efforts. Further, managers may provide ESG information in a different tone and that would affect stakeholders’ decisions. For example, some managers will be inclined to provide optimistic information when disclosing ESG information for their interest and enhance investors’ confidence, however, others might be more oriented to disclose ESG information in a negative tone to eliminate any potential litigation cost in the future (Dong and Zhang 2018; Houston et al., 2019).

Therefore, this paper attempts to explore the underlying drivers of CSR tone by taking into consideration four corporate governance mechanisms namely board size, independent directors, gender diversity, and audit committee size. It also examines whether there is any relationship between positive and/or negative CSR tone with ESG disclosure. To the best of our knowledge, this is the first study that explores the effect of corporate governance mechanisms on the tone of CSR disclosure as well as examines how ESG disclosure is related with CSR tone. The results show that more independent directors would lead to having less optimistic language (positive tone) and more pessimistic language (negative tone) in the CSR report. The results also show that a higher ESG disclosure score leads to a more positive CSR narrative tone. Gender diversity, however, has a positive impact on the positivity of CSR tone when ESG score is medium or high and when board size is more than 10 members.

The rest of the paper is structured as follows: Section 2 reviews the relevant literature and develops our research hypotheses. . Section 3 introduces the sample and variables measurement for empirical research. Section 4 provides a discussion on the empirical results, then section 5 provides some additional analysis and section 6 concludes the paper.

# **Literature Review and Hypotheses Development**

## 2.1 Board Size and the Tone of CSR Narrative

Board size is considered to be a basic characteristic that affects the effectiveness and performance of the board of directors. Generally, there are controversial debates in the literature regarding the impact of board size on disclosure. Jensen (1993) believes that the large board may lead to less effective coordination and decision-making, while according to the agency theory, it is believed that the large board is conducive to better supervision. In addition, a large board of directors is more likely to have a wider range of expertise than a small board of directors which may increase the effectiveness of the board’s oversight capabilities.

The literature expects that companies with a large number of directors on boards disclose more voluntary disclosures (Albitar, 2015). Empirically, many previous studies have examined the impact of board size on risk disclosure (e.g., Elshandidy and Nero, 2015; Allini et al., 2016; Elgammal et al., 2018; Haj Salem et al., 2019) or between the size of the board and forward-looking disclosures (Wang and Hussainey, 2013). Too many directors may have a negative impact on decision-making and the costs incurred by a larger board may exceed benefits (Lipton and Lorsh, 1992). According to Jensen (1993), when the size of the group expands, coordination issues make them less effective. In addition, the larger board is expected to be less effective in monitoring senior management (Yermack, 1996).

Under the framework of agency theory, on one hand, we believe that a large board of directors controls the company’s activities less efficiently which avoids the improvement of the quality of voluntary information disclosure and that somehow will affect the narrative tone. On the other hand, boards with a large number of directors might have more pressure to publish more information related to corporate social responsibility and have a particular type of CSR tone. According to signalling theory, managers could have a more positive tone in their CSR report to signal a greater ability to engage in corporate social responsibility and also to signal their company’s good performance and thus enhance their reputation. Based on the above discussion, we set our first hypothesis as follows:

**H1: Companies with more board size have more a positive tone in CSR narrative reporting**

## 2.2 Independent Non-Executive Directors and the Tone of CSR Narrative

It is expected that the number of independent directors will affect the effectiveness of the board of directors. This is because independent directors make the board more effective by limiting the company’s opportunistic actions (Srinidhi et al., 2011). It is expected that more independent directors on the board will have a significant impact on the board’s ability and effectiveness, so as information asymmetry decreases and disclosure increases (Allini et al., 2016). In addition, independent directors can put pressure on management to publish more information (Lopes and Rodrigues, 2007; Albitar, 2015; Gerged et al., 2021). Existing literature confirms that there is a significant positive relationship between independent directors and disclosure (Abraham and Cox, 2007; Elshandidy et al., 2015). Previous studies lacked the view of the impact of independent non-executive directors on CSR intonation and only one study by Fisher et al. (2019) explores the effect of independent directors on CSR tone and found that there is a negative effect. According to the agency theory, it can be expected that independent directors will be more motivated and more effective in limiting the opportunism of managers because they have no monetary benefit to the company other than the director fees (Abrahamson and Park, 1994).

 Accordingly, based on these arguments, we argue that independent directors promote more effective decision-making and develop information processing capabilities. They will be more motivated to limiting manager’s opportunism because they have no pecuniary interest in the company aside from director’s fees. This would lead to having less positive tone in the CSR narrative as the board of directors are responsible for maintaining public interest to ensure protecting stakeholders and ensure transparency and compliance with laws. Therefore, we suggest:

**H2: Companies with more independent non-executive directors have less positive tone in CSR narrative reporting**

## 2.3 Women on Board and the Tone of CSR Narrative

The diversity of the board of directors refers to the possible differences between board members and how this diversity affects the decision-making process (Van der Walt and Ingley, 2003) and one of these decisions is ESG disclosure practice (Albitar et al., 2020). From the agency perspective, gender does not affect the effectiveness of the board of directors. However, recent literature provides different results considering that gender can explain differences in behavior and skills. Some studies have shown that female directors have a positive influence on board decisions and financial performance (Adams and Ferreira 2009; González et al., 2020). In contrast, some studies question women’s ability to contribute extra value to the board.

Female directors support informational positions rather than opportunistic positions and have a low tolerance for opportunism during the reporting process. Having female directors as board members will improve reporting discipline and increase investor confidence in management communication. This is because women are believed to have a higher degree of moral maturity than men and a lower tolerance for opportunism (Srinidhi et al., 2011). According to the framework of Merkl-Davies and Brennan (2007), the emphasis on good news is an opportunistic impression management strategy that supports agencies to make theoretical assumptions about their own interests. Previous accounting literature suggests that women on the board of directors are more effective in supervising managers and will need to take greater responsibility for management performance so if female directors provide better accountability and complexity of management communication (Martikainen et al, 2019). Therefore, it is expected that companies with more female directors will have less optimistic language in the CSR narrative.

