**Corporate Governance Pillars and Business Sustainability: Does Stakeholder Engagement Matter?**

**Abstract**

This study extends the existing work on corporate governance and business sustainability by exploring corporate governance pillars comprising board functions, structure, strategy, compensation and shareholder rights utilising data from listed S & P 500 firms. Using panel fixed effects and 2-Step GMM, we discovered that environmental, social and financial sustainability dimensions of the business sustainability are impacted positively by board functions and board structure. Our findings further reveal that low stakeholder engagement adversely impacts companies’ bottom line performance. The results are robust to outliers, model specifications, statistical estimations and alternative measures of performance. Most importantly, the inferences from the moderating result suggest stakeholder engagement as a strategic approach to improve performance. The study is relevant for business sustainability practitioners and policy makers in advancing principles of corporate governance to promote enhanced performance.

**Keywords**

Corporate governance; board functions; board structure; stakeholder engagement; business sustainability.

# **Introduction**

Global discourses and concerns about corporate scandals have recently increased the need to investigate corporate policies, strategies and practices (Hussain *et al*., 2018). These debates have resulted in apprehension about governance structures and the mechanisms under which companies are governed. Amidst these discussions of corporate scandals is the increased consideration of corporate social responsibility (CSR) in the quest to achieve ultimate performance. Since the Brundtland’s commission report in 1987, business sustainability has been regarded as a top priority topic for management to scrutinise. The relevance of business sustainability led to the development of the bottom-line dimensions comprising financial, social and environment sustainability performance – alternatively, the triple bottom line (3BL) as coined by Elkington (1997).

Both environmental performance (Hussain et al., 2018) and financial performance (Brammer and Pavelin, 2006) have been investigated extensively in existing literature compared to social sustainability. Organisations worldwide have now recognised that being socially responsible is not at variance with economic performance of the firm. Martinez-Ferrero and Frias-Aceituno (2014) demonstrated that social sustainability and firm profitability are not mutually exclusive. Organisations that create the conducive workplace environment, avoids discrimination and child labour, ensures minority and employee rights and engages in community development tends to enjoy loyalty from its stakeholders, improves its reputation and image as well as gains legitimacy for its operations and avoid revocation of its social license (Clarkson, 1995; Harjoto et al., 2015). Modern organisations are expected to provide quality products and services which meet the expectation of their customers, inspire their employees to improve performance, maintain good relationship with customers and suppliers and gain community’s support for business growth and success (Sen and Cowley, 2013). Thus, social responsibility and its sustenance are beneficial to the firm’s performance and long-term survival.

The premise of the 3BL or business sustainability is empirically evidenced (see Porter, 1991) as one that propels competitive advantage despite the voluntary nature of its adoption. As such, researchers have acknowledged the pertinence of investigating the effect of corporate governance (CG) on the dimensions of business sustainability performance (Hussain *et al*., 2018).

However, despite the number of studies exploring the link between corporate governance and business sustainability performance, most researchers (e.g. Brammer and Pavelin, 2006; Walls *et al*., 2012; Rodrigue *et al*., 2013) have only examined the relationship between corporate governance and environmental sustainability. Others (e.g. Hussain *et al*., 2018; Mallin *et al*., 2013) have specifically explored the effect of corporate governance on only social disclosure while some (e.g. Johnson and Greening, 1999; Williams, 2003) have solely focused on the governance and financial performance link. Only few studies have employed two or more sustainability dimensions to explore the relationship (Brammer and Pavelin, 2006; Rodrigue *et al*., 2013; Mallin *et al*., 2013; Hussain *et al*., 2018) however, they used single CG characteristics (i.e., independent board, board diversity, board size, CEO duality, among others) as proxies. For instance, the recent work by Hussain *et al*. (2018) on sustainability performance-CG nexus only assessed CEO duality, board size, independence and diversity. This lack of focus by extant researchers on the holistic picture of corporate governance has created a knowledge void and gap that needs to be explored further.