Nonetheless, Barber and Odean (2001) suggest that in the economic context, men are usually more confident than women. Similarly, gender diversity makes directors more likely to bring various opinions, experiences, and skills to the board, thereby reducing collective thinking and making it more difficult to set a specific tone. However, some studies such as Ntim et al. (2013) and Allini et al. (2016) find that the presence of women on the board of directors has a positive impact on risk disclosure. Bassyouny et al., 2020 conclude that more females on board increases the negative relationship between female CEOs and positive tone. Therefore, this study believes that more women in the board of directors can improve the decision-making process, including disclosure practice decision, and could influence the tone of CSR reporting as more women on the board of directors may decrease impression management as female directors disclose neutral information (García-Sánchez et al., 2019; Bassyouny et al., 2020). Thus we hypothesise that:

**H3: Companies with more board gender diversity have less positive tone in CSR narrative reporting**

2.4 Audit Committee and the Tone of CSR Narrative

The resource dependence theory holds that large-size audit committee is willing to invest more resources and power to effectively perform its duties (Allegrini & Greco, 2011). More audit committee directors are more likely to bring a variety of opinions, expertise, experience, and skills to ensure effective monitoring (Li et al., 2012; Haj Salem et al., 2019). Therefore, more audit committee members may help such committees to identify and resolve potential issues in the company’s reporting process (Li et al., 2012). Audit committee scale is an important factor for audit committee to fully monitor the company's disclosure behavior (Persons, 2009). Persons (2009) provides empirical evidence that many audit committee directors seem to have a positive impact on the level of voluntary disclosure. Many studies have examined the impact of audit committee size on disclosure (Barako et al., 2006; Albitar, 2015). In addition, it is more likely to discover potential problems through knowledge sharing and improve the quality of internal control which will enable the audit committee to perform its supervisory responsibilities more effectively (Barako et al., 2006). The audit committee is directly responsible for the process of reporting so the size of the audit committee is more likely to improve the integrity of the financial reporting process. However, the size of the audit committee may prevent an effective decision-making process. The benefits of monitoring gained from a large audit committee size could be reduced by the cost of slow decision-making and less frank discussions making it easier for a dominant individual to control. Bassyouny et al., 2020 find that companies with a high independence level of audit committee have less positive tone. Melloni et al. (2016) conclude that there is a negative association between audit committee and impression management in business reports. Therefore, if a larger audit committee is more effective in monitoring financial reports, annual report communication should benefit from more transparent and simpler communication. Therefore, companies with larger audit committees will seek to provide a balanced view of the company on CSR narrative tone. Thus, this study hypothesised that:

**H4: Companies with more audit committee size have less positive tone in CSR narrative reporting**

## 2.5 ESG Disclosure and the Tone of CSR Narrative

Stakeholders mainly investors have demanded extensive disclosure on ESG related issues, thus firms in the UK have enough incentive to engage in ESG disclosure to meet the demands of stakeholders (Albitar et al, 2020). Thus, linking ESG disclosure with CSR tone provides stakeholders with an improved understanding of the firm and its future. Further to this, there is a potential link between ESG disclosure and firm performance (Yoon et al., 2018; Aboud and Diab, 2018; Brooks and Oikonomou, 2018) and CSR tone may help to show it more visible. According to signalling theory, managers could have a more positive tone in their CSR report to signal a greater ability to engage in corporate social responsibility and also to signal their company’s good performance and thus enhance their reputation. Therefore, we argue that ESG disclosure is correlated with a positive CSR tone. Thus, we hypothesise that:.

**H5: Companies with higher ESG score have more positive tone in CSR narrative reporting**

# **Research Design**

## 3.1 Sample and Data Collection

This paper uses an automated content analysis method by using a computerised software developed by Lancaster University called (CFIE-FRSE app)[[1]](#footnote-1). Further, this paper only focuses on the narrative sections that related CSR and sustainability reporting that available in the annual reports as each part of the annual report's narrative has a specific purpose of communication and displays similar content and style (Swales, 1990). The initial sample of this paper includes all firms that made up the FTSE 100 over the period 2008-2017. We exclude firm-years that are missing the necessary data for the variables used in our analysis. Further, Companies’ reports and other related data have been collected from the Bloomberg database and companies’ websites. UK was chosen because it has experienced high levels of CSR disclosure and ESG practices (Michelon et al., 2015; Helfaya and Moussa, 2017). Bloomberg ESG disclosure scores have been commonly used in the academic literature (Nollet et al., 2016, Manita et al., 2018).

*3.2.* Research Models and Variables Measurement This paper uses different regression models to test the hypotheses using CSR tone measured by wordlists following Henry (2008) (H08) and Loughran and Mcdonald (2011) (LM11) dictionaries and the models are as follow:

The first model examines the relationship between corporate governance and CSR net tone, as a percentage, based on Loughran and Mcdonald (2011), while the second model uses CSR net tone as a dummy variable (-1 if the net tone is less than -0.01, 1 if the net tone is more than +0.01, and 0 if the net tone between -0.01 and 0.01). In the third model, we have examine this relationship using CSR net tone based on Henry (2008). The last two models, four and five, explore the impact of corporate governance on CSR positive tone and negative tone respectively.

|  |  |
| --- | --- |
| CSR Net Tone (LM11) = β0 + β1*\**Bsize + β2*\**IND+ β3*\**Women% + β4*\**ACsize + β5*\**ESG-Score + β6*\**ROA + β7*\**Lev + β8*\**LogFS + *α* + *µi* + *εit* | **Model 01 - RE** |
| CSR Net Tone (LM11) Dummy = β0 + β1*\**Bsize + β2*\**IND+ β3*\**Women% + β4*\**ACsize + β5*\**ESG-Score + β6*\**ROA + β7*\**Lev + β8*\**LogFS + *α* + *εit* | **Model 02 - FE** |
| CSR Net Tone (H08) = β0 + β1*\**Bsize + β2*\**IND+ β3*\**Women% + β4*\**ACsize + β5*\**ESG-Score + β6*\**ROA + β7*\**Lev + β8*\**LogFS + *α* + *µi* + *εit* | **Model 03 - RE** |
| CSR Positive Tone (LM11) = β0 + β1*\**Bsize + β2*\**IND+ β3*\**Women% + β4*\**ACsize + β5*\**ESG-Score + β6*\**ROA + β7*\**Lev + β8*\** *LN\_TRNOVR* + *α* + *µi* + *εit* | **Model 04 - RE** |
| CSR Negative Tone (LM11) = β0 + β1*\**Bsize + β2*\**IND+ β3*\**Women% + β4*\**ACsize + β5*\**ESG-Score + β6*\**ROA + β7*\**Lev + β8*\** LN\_TRNOVR+ *α* + *µi* + *εit* | **Model 05 - RE** |

Insert Table 1

# **Empirical results**

As discussed in the methodology, several regression models were run to investigate the impact of various corporate governance variables and ESG disclosure score on different measures of CSR Tone within FTSE100 companies. Table 2 provides the descriptive statistics. The table shows that the mean net tone of CSR using both Loughran and Mcdonald (2011) and Henry (2008) measurements are 0.21, 0.56 respectively. Further, the mean for positive tone according to LM 2011 wordlist is 0.61 and the mean for negative tone is -0.39. The mean ESG disclosure score for the sample is 41% which reflects that many firms don’t provide high ESG information. In addition to this, the results clearly show that no company fully obtained an overall score of more than 70% according to the ESG score from Bloomberg.

Insert Table 2

Table 3 shows the results for robustness tests (multicollinearity, heteroscedasticity, and serial correlation) that have to be carried out to identify potential endogenous issues and to make sure that proposed models are robust and appropriate to investigate the intended relationships. It can be seen from Table 3 that the variance inflation factor (VIF) test shows that there is no Multicollinearity problem because the VIF results of all regression models are less than 10 (Wooldridge 2002). Heteroskedasticity was also tested in this study, as it can invalidate statistical tests of significance that assume that the modelling errors are uncorrelated and uniform, and that their variances do not vary with the effects being modelled Johnston (1972). The table shows the results of the Modified Wald Test for Groupwise Heteroscedasticity indicating that a heteroscedasticity issue exists among the second and third models. Finally, serial correlation, or autocorrelation, in linear panel-data models can bias the standard errors and cause the results to be less efficient (Drukker 2003). Therefore, the Wooldridge Test for Autocorrelation in Panel Data was used which shows that variables are serially correlated in all regression models, except the second and third models. Therefore, clustered standard errors have been obtained for all five regression models to adjust for both heteroscedasticity and autocorrelation (Drukker 2003; Hoechle 2007).

Insert Table 3

Table 4 shows the regression results for the constructed models and as it can be seen results from running model 1 and model 3 that independent directors have a negative effect on the net CSR tone when net CSR tone measured by wordlist of LM 2011 and Henry 2008 dictionaries, which means that more independent directors promote more effective decision-making and develop information processing capabilities and they will be more motivated to limiting manager’s opportunism and this would lead to having less positive tone in the CSR report. Women on boards do not effect the net CSR tone, no matter how is calculated (LM11 or H08) which is consistent with Bilimoria and Piderit (1994) who claimed that female board members may lack the ability to materially influence the tone of the disclosure. Further, a higher ESG score will lead to a positive significant impact on the way a company is involving with and disclosing CSR arrangements, no matter how the net CSR tone is calculated. Further, as it can be seen from model 2 results, we use LM, 2011 as a dummy variable which equals -1 if the net tone is less than -0.01, 1 if the net tone is more than +0.01, and 0 if the net tone between -0.01 and 0.01. The results are the same except for audit committee size which has a positive effect on the net CSR tone and this is consistent with previous studies which found that more members on audit committee would help to fully monitor the company’s disclosure behaviour (Li et al, 2012; Persons, 2009; Barako et al, 2006; Fogarty, 1993).

Following this, we run the analysis for positive CSR tone and negative CSR Tone separately measured by LM, 2011 dictionaries, and as it can be seen from models 4 and 5 in table 4, the results show that independent directors would affect the positive tone of CSR negatively as well as independent directors positively affect the negative CSR tone and this result is consistent with Fisher et al (2019) that more independent directors would affect CSR tone negatively. Further, ESG score has a significant positive impact on the positivity of CSR tone and we also found that the coefficient of ESG disclosure score with the negative tone of CSR (-0.162) is negative but not significant. High ESG disclosure score positively affects the positive tone of CSR which means managers would have a more positive tone in their CSR report to signal a greater ability to engage in corporate social responsibility and also to signal their company’s good performance and thus enhance their reputation to gain competitive advantages. Further, more women on board significantly decrease the negativity of CSR tone.

Insert Table 4

# **Additional Analysis**

In this section, we have run the analysis again on sub-samples based on ESG score (Low: 0-25%, Medium: 25-50%, and High: 50-100%), then based on board size (less or equal to 10, more than 10), to explore the impact of ESG level and/or board size on the relationship between corporate governance and CSR tone.

As it can be seen from table 5, we divided our sample into three sub-samples, 1. Firms with a low level of ESG disclosure, include firms that have between 0-25% ESG score according to Bloomberg data. 2. Firms with a medium level of ESG score that have between 25-50% and 3. Firms with a high level of ESG disclosure score have an ESG score of more than 50%. The results show that for firms with a low ESG score (less than 25%), board size and audit committee size are significantly related to the positive tone of CSR. We also found the same results for board independence when the ESG score is in the medium level. Further, the coefficient of women on board is significant and positive for firms with medium and high ESG scores.

In addition, we divided our sample into firms that have less than 10 members (the average board size) as board size and more than 10. The results show that no matter what the board size is, independent directors and ESG disclosure score are significantly related to CSR tone. Interestingly, we can also see from the results reported in table 5 that women on board percentage have a positive impact on the positivity of CSR tone when ESG score is medium or high as well as when board size is more than 10 members.

Insert Table 5

One additional analysis is to check whether any deviation from the average ESG score has any impact on the governance-CSR tone relationship, so we divided our sample into two sub-samples, firms with low ESG disclosure score (less than ESG average) and firms with high ESG disclosure score (higher than ESG average). As it can be seen from running model 11 in table 6, we found the same results for firms with low ESG disclosure score and the coefficient for independent directors is significantly negative (-0.231) and higher than the coefficient of the whole sample which was (-0.333). This means that the effect of independent directors on the positive tone of CSR is stronger for firms with a low ESG disclosure score. However, surprisingly, results from running model 12 for firms with high ESG disclosure score, we found that the coefficients for both women percentage and audit committee size are positive and significant, while the amount of impact is much higher for women percentage than for audit committee size.

Thus, we divided the sample based on the ratio of women on board (less than 25%, equal or higher than 25%), and found that when the percentage of women on board is less than 25%, independent directors is significantly related with the positive CSR tone when women on board percentage is less than 25% and ESG score is significantly related with the positive tone of CSR when the percentage of women on board is more than 25%. The results are reported in table 6.

Insert Table 6

# **Conclusion**

This paper examines the impact of corporate governance mechanisms namely board size, independent directors, gender diversity, and audit committee size on the tone of CSR. Firm fixed and random effect regressions were used based on panel data from FTSE 100 between 2008 and 2017. Two measurements of LM, 2011 and Henry, 2008 dictionaries have been used to estimate the tone of the CSR narrative. The results show independent directors have a negative effect on the net CSR tone and more independent directors in the board would lead to having less positive tone and more negative in the CSR narrative report. Further, the results show that a higher ESG disclosure score will lead to a more positive CSR narrative tone. Also, women on board percentage have a positive impact on the positivity of CSR tone when ESG score is medium or high and when board size is more than 10 members. Board size and women on board percentage does not affect the net CSR tone, no matter how is calculated (LM or H8) and audit committee size has a positive effect on the net CSR tone when using LM, 2011 as a dummy variable. This paper contributes to the literature by attempting to explore the underlying drivers of CSR tone and taking into consideration four corporate governance mechanisms namely board size, independent directors, gender diversity and audit committee size as well as add to the disclosure literature by investigating whether firms will have more positive CSR tone when ESG disclosure is higher and linking ESG disclosure with positive CSR tone provide stakeholders with an improved understanding of the firm’s disclosure practice. This study offers a number of important implications for policy makers, investors, and corporate managers. It offers insights to decision-makers and regulatory bodies regarding the current practices of the tone of CSR reports. It helps to inform regulators about boardrooms of UK companies are aware of the need to provide more non-financial information to stakeholders’ decision-making process. It also shows that boardroom of UK companies committed to high levels of ESG report more positive CSR information. This offers meaningful insights to regulators on UK non-financial disclosure practices. To avoid the disclosure biasness and the possibility of using of impression management, policy makers need to set rules and/or guidelines to control the tone of CSR reports. Policy makers need to encourage companies to provide a balanced disclosure that reflects both good and bad news. Policy makers need be aware of the characteristics of the board of directors that affect the tone of the CSR narrative. So, they can impose regulations for an appropriate corporate governance mechanism, indicating that more independent directors determine the narrative tone of CSR narrative. The study also provides managerial implications. It offers interesting insights into strategies they need to follow to reports CSR information in the narrative sections of their annual reports. For effective CSR disclosure with shareholders, managers should give high priority to improve the quality of corporate governance. Finally, the study offers a social implication. It shows that ESG metrics do matter for CSR disclosure practices by UK companies. This indicates that there is an important interaction between ESG and CSR disclosure that could enhance our understanding of managers’ disclosure practices. One of the theoretical implications that emerges from these findings is that the determinants of CSR disclosure should not be investigated in isolation from ESG metrics and corporate governance mechanisms.