For businesses to perform well there is the need to pay attention to a wide range of stakeholders which extend beyond shareholders. The governance structure of the firm particularly, the board of directors are the centre of decision making in the corporation and the corporation’ survival and long term success hinge on the ability to create wealth, value and satisfaction among its stakeholders by shaping and influencing the extent of fulfilling social responsibilities of stakeholders (Hill and Jones, 1992; Clarkson, 1995; Jain and Jamali, 2016). The board is therefore a key player in ensuring positive stakeholder engagement (Galbreath, 2016) and meeting its social responsibility through short-term and long-term strategies which ensures business sustainability. Hence, in examining the corporate governance pillars and business sustainability link, it is of importance to provide a holistic insight into the impact of corporate governance pillars on each dimension of business sustainability. We therefore argue that the underlying pillars of corporate governance comprising board functions, structure, strategy, shareholder rights and compensation require a thorough investigation in the sustainability-CG nexus. We further assert that contribution to corporate governance literature should transcend theory (see Hussain *et al*., 2018) by empirically and methodologically examining relationships in depth.

Our methodology adds new empirical evidence to existing literature which corroborates the assertion of interlinks between the sustainability dimensions and the role of corporate governance. Beyond its empirical value, this research makes several important contributions to the literature. First, our study attempts to provide insight into how pooled CG variables affects the various dimensions of sustainability. Thus unlike previous studies which used single or some CG variables to examine how it affects sustainability, the current study uses much more broader classification of CG variables to examine how the pooled variables affect business sustainability thereby adding new empirical evidence to existing literature which corroborates the assertion of interlinkages between the sustainability dimensions and the role of CG. It also reinforces the conception that although all the single attributes of CG are relevant, when pooled together, a much stronger impact on sustainability occurs. This to the best of our knowledge has not been examined in the CG literature.

Second, by examining the moderating effects of stakeholder engagement on the association between CG and business sustainability, this study enhances knowledge of the conditions under which CG has more positive impact on business sustainability. CG practices demand engaging and satisfying various stakeholder groups of the corporation to ensure their support and going concern status of the firm since withdrawal of critical resources by stakeholders can course financial distress and eventual collapse (Clarkson, 1995). Yet CG studies have focus mostly on its effect on firm performance rather than the condition under which CG effect becomes more or less pronounced on business performance/sustainability.

Third, this study contributes to the two prominent theories in governance research – the stakeholder and agency theories. We highlight that both theories are complementary, as evidenced in our developed hypotheses, and acknowledge the lacuna of a single theory in fully explicating the hypothesised association (Walls *et al*., 2012; Hussain *et al*., 2018). From the stakeholder theory perspective, our study robustly examines the role of stakeholder engagement levels in the CG- sustainability relationship providing a key literature contribution and as a guide for future research that single theoretical framework may fall short in explaining the CG-business sustainability link.

The results of the study indicate that board functions and the board structure are very critical for improved performance. Also, shareholder right has a positive impact on environmental and social sustainability. Our results therefore imply that effective governance mechanisms should be put in place by companies to ensure that all aspects of the categories combine to contribute towards the achievement of their goals. From the stakeholder theory perspective, our study robustly examines the role of stakeholder engagement levels in the CG-sustainability relationship. The result indicates that high level of stakeholder engagement enhances CG pillars leading to improve performance of the firm. We further uncover that shareholders are not overly concerned with short term financial sustainability and would support long term financial sustainability initiatives from the board. This suggests that with the appropriate board structure and compensation, effective stakeholder engagement can yield better support for environmental sustainability from shareholders.

The remainder of the paper is organised into the following: Section 2 discusses the theoretical framework, literature review and the derived hypotheses; Section 3 presents the methodology; Section 4 provides the empirical results and discussion; Section 5 presents the conclusion, including limitations and directions for future research.

# **Theoretical Background and Hypotheses Development**

Jensen and Meckling (1976) and Freeman (1984) are recognised as the respective pioneers of theoretical arguments from agency and stakeholder perspectives in corporate governance-firm performance scholarship. Essentially, agency theory underscores the conflict between managers (agents) and shareholders (principals) which stems from contrasting interests and possible information asymmetry (Hussain *et al*., 2018). It is, however, contended (see Haniffa and Cooke, 2002) that, with effective corporate governance, these challenges can be dealt with. That being said, it is relevant for shareholders to monitor managers to ensure their interests are well aligned (Halme and Huse, 1997). Thus, the existence of an effective board could curb possible managers’ opportunism, reduce agency problems and increase managers’ accountability (Kolk, 2008; Buniamin *et al*., 2011; Ienciu *et al*., 2012).

Despite the agency position regarding the importance of agency theory in the CG-business sustainability relationship, it is postulated (see Hussain *et al*., 2018) to be insufficient in thoroughly explaining the relationship. Walls *et al*. (2012) strongly argue that one theory is inadequate in explaining the integration of social objectives and targets in exploring corporate strategic goals. For instance, the underlying reasons why organisations utilise CSR committees is not implicitly clear when assessed solely from an agency theory viewpoint. Thus, further explanation and framework insight into CG-sustainability relationships is worth exploring (Spitzeck, 2009; Hussain *et al*., 2018). As such, many researchers (Gul and Leung, 2004; Fodio and Oba, 2012; Amran *et al*., 2014; Post *et al*., 2014) employ more than one theory in their CG-sustainability studies. One of the generally accepted theories used in elucidating the said relationship is the stakeholder theory. In fact, stakeholder theory has gained massive attention from researchers due to its focus on preventing managerial opportunism and conflicting interests (Michelon and Parbonetti, 2012) while highlighting the needs of stakeholders (Freeman, 1984; Hill and Jones, 1992; Donaldson and Preston, 1995).

Utilising stakeholder theory together with agency theory ultimately provides the theoretical platform to explain the relationship from all possible perspectives due to the recent increase in stakeholder pressure on sustainable businesses. Furthermore, stakeholders have increased their need for information transparency on organisational activities, thus making stakeholder theory the appropriate lens with which to view the CG-sustainability link (Haniffa and Cooke, 2005; Fernandez-Feijoo *et al*., 2012). In the same vein, because directors are primary stakeholders, they are responsible for aligning managers and shareholders’ interests as well as the needs of other stakeholder groups (Hill and Jones, 1992). By doing so, there is great possibility for effective governance while forging a strengthened relationship between firms and stakeholders (Michelon and Parbonetti, 2012). Our theoretical framework is therefore developed on the premise that directors are responsible for developing activities from both agency and stakeholder perspectives in the CG-sustainability relationship (Hussain *et al*., 2018).

## **2.1 Hypotheses Development**

### *2.1.1 Board Functions and Sustainability*

The functions of the board of directors are stressed (Eng and Mak, 2003; Allegrini and Greco, 2013) as being imperative to the implementation of corporate decisions and activities. It is apparent that directors contribute greatly to firms’ performance by carrying out mandated responsibilities (see Ong and Lee, 2000; Kao and Cheng, 2004) required by shareholders. From a legal perspective, directors are obliged to manage and monitor managers’ roles, among other duties. Technically, the board controls the company’s activities while ensuring that the overarching aims are achieved. Due to the relevance of board functions (*BF*s), researchers have attempted to incorporate some of their elements into corporate governance and performance studies.

The environmental and financial sustainability dimension have received considerable attention from researchers (e.g Sarkis and Zhu, 2018; Gliedt *et al.,* 2018) and this prompts our substantial attention to social sustainability. Social sustainability encompasses promotion of wellbeing by providing what current and future generations need to live in healthy communities (Rogers *et al.*, 2012). Social sustainability (i.e. a well-functioning society) is relevant to this study because it is a prerequisite to meet the new challenges of various innovations geared towards environmental and financial sustainability (Rogers *et al.,* 2012). This should therefore be impacted by board function.

Empirical literature has, however, provided contradictory results on the impact of board functions on business sustainability (Said *et al*., 2009; Walls *et al*., 2012; Zagorchev and Gao, 2015). Some researchers (Eng and Mak, 2003; Naciti, 2019) found a negative effect of greater board independence on social performance, while others (e.g. McKendall *et al*., 1999; Cormier *et al*., 2011; Allegrini and Greco, 2013) established an insignificant association between board independence and sustainability. However, despite these empirical findings, none denies the practical and theoretical fact that board function is an integral part of business sustainability. For instance, Zagorchev and Gao (2015) revealed that board function, specifically board independence, leads to transparency and firm value enhancement. Firms respond to sustainability-related issues raised by stakeholders. Similarly, Burke et al. (2019) reveal a positive relationship between board-level commitment and corporate social performance. That is commitment at the board level to establish large and more independent committees with frequent meetings lead to more effective social sustainability performance.