Our paper has a number of limitations that provide opportunities for future research. This paper applied in the UK context. Future studies can consider different countries to explore changes on how corporate governance and particularly ownership structure may affect CSR narrative. Future research can also investigate how CEO education and background may affect the tone of the CSR narrative. It would also be interesting to examine board interlock and overlapped audit committee directors on the tone of the CSR narrative. Additional research could be undertaken to examine whether governance mechanisms have the same impact on mandatory and voluntary content of the CSR disclosure tone. Finally, it would be interesting to study the economic consequences of CSR disclosure tone (e.g. its impact on firm performance, firm value, cost of capital, credit rating, trade credit, cash holding, dividend policy and corporate investment efficiency).

**Endnotes**

The data that support the findings of this study are available from the corresponding author upon reasonable request.

# **References**

Al Lawati, H. and Hussainey, K. (2021). “Disclosure of forward-looking information: Does audit committee overlapping matter?”. International Journal of Accounting and Performance Evaluation, forthcoming.

Al Lawati, H., Hussainey, K. and Sagitova, R. (2021). Disclosure quality vis-à-vis disclosure quantity: Does audit committee matter in Omani financial institutions? Review of Quantitative Finance and Accounting, forthcoming.

Aboud, A. and Diab, A. (2018), "The impact of social, environmental and corporate governance disclosures on firm value", Journal of Accounting in Emerging Economies, 8 (4), 442-458.

Abraham, S. and Cox, P. (2007), Analysing the determinants of narrative risk information in UK FTSE 100 annual reports. The British Accounting Review, 39(3), 227–248.

Abrahamson, E. and Park, C. (1994), “Concealment of negative organizational outcomes: an agency theory perspective”, Academy of Management Journal, 37(5), 1302-1334.

Adams, R.B. and Ferreira, D. (2009), "Women in the boardroom and their impact on governance and performance", Journal of Financial Economics, 94(2), 291-309.

Akben-Selcuk, E. (2019), “Corporate Social Responsibility and Financial Performance: The Moderating Role of Ownership Concentration in Turkey”, Sustainability, 11(13), 36-43.

Albitar, K. (2015). Firm characteristics, governance attributes and corporate voluntary disclosure: a study of Jordanian listed companies. International Business Research, 8(3), 1-10.

[Albitar, K.](https://www.emerald.com/insight/search?q=Khaldoon%20Albitar), [Hussainey, K.](https://www.emerald.com/insight/search?q=Khaled%20Hussainey), [Kolade, N.](https://www.emerald.com/insight/search?q=Nasir%20Kolade" \o "Nasir Kolade) and [Gerged, A.](https://www.emerald.com/insight/search?q=Ali%20Meftah%20Gerged" \o "Ali Meftah Gerged) (2020), "ESG disclosure and firm performance before and after IR: The moderating role of governance mechanisms", [International Journal of Accounting & Information Management](https://www.emerald.com/insight/publication/issn/1834-7649), Vol. 28(3), 429-444.

Allegrini, M. and Greco, G. (2011), “Corporate boards, audit committees and voluntary disclosure: Evidence from Italian Listed Companies”, Journal of Management & Governance. 17, 1-30.

Allini, A., Manes Rossi, F. and Hussainey, K. (2016). “The board's role in risk disclosure: an exploratory study of Italian listed state-owned enterprises” Public Money & Management, 36(2), 113-120.

Aly, D., El-Halaby, S. and Hussainey, K. (2018), “Tone disclosure and financial performance: evidence from Egypt”, Accounting Research Journal, 31(1), 63-74.

Aouadi, A. and Marsat, S. (2018), “Do ESG controversies matter for firm value? Evidence from international data”, Journal of Business Ethics, 151 (4), 1027-1047

Arena, C., Bozzolan, S., & Michelon, G. (2015). Environmental reporting: Transparency to stakeholders or stakeholder manipulation? An analysis of disclosure tone and the role of the board of directors. Corporate Social Responsibility and Environmental Management, 22(6), 346–361.

Atan, R., Alam, Md. M., Said, J. and Zamri, M. (2018), “The impacts of environmental, social, and governance factors on firm performance: Panel study on Malaysian companies”, Management of Environmental Quality An International Journal, 29, 182-194.

Barako, D.G., Hancock, P. and Izan, H.Y. (2006), “Factors influencing voluntary corporate disclosure by Kenyan companies”, Corporate Governance: An International Review, 14 (2), 107-125.

Barkemeyer, R., Comyns, B., Figge, F., Napolitano, G. (2014). CEO statements in sustainability reports: Substantive information or background noise? Accounting Forum, 38, 241–257.

Barber, B.M. & Odean, T. (2001). Boys will be boys: Gender, overconfidence, and common stock investment. The Quarterly Journal of Economics, 116(1), 261–292.

Bassyouny, H., Abdelfattah, T., & Tao, L. (2020). Beyond narrative disclosure tone: The upper echelons theory perspective. International Review of Financial Analysis, 70, 101499.

Bernardi, C. and Stark, A. (2018), “Environmental, social and governance disclosure, integrated reporting, and the accuracy of analyst forecasts”, British Accounting Review, 50 (1), 16–31.

Bilimoria, D., and S. Kristin Piderit, (1994). Board committee membership: Effects of sex-biased bias, The Academy of Management Journal 37, 1453-1477.

Bozzolan, S., Cho, C.H., & Michelon, G. (2015). Impression management and organizational audiences: The Fiat Group case. Journal of Business Ethics, 126(1), 143–165.

Brooks, C. and Oikonomou, I. (2017), “The effects of environmental, social and governance disclosures and performance on firm value: A review of the literature in accounting and finance”, The British Accounting Review, 50 (1), 1-15.

Chen, S., Wang, Y., Albitar, K., & Huang, Z. (2021). Does ownership concentration affect corporate environmental responsibility engagement? The mediating role of corporate leverage. Borsa Istanbul Review. In press.

Cho, C. H., Roberts, R. W., & Patten, D. M. (2010). The language of US corporate environmental disclosure. Accounting, Organizations and Society, 35(4), 431–443.

Dam, L. and Scholtens, B. (2013), “Ownership concentration and CSR policy of European multinational enterprises”, Journal of Business Ethics, Vol.118, No.1, pp. 117–126

Drukker, D. M., 2003. Testing for serial correlation in linear panel-data models. The Stata Journal, 3 (2), 168-177.

Eccles, R. G., Ioannou, I. and Serafeim, G. (2014), “The impact of corporate sustainability on organizational processes and performance”, Management Science, 60 (11), 2835-2857.