Other researchers (e.g. Laksmana, 2008) explored the relevance of board meetings as a function of the board on firm performance and asserted that such meetings are symbols of inefficacy on the part of directors, which also limits their performance. In contrast, Lipton and Lorsch (1992) contend that frequent meetings rather ensure board effectiveness through improved supervision and transparency. Similarly, a study by Ricart *et al*. (2005) revealed a positive effect of board meetings on sustainability performance. Additionally, Bliss and Balachandran (2003) highlighted that board function in the form of committees is relevant and significant for sustainability disclosure and performance. These empirical findings indicate that elements of *BF* are imperative to business sustainability. We therefore hypothesise that:

**H1a:** *There is a significantly positive impact of board functions on environmental sustainability performance*

**H1b:** *There is a significantly positive impact of board functions on social sustainability performance*

**H1c:** *There is a significantly positive impact of board functions on financial sustainability performance*

### *2.1.2 Board Structure and Sustainability*

Existing studies exploring board structure (*BST*) have focused on individual attributes such as board size, board diversity, and independent board members, among others, with inconsistent results (Husted *et al*., 2019). For instance, Pathan and Faff (2013) found empirical evidence that board size negatively influences corporate financial performance due to the financial costs associated with large boards’ long meetings. Furthermore, they asserted that large boards have a high tendency of encountering conflicts of interest between shareholders and executives. Large boards could also have inefficient governance systems in monitoring, communicating and decision making (Prado-Lorenzo and Garcia-Sanchez, 2010). However, the group dynamics of large boards provide the opportunity for the triple bottom line to be thoroughly analysed. Similarly, Husted *et al*. (2019) argue that large boards have a positive impact on sustainability disclosure due to their broader perspectives and diversity of skills.

In addition, agency theorists argue that CEOs with dual roles directly or indirectly affect the board’s ability to work in the shareholders’ interests, thus creating agency problems (Rechner and Dalton, 1991). Though a few authors such as Arena *et al*. (2014), Jizi *et al*. (2014) and Mallin *et al*. (2013) have found a positive relationship between CEO duality and environmental reporting and performance, conflicts of interest in a CEO’s dual role cannot be overlooked. In fact, according to Rechner and Dalton (1991), the independence, transparency and accountability of the board decreases massively when the CEO has a dual responsibility (Michelon and Parbonetti, 2012). A plethora of studies (Liao *et al*., 2014; Michelon and Parnonetti, 2012; Buniamin *et al*., 2012; Barako *et al*., 2006; Haniffa and Cooke, 2002) have found a negative relationship between CEO duality and performance.

Other researchers investigating *BST* also examined the influence of board diversity (Galbreath, 2011) on firm performance. It is theorised that the presence of women on corporate boards has a positive impact on sustainability due to the different perspectives they present to enrich decision making (Carter *et al*., 2003). The interpretation of such an assertion is based on the premise that women are usually sensitive towards philanthropic initiatives and CSR in general due to their prevailing background in the humanities (Williams, 2003). From a stakeholder theory perspective, Orji (2010) postulates that women are more attracted to social issues than men. Daily and Dalton (2003) further suggest that women are likely to push for effective stakeholder management on the board and promote board effectiveness. Based on this empirical evidence regarding board structure elements, the following hypotheses are advanced:

**H2a**: *There is a significantly positive impact of board structure on environmental sustainability performance*

**H2b:** *There is a significantly positive impact of board structure on social sustainability performance*

**H2c:** *There is a significantly positive impact of board structure on financial sustainability performance*

### *2.1.3 Board Compensation and Sustainability*

The incorporation of sustainability performance into executive compensation schemes has become a major stakeholders’ advocacy for directors. Traditionally, scholarly research indicated that providing financial incentives to executives was imperative to ensure the alignment of principal-agent interests (Makri *et al*., 2006; Bonner and Sprinkle, 2002). As such, many original compensation packages comprise four main elements of basic salary, bonus, stock options and long-term incentive plans (Murphy, 1999). Nevertheless, the recent call for sustainability integration into executive compensation schemes has attracted researchers (Berrone and Gomez-Mejia, 2009a; Berrone and Gomez-Mejia, 2009b; Russo and Harrison, 2005) to investigate its benefit to the bottom-line performance.