Elgammal, M., Hussainey, K. and Ahmed, F. (2018), "Corporate governance and voluntary risk and forward-looking disclosures", Journal of Applied Accounting Research, 19 (4), 592-607.

El-Haj, M., Alves, P., Rayson, P., Walker, M., Young, S. (2020). Retrieving, classifying and analysing narrative commentary in unstructured (glossy) annual reports published as PDF files, Accounting and Business Research, 50:1, 6-34.

El‐Haj, M., Rayson, P., Walker, M., Young, S., & Simaki, V. (2019). In search of meaning: Lessons, resources and next steps for computational analysis of financial discourse. Journal of Business Finance & Accounting, 46(3-4), 265-306.

Elshandidy, T. and Neri, L. (2015), Corporate governance, risk disclosure practices, and market liquidity: Comparative evidence from the UK and Italy. Corporate Governance: An International Review, 23(4), 331-356.

Fisher, R., van Staden, C. and Richards, G. (2019), Watch that tone: An investigation of the use and stylistic consequences of tone in corporate accountability disclosures, Accounting, Auditing & Accountability Journal, 33 (1), 77-105.

García-Sánchez, I. M., Suárez-Fernández, O., & Martínez-Ferrero, J. (2019). Female directors and impression management in sustainability reporting. International Business Review, 28(2), 359-374.

Gerged, A. M., Albitar, K., & Alhaddad, L. (2021). Corporate environmental disclosure and earnings management – The moderating role of corporate governance structures. International Journal of Finance and Economics. In press.

Giannarakis, G., Konteos, G. and Sariannidis, N. (2014), “ Financial, governance and environmental determinants of corporate social responsible disclosure”, Management Decision, 52, 1928-1951.

González, M., Guzmán, A., Pablo, E. et al. Does gender really matter in the boardroom? Evidence from closely held family firms. Review management science, 14, 221 267.

Haj Salem, I., Ayadi, S. and Hussainey, K. (2019), "Corporate governance and risk disclosure quality: Tunisian evidence", Journal of Accounting in Emerging Economies, 9 (4), 567-602.

Hart, R.P., Childers, J.P. and Lind, C.J. (2013), Political Tone: How Leaders Talk & Why, University of Chicago Press, Chicago, IL.

Helfaya, A. and Moussa, T. (2017), “Do Board's Corporate Social Responsibility Strategy and Orientation Influence Environmental Sustainability Disclosure? UK Evidence, Business Strategy and the Environment, 26 (8), 1061-1077.

Henry, E. (2008), “Are investors influenced by how earnings press releases are written?” Journal of Business Communications. 45(4), 363-407.

Henry, E. and Leone, A. (2016). Measuring qualitative information in capital markets research: comparison of alternative methodologies to measure disclosure tone. The Accounting Review, 91 (1), 153–178.

Hoechle, D., (2007). Robust Standard Errors for Panel Regressions with Cross-Sectional Dependence. The Stata Journal, 7 (3), 281–312.

Huang, X., Teoh, S.H. and Zhang, Y.L. (2014), “Tone management”, Accounting Review, 89(3), 1083-1113.

Husted, B. W. and Sousa-Filho, J. M. de. (2018), “Board structure and environmental, social, and governance disclosure in Latin America”, Journal of Business Research, 102, 220-227.

Javaid Lone, E., Ali, A. and Khan, I. (2016), "Corporate governance and corporate social responsibility disclosure: evidence from Pakistan", Corporate Governance, 16(5), 785-797.

Jensen, M.C. (1993), “The modern industrial revolution, exit, and the failure of internal control systems”, The Journal of Finance, 48 (3), 831-880.

Johnston, J., 1972. Econometric Methods. New York: McGraw-Hill.

Kao, M. F., Hodgkinson, L. and Jaafar, A. (2018), “Ownership structure, board of directors and firm performance: evidence from Taiwan”, Corporate Governance: The International Journal of Business in Society, 19 (1), 189-216.

Lai, A., Melloni, G. and Stacchezzini, R. (2018), "Integrated reporting and narrative accountability: the role of preparers", Accounting, Auditing & Accountability Journal, 31(5), 1381-1405.

Lewis, C., & Young, S. (2019). Fad or future? Automated analysis of financial text and its implications for corporate reporting. Accounting and Business Research, 49(5), 587-615.

Li, J., Mangena, M., & Pike, R. (2012). The effect of audit committee characteristics on intellectual capital disclosure. The British Accounting Review, 44(2), 98-110.

Li, Z., Liao, G., and Albitar, K. (2020). Does corporate environmental responsibility engagement affect firm value? The mediating role of corporate innovation. Business Strategy & Environment 29 (3), 1045–1055.

Liao, G., Hou, P., Shen, X., & Albitar, K. (2020). The impact of economic policy uncertainty on stock returns: The role of corporate environmental responsibility engagement. International Journal of Finance & Economics. In press.

Lim, S., Matolcsy, Z., & Chow, D. (2007). The association between board composition and different types of voluntary disclosure. European Accounting Review, 16(3), 555–583.

Lipton, M. and Lorsh, J.W. (1992), “A modest proposal for improved corporate governance”, Business Lawyer, 48(1), 59–77.

Lopes, P. T., & Rodrigues, L. L. (2007). Accounting for financial instruments: An analysis of the determinants of disclosure in the Portuguese stock exchange. The International Journal of Accounting, 42(1), 25–56.

Loughran, T., and B. McDonald. (2011). When Is a Liability Not a Liability? Textual Analysis, Dictionaries, and 10‐Ks. Journal of Finance 66, 35– 65.

Loughran, T., and B. McDonald. (2015). The use of word lists in textual analysis. Journal of Behavioral Finance 16, 1– 11.

Loughran, T. and McDonald, B., (2016). Textual analysis in accounting and finance: a survey. Journal of Accounting Research, 54 (4), 1187–1230.

Manita, R., Bruna, M., Dang, R. and Houanti, L. (2018), Board gender diversity and ESG disclosure: evidence from the USA, Journal of Applied Accounting Research, 19 (2), 206-224.

Marquez-Illescas, G., Zebedee, A.A. & Zhou, L. (2019). Hear me write: Does CEO narcissism affect disclosure?. Journal of Business Ethics 159, 401–417.

Martikainen, Minna and Miihkinen, Antti and Watson, Luke, Board Characteristics and Disclosure Tone (2019). Available at SSRN: https://ssrn.com/abstract=3410036 or http://dx.doi.org/10.2139/ssrn.3410036

Merkl-Davies, D. M., & Brennan, N. M. (2007). Discretionary disclosure strategies in corporate narratives: Incremental information or impression management? Journal of Accounting Literature, 26, 116–196.

Michelon, G., Pilonato, S. and Ricceri, F. (2015), “CSR reporting practices and the quality of disclosure: An empirical analysis”, Critical Perspectives on Accounting, 33, 59-78.

Mughal, Y. H., Jehangir, M., Khan, M., Saeed, M. (2020). Nexus between corporate social responsibility and firm’s performance: A panel data approach. International Journal of Economics and Finance, In press.

Nollet J, Filis, G. and Mitrokostas E. (2016), “Corporate social responsibility and financial performance: a non-linear and disaggregated approach”, Economic Modelling, 52 (B), 400–407.

Ntim, C.G., Lindop, S. and Thomas, D.A. (2013), Corporate governance and risk reporting in South Africa: A study of corporate risk disclosures in the pre- and post2007/2008 global financial crisis period. International Review of Financial Analysis, 30, 363–383.

Orazalin, N. (2019), "Corporate governance and corporate social responsibility (CSR) disclosure in an emerging economy: evidence from commercial banks of Kazakhstan", Corporate Governance, 19, (3), 490-507.

Patelli, L. & M. Pedrini. (2015). Is tone at the top associated with financial reporting aggressiveness? Journal of Business Ethics, 126(1), 3–19.

Persons, O. S. (2009). Audit committee characteristics and earlier voluntary ethics disclosure among fraud and no-fraud firms. International Journal of Disclosure and Governance, 6(4), 284-297.

Price, S. M.; J. S. Doran; D. R. Peterson; and B. A. Bliss. (2012). Earnings Conference Calls and Stock Returns: The Incremental Informativeness of Textual Tone. Journal of Banking & Finance 36, 992– 1011.

Samaha, K., Khlif, H. and Hussainey, K. (2015), “The impact of board and audit committee characteristics on voluntary disclosure: a meta-analysis”, Journal of International Accounting, Auditing and Taxation, 24, 13-28.

Schleicher, T., & Walker, M. (2010). Bias in the tone of forward‐looking narratives. Accounting and Business Research, 40 (4), 371-390

Srinidhi, B., Gul, F. A., & Tsui, J. (2011). Female directors and earnings quality. Contemporary Accounting Research, 28(5), 1610–1644.

Swales, J.M. (1990), Genre Analysis: English in Academic and Research Settings, Cambridge University Press, Cambridge.

Tucker, J.W. (2015). The relation between disclosure quality and reporting quality: A discussion of Cassell, Myers, and Seidel (2015). Accounting, Organizations and Society 46, 39-43.

Van der Walt, N. and Ingley, C. (2003), Board dynamics and the influence of professional background, gender and ethnic diversity of directors. Corporate Governance: An International Review, 11, 218–234.

Wang, M.; Hussainey, K. (2013). Voluntary forward-looking statements driven by corporate governance and their value relevance. J. Account. Public Policy, 32, 26–49.

Wooldridge, J. M., 2002. Econometric Analysis of Cross Section and Panel Data. London, UK: The MIT Press.

Yermack, D. (1996): “Higher market valuation of companies with a small board of directors”, Journal of Financial Economics, 40, 2, pp 185-211.

Yoon, B., Lee, J.H. and Byun, R. (2018), “Does ESG performance enhance firm value? Evidence from Korea”, Sustainability, Vol. 10, No.10, PP 3635.

Table 1: A Summary Table of All Variables

| **Variable** | **Description** | **References for definition**  | **Calculation** | **Ref for Calculation** |
| --- | --- | --- | --- | --- |
| CSR Net Tone (H08) | Net Tone of CSR Narratives (H08) | Henry (2008) | Aggregate ESG commentary - Net tone ([nr of positive words - nr of negative words]/[nr of positive words + nr of negative words]) | Henry and Leone, 2016 |
| CSR Net Tone (LM11) | Net Tone of CSR Narratives (LM11) | Loughran and Mcdonald (2011) | Aggregate ESG commentary - Net tone ([nr of positive words - nr of negative words]/[nr of positive words + nr of negative words]) | Loughran and Mcdonald, 2016 |
| BRD\_SZ | Board Size | Lipton and Lorsh, 1992; Jensen, 1993; Yermack, 1996; Wang and Hussainey, 2013; Albitar, 2015; Elshandidy and Nero, 2015; Allini et al., 2016; Elgammal et al., 2018; Haj Salem et al., 2019 | LN (Number of Directors on the board) | Allegrini and Greco, 2011; Javaid Lone et al., 2016 and Husted and Sousa-Filho, 2018; Orazalin, 2019; Albitar et al., 2020 |
| PCT\_INED | Independent Non-Executive Directors | Abrahamson and Park, 1994; Abraham and Cox, 2007; Lopes and Rodrigues, 2007; Srinidhi et al., 2011; Albitar, 2015; Elshandidy et al., 2015; Allini et al., 2016 | Independent Non-Executive Directors / Board Size | Lim et al., 2007; Albitar, 2015; Samaha et al., 2015; Haj Salem et al., 2019 |
| PCT\_BRD\_WOMEN | Women on Board | Van der Walt and Ingley, 2003; Adams and Ferreira 2009; Srinidhi et al., 2011; Ntim et al., 2013; Allini et al., 2016; Martikainen et al, 2019; Albitar et al., 2020; González et al., 2020 | Female Directors / Board Size | Adams and Ferreira, 2009; Giannarakis et al., 2014; and Husted and Sousa-Filho, 2018; Albitar et al., 2020 |
| AUDCOM\_SZ | Audit Committee Size | Barako et al., 2006; Allegrini & Greco, 2011; Li et al., 2012; Albitar, 2015; Haj Salem et al., 2019 | No of Directors on the Audit Committee | Li et al., 2012; Haj Salem et al., 2019 |
| ESG | ESG Disclosure | Yoon et al., 2018; Aboud and Diab, 2018; Brooks and Oikonomou, 2018; Albitar et al, 2020 | ESG Disclosure score provided by Bloomberg is based on the available information in the annual reports, corporate social responsibility reports, and firms’ websites. Further, this score ranges from 0.1 for firms that disclose a minimum amount of ESG data to 100 for those that disclose every data point collected by Bloomberg | Nollet et al., 2016 and Manita et al., 2018; Albitar et al., 2020 |
| LN\_TRNOVR | Firm Size | Bernardi and Stark, 2018; Aouadi and Marsat, 2018; Kao et al., 2018; Aboud and Diab, 2018 | Natural Logarithm of Sales Revenue (Turnover) | Bernardi and Stark, 2018; Aouadi and Marsat, 2018; Kao et al., 2018; Aboud and Diab, 2018 |
| FNCL\_LVRG | Financial Leverage | Bernardi and Stark, 2018; Aouadi and Marsat, 2018; Kao et al., 2018; Aboud and Diab, 2018 | Total Debt / Total Equity | Bernardi and Stark, 2018; Aouadi and Marsat, 2018; Kao et al., 2018; Aboud and Diab, 2018 |
| ROA | Return on Assets | Bernardi and Stark, 2018; Aouadi and Marsat, 2018; Kao et al., 2018; Aboud and Diab, 2018 | Net Income / Total Assets | Bernardi and Stark, 2018; Aouadi and Marsat, 2018; Kao et al., 2018; Aboud and Diab, 2018 |

Table 2. Descriptive Statistics

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variable** | **N** | **Median** | **Mean** | **SD** | **Min** | **Max** |
| CSR\_LM\_Net\_Tone | 842 | 0.23 | 0.21 | 0.24 | -1.00 | 1.00 |
| CSR\_H08\_Net\_Tone | 839 | 0.60 | 0.56 | 0.25 | -0.81 | 1.00 |
| CSR\_LM11\_Pos\_Tone | 842 | 0.62 | 0.61 | 0.12 | 0.00 | 1.00 |
| CSR\_LM11\_Neg\_Tone | 842 | -0.38 | -0.39 | 0.12 | -1.00 | 0.00 |
| BRD\_SZ | 1,007 | 10.00 | 10.64 | 2.47 | 4.00 | 21.00 |
| PCT\_INED | 1,008 | 0.67 | 0.65 | 0.12 | 0.33 | 0.93 |
| PCT\_BRD\_WOMEN | 998 | 0.20 | 0.20 | 0.10 | 0.00 | 0.50 |
| AUDCOM\_SZ | 998 | 4.00 | 4.24 | 1.90 | 2.00 | 8.00 |
| ESG | 998 | 0.40 | 0.41 | 0.12 | 0.03 | 0.69 |
| ROA | 1,008 | 5.88 | 8.75 | 20.61 | -21.75 | 236.78 |
| FNCL\_LVRG | 1,008 | 2.92 | 7.35 | 13.72 | -2.37 | 149.60 |
| LN\_TRNOVR | 992 | 8.76 | 8.59 | 1.83 | 0.89 | 13.06 |

***CSR\_LM\_Net\_Tone****: Ratio of Net Tone of CSR Narratives, based on Loughran and Mcdonald (2011),* ***CSR\_H08\_Net\_Tone****: Ratio of Net Tone of CSR Narratives, based on Henry (2008),* ***CSR\_LM11\_Pos\_Tone****: Ratio of Positive Tone of CSR Narratives, based on Loughran and Mcdonald (2011),* ***CSR\_LM11\_Neg\_Tone****: Ratio of Negative Tone of CSR Narratives, based on Loughran and Mcdonald (2011),* ***BRD\_SZ****: Board Size,* ***PCT\_INED****: Ratio of Independent Non-Executive Directors,* ***PCT\_BRD\_WOMEN****: Ratio of Women on Board,* ***AUDCOM\_SZ****: Audit Committee Size,* ***ESG****: ESG Disclosure,* ***ROA****: Return on Assets,* ***FNCL\_LVRG****: Financial Leverage,* ***LN\_TRNOVR****: Firm Size*

Table 3. Robustness Tests

| **Robustness Checks** | **Model 01** | **Model 02** | **Model 03** | **Model 04** | **Model 05** |
| --- | --- | --- | --- | --- | --- |
| Multicollinearity Test (VIF)*\* [if VIF >10 → there is multicollinearity problem]* | Mean VIF = 1.50 | Mean VIF = 1.50 | Mean VIF = 1.50 | Mean VIF = 1.50 | Mean VIF = 1.50 |
| Heteroskedasticity Test - *Using estat hottest \* [if<0.05 → there is Heteroskedasticity]* | Prob > chi2 = 0.5088 | Prob>chi2 = 0.0000 | Prob>chi2 = 0.0196 | Prob>chi = 0.5088 | Prob>chi = 0.5088 |
| Serial Correlation Test*\* [if<0.05 → Variables are serially correlated]* | Prob > F = 0.0267 | Prob > F = 0.1182 | Prob > F = 0.0556 | Prob > F = 0.0267 | Prob > F = 0.0267 |
| **Decision** | **vce(robust)** | **vce(robust)** | **vce(robust)** | **vce(robust)** | **vce(robust)** |

Table 4. Regression Results

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
|  | CSR Net Tone [LM11] | CSR Net Tone [LM11] Dummy | CSR Net Tone [H08] | CSR Positive Tone [LM11] | CSR Negative Tone [LM11] |
| VARIABLES | RE | FE | RE | RE | RE |
|  |  |  |  |  |  |
| BRD\_SZ | -0.00490 | -0.0182 | -0.00836 | -0.00245 | -0.00671 |
|  | (0.338) | (0.417) | (0.118) | (0.338) | (0.107) |
| PCT\_INED | -0.333\*\*\* | -1.423\*\*\* | -0.174\* | -0.166\*\*\* | 0.153\* |
|  | (0.00455) | (0.00214) | (0.0854) | (0.00455) | (0.0591) |
| PCT\_BRD\_WOMEN | 0.173 | 0.359 | 0.0598 | 0.0864 | -0.165\*\* |
|  | (0.194) | (0.431) | (0.670) | (0.194) | (0.0396) |
| AUDCOM\_SZ | 0.00117 | 0.0525\*\* | 0.00377 | 0.000584 | 0.00522 |
|  | (0.828) | (0.0162) | (0.537) | (0.828) | (0.173) |
| ESG | 0.313\*\* | 1.308\* | 0.343\*\*\* | 0.157\*\* | -0.162 |
|  | (0.0246) | (0.0705) | (0.00609) | (0.0246) | (0.120) |
| ROA | -0.000402 | -0.00483 | -0.000466\* | -0.000201 | 9.94e-07 |
|  | (0.237) | (0.115) | (0.0956) | (0.237) | (0.998) |
| FNCL\_LVRG | -0.00101 | 0.00734\*\* | -0.000428 | -0.000503 | 0.00142\*\*\* |
|  | (0.302) | (0.0446) | (0.552) | (0.302) | (0.00215) |
| LN\_TRNOVR | -0.00237 | -0.157\*\* | -0.00872 | -0.00119 | 0.000867 |
|  | (0.807) | (0.0205) | (0.307) | (0.807) | (0.895) |
| Constant | 0.352\*\*\* | 2.279\*\*\* | 0.678\*\*\* | 0.676\*\*\* | 0.359\*\*\* |
|  | (0.000111) | (0.00160) | (0) | (0) | (0) |
|  |  |  |  |  |  |
| Observations | 829 | 829 | 826 | 829 | 829 |
| Year effect | Yes | Yes | Yes | Yes | Yes |
| R-squared | 0.0170 | 0.0314 | 0.0162 | 0.0170 | 0.0190 |

*Robust pval in parentheses*

*\*\*\* p<0.01, \*\* p<0.05, \* p<0.1*

***CSR Net Tone [LM11]****: Ratio of Net Tone of CSR Narratives, based on Loughran and Mcdonald (2011),* ***CSR Net Tone [LM11]******Dummy****: Net Tone of CSR Narrative, based on Loughran and Mcdonald (2011), as a dummy variable [0 if between 1% and -1%, +1 if higher than 1%, and -1 if less than -1%],* ***CSR Net Tone [H08]****: Ratio of Net Tone of CSR Narratives, based on Henry (2008),* ***CSR Positive Tone [LM11]****: Ratio of Positive Tone of CSR Narratives, based on Loughran and Mcdonald (2011),* ***CSR Negative Tone [LM11]****: Ratio of Negative Tone of CSR Narratives, based on Loughran and Mcdonald (2011),* ***BRD\_SZ****: Board Size,* ***PCT\_INED****: Ratio of Independent Non-Executive Directors,* ***PCT\_BRD\_WOMEN****: Ratio of Women on Board,* ***AUDCOM\_SZ****: Audit Committee Size,* ***ESG****: ESG Disclosure,* ***ROA****: Return on Assets,* ***FNCL\_LVRG****: Financial Leverage,* ***LN\_TRNOVR****: Firm Size*

Table 5. Additional Analysis 1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (6) | (7) | (8) | (9) | (10) |
|  | CSR Net Tone [LM]IF (ESG 0-25%) | CSR Net Tone [LM]IF (ESG 25-50%) | CSR Net Tone [LM]IF (ESG >50%) | CSR Net Tone [LM]IF (BRDSZ<=10) | CSR Net Tone [LM]IF (BRDSZ>10) |
| VARIABLES | RE | RE | RE | RE | RE |
|  |  |  |  |  |  |
| BRD\_SZ | -0.0332\*\* | -0.00237 | 0.00288 | -0.00981 | -0.00254 |
|  | (0.0137) | (0.612) | (0.820) | (0.477) | (0.775) |
| PCT\_INED | -0.339 | -0.194\* | -0.0750 | -0.523\*\*\* | -0.305\*\* |
|  | (0.330) | (0.0578) | (0.806) | (0.00699) | (0.0470) |
| PCT\_BRD\_WOMEN | 0.0437 | 0.182\* | 0.643\*\* | 0.0338 | 0.430\*\*\* |
|  | (0.892) | (0.0916) | (0.0100) | (0.862) | (0.00737) |
| AUDCOM\_SZ | 0.00954\*\*\* | 0.00407 | -0.000289 | 0.0174 | 0.00152 |
|  | (0.00784) | (0.695) | (0.984) | (0.313) | (0.741) |
| ESG | 1.207\* | 0.160 | -0.0280 | 0.222 | 0.425\*\* |
|  | (0.0800) | (0.188) | (0.958) | (0.211) | (0.0366) |
| ROA | -1.77e-05 | -5.83e-06 | -0.00601\*\* | -0.000236 | -0.00109 |
|  | (0.986) | (0.982) | (0.0121) | (0.488) | (0.653) |
| FNCL\_LVRG | 0.000509 | -0.00132 | -0.00316 | -0.000580 | -0.000710 |
|  | (0.859) | (0.120) | (0.203) | (0.537) | (0.532) |
| LN\_TRNOVR | 0.00258 | -0.00716 | 0.00907 | -0.00379 | 0.000169 |
|  | (0.927) | (0.385) | (0.634) | (0.834) | (0.988) |
| Constant | 0.383 | 0.284\*\*\* | 0.119 | 0.520\*\*\* | 0.169 |
|  | (0.166) | (5.28e-05) | (0.698) | (0.00166) | (0.227) |
|  |  |  |  |  |  |
| Observations | 73 | 679 | 218 | 443 | 386 |
| Year effect | Yes | Yes | Yes | Yes | Yes |
| R-Squared | 0.0206 | 0.0256 | 0.0890 | 0.0108 | 0.0408 |

*Robust pval in parentheses*

*\*\*\* p<0.01, \*\* p<0.05, \* p<0.1*

***CSR Net Tone [LM]****: Ratio of Net Tone of CSR Narratives, based on Loughran and Mcdonald (2011) – IF:* ***ESG Disclosure Score = 0-25%****, OR* ***ESG = 25-50%****, OR* ***ESG >50%****, OR IF* ***BRDSZ (Board Size) <=10****, OR* ***BRDSZ>10***.

***BRD\_SZ****: Board Size,* ***PCT\_INED****: Ratio of Independent Non-Executive Directors,* ***PCT\_BRD\_WOMEN****: Ratio of Women on Board,* ***AUDCOM\_SZ****: Audit Committee Size,* ***ESG****: ESG Disclosure,* ***ROA****: Return on Assets,* ***FNCL\_LVRG****: Financial Leverage,* ***LN\_TRNOVR****: Firm Size*

Table 6. Additional Analysis 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | (11) | (12) | (13) | (14) |
|  | CSR Net Tone [LM]IF (ESG<ESG\_AVG) | CSR Net Tone [LM]IF (ESG≥ESG\_AVG) | CSR Net Tone [LM]IF (WOMEN<25%) | CSR Net Tone [LM]IF (WOMEN ≥25%) |
| VARIABLES | RE | RE | RE | RE |
|  |  |  |  |  |
| BRD\_SZ | -0.000833 | -0.00414 | -0.00880 | -0.00425 |
|  | (0.843) | (0.356) | (0.241) | (0.568) |
| PCT\_INED | -0.231\*\*\* | -0.122 | -0.339\*\* | -0.201 |
|  | (0.00230) | (0.266) | (0.0139) | (0.222) |
| PCT\_BRD\_WOMEN | -0.00983 | 0.219\*\* | 0.295\* | 0.627\*\* |
|  | (0.908) | (0.0438) | (0.0952) | (0.0467) |
| AUDCOM\_SZ | 0.00165 | 0.0115\* | 0.0149 | 0.00169 |
|  | (0.520) | (0.0909) | (0.350) | (0.692) |
| ESG | 0.407\*\*\* | 0.149 | 0.147 | 0.636\*\*\* |
|  | (0.00124) | (0.337) | (0.376) | (0.00150) |
| ROA | -0.000163 | -0.00163 | -0.000862 | 0.000342 |
|  | (0.416) | (0.123) | (0.254) | (0.251) |
| FNCL\_LVRG | -0.000468 | -0.000601 | -0.00157 | -0.000929 |
|  | (0.541) | (0.243) | (0.359) | (0.215) |
| LN\_TRNOVR | -0.00991 | -8.00e-05 | -0.00506 | 0.00122 |
|  | (0.118) | (0.992) | (0.738) | (0.909) |
| Constant | 0.704\*\*\* | 0.589\*\*\* | 0.430\*\*\* | -0.0908 |
|  | (0) | (0) | (2.37e-05) | (0.601) |
| Observations | 455 | 374 | 525 | 301 |
| Year effect | Yes | Yes | Yes | Yes |
| R-Squared | 0.0309 | 0.0723 | 0.0187 | 0.0271 |

*Robust pval in parentheses*

*\*\*\* p<0.01, \*\* p<0.05, \* p<0.1*

***CSR Net Tone [LM]****: Ratio of Net Tone of CSR Narratives, based on Loughran and Mcdonald (2011) – IF:* ***ESG Disclosure Score <ESG\_AVG (Average ESG Score for all sample)****, OR* ***ESG ≥ESG\_AVG****, OR IF* ***WOMEN (Ratio of Women on Board)<25%****, OR* ***WOMEN≥25%***.

***BRD\_SZ****: Board Size,* ***PCT\_INED****: Ratio of Independent Non-Executive Directors,* ***PCT\_BRD\_WOMEN****: Ratio of Women on Board,* ***AUDCOM\_SZ****: Audit Committee Size,* ***ESG****: ESG Disclosure,* ***ROA****: Return on Assets,* ***FNCL\_LVRG****: Financial Leverage,* ***LN\_TRNOVR****: Firm Size*

1. CFIE is a research programme exploring accounting and financial market text using natural language processing (NLP) and corpus linguistics methods (El-Haj et al., 2019). [↑](#footnote-ref-1)