Studies investigating the inclusion of sustainability performance into executive compensation have yielded contrasting results. For instance, Cai *et al*. (2011) and Coombs and Gilley (2005) found a negative relationship between firms’ environmental reputation and executive compensation. On the other hand, studies by Callan and Thomas (2011) and Mahoney and Thorne (2005) disaggregated sustainability performance into strengths and weaknesses and discovered that a positive relationship exists between executive compensation and sustainability performance strengths using long-term incentives, bonuses and stock options. They argued that capital expenditure would increase in the short term though, in the long term, financial benefits could be realised.

Some studies (Cordeiro and Sarkis, 2008; Eccles *et al*., 2011) also investigated how sustainability goals moderate the relationship between executive compensation and sustainability performance and found a positive effect. From an agency theory perspective (Murphy, 1999), one can reason that such an initiative in executive compensation would critically align the interests of both executives and shareholders towards the overarching corporate goals. Russo and Harrison (2005) also investigated the influence of sustainability targets on sustainability performance, specifically environmental sustainability, and discovered that, indeed, linking sustainability and compensation has a greater tendency to improve performance. Though traditional financial incentives are relevant, there is still the need to investigate further how compensation affects the sustainability bottom line holistically. We therefore hypothesise that:

**H3a:** *There is a significantly negative impact of board compensation on environmental sustainability performance*

**H3b:***There is a significantly negative impact of board compensation on social sustainability performance*

**H3c:** *There is a significantly positive impact of board compensation on financial sustainability performance*

### *2.1.4 Board Strategy and Sustainability*

According to Miles *et al*. (1978), advancing corporate strategies proactively is paramount to improving corporate reputation. Directors are responsible for the authorisation and development of such proactive strategies (Kreiken, 1985). Directors scan the environment for information using available resources to formulate strategies regarding competition and industrial changes. It is perceived that companies with enhanced long-term strategies perform better than those without (Lux *et al*., 2011). In order to develop a strong competitive advantage, superior organisational strategies, especially those relating to corporate social responsibilities, have to be advanced (Al-Tuwaijri *et al*., 2004). Two key strategies that firms have recently initiated are CSR committees and sustainability reporting following global reporting initiative (GRI) guidelines.

It is proposed that the existence of a CSR committee is a symbol of the board’s commitment and orientation towards corporate sustainable development (Hussain *et al*., 2018; Ricart *et al*., 2005). The existence of the committee is further interpreted as resource for managing stakeholders and fostering sustainable practices strategically. Though there is limited empirical evidence and only insignificant findings on the influence of CSR committees on sustainability performance, existing theoretical underpinnings support the assertion of a positive impact (Rodrigue *et al*., 2013; McKendall *et al*., 1999). For example, a study on European and US companies by Michelon and Parbonetti (2012) resulted in a positive but insignificant relationship between sustainability committee and sustainability disclosure. A similar result was also found by Rupley *et al*. (2012) on environmental disclosure quality and sustainability committee. Other studies (Amran *et al*., 2014; Liao *et al*., 2014; Walls *et al*., 2012; Spitzeck, 2009) further confirm the significant positive influence of sustainability committees on sustainability practices and disclosure in the long term.

In the same vein, most companies in the USA follow the GRI guidelines (Izquierdo and Granana, 2005) as a strategic commitment to sustainability. The GRI aims to improve the thoroughness, accuracy and quality of sustainability reports to cover extensive sustainability activities. Fundamentally, it is based on the application and implementation of the triple bottom line to promote comparison and verifiability. Companies using the GRI receive validation as well as social legitimacy from stakeholders, which emphasises the quest for sustainable development (Izquierdo and Granana, 2005). This analysis of board strategy reinforces its relevance and benefit in environmental and social sustainability performance. Therefore, we hypothesise the following:

**H4a:** *There is a significantly positive impact of board strategy on environmental sustainability performance*

**H4b***: There is a significantly positive impact of board strategy on social sustainability performance*

**H4c:** *There is a significantly negative impact of board strategy on financial sustainability performance*

### *2.1.5 Board Shareholder Rights and Sustainability*

Shareholder rights represent the rights of stockholders to vote and exercise control over the company’s assets, effect ownership structure or remove ineffective management (Jiang and Anandarajan, 2009; Goompers *et al*., 2003). However, weaker shareholder rights imply a high level of information asymmetry and weak external governance mechanism. This could reduce accountability and transparency on the part of managers. Conversely, greater shareholder rights empower shareholders to implement monitoring mechanisms meticulously, thus reducing agency risks and costs (Gompers *et al*., 2003). Gompers *et al*. (2003) found that the market values greater shareholder empowerment and rights, thus leading to better firm value, and improvement in sales value and profit as well as returns. Likewise, La Porta *et al*. (2002) found empirical evidence that protection of shareholder rights leads to higher valuation values.

Though enforcing shareholder rights does not necessarily imply power over managers, it highlights the need for a power balance to avoid agency problems. However, agency problems arise because managers tend to develop measures to restrict shareholders’ rights using takeover defence mechanisms. These mechanisms limit shareholders’ involvement in governance participation and advancing disciplinary actions against managers in the case of misappropriations. For instance, the use of defensive measures like the golden parachute removes shareholders’ right to relieve management of their duties without extra costs being incurred (Gompers *et al*., 2003). This increases managers’ desire and ability to promote their private interests (Shleifer and Vishny, 1997).

According to Chugh *et al*. (2010), shareholder rights have a greater impact on overall firm value and therefore should be protected (Mallin and Melis, 2010) to avoid unpleasant resistance and activism from the shareholders (Gillan and Starks, 2007). Shareholders’ vote is one of the most powerful activisms means to engage with directors through exertion of pressure (Ertimur *et al*., 2010; Thomas and Cotter, 2007). In the US, for instance, directors who ignore shareholders’ vote risk the threat of being re-elected and directorship. Hence, shareholders exercising their rights helps reduce agency costs and increase directors’ accountability (Gompers *et al*., 2003). Though the market’s reaction to shareholder rights has increased, the impact on sustainability is not empirically evidenced and thus requires further investigation. We argue that efforts by shareholders to ensure social and environmental sustainability might rather have an adverse impact. We therefore hypothesise that:

**H5a:** *There is a significantly negative impact of board shareholder rights on environmental sustainability performance*

**H5b:** *There is a significantly negative impact of board shareholder rights on social sustainability performance*

**H5c:** *There is a significantly positive impact of board shareholder rights on financial sustainability performance*

## **2.2 The Moderating Role of Stakeholder Engagement**

Greenwood (2007) defines stakeholder engagement as the practices undertaken by organisations to involve stakeholders in their organisational activities. It has received heightened attention as a result of increased pressure by stakeholders for transparency and inclusiveness. To promote such inclusiveness and engagement in sustainability, researchers (see Amor-Esteban *et al*., 2018) have developed a CSR index of practices to stimulate stakeholder engagement. Through appropriate integration of relevant stakeholders in the value creation process, there is a greater possibility that sustainability performance will improve (Markovic and Bagherzadeh, 2018). The role of stakeholders varies depending on the dimension of sustainability considered. For environmental sustainability, stakeholders affected by the end product and those involved in the creation process should be engaged with whenever necessary. Using waste management as an example, it is proposed that a collaboration is established with households in the collection and separation of waste to lead to waste reduction. Such cooporation or engagement could stem from financially or non-financially related incentives (Salhofer *et al*., 2008). Furthermore, it is asserted (Greenwood, 2007) that organisations which engage with their stakeholders often are more accountable and act responsibly. Stakeholder engagement may exist in the form of public relations, supplier relations, human resource management, and customer service. However, Frooman (1999) contends that stakeholder engagement is under-theorised due to the focus on stakeholder partnership.

Drawing from the model developed by Greenwood (2007), stakeholder engagement intensity could be either low or high. Low stakeholder engagement is observed when the organisation indicates minimal interest in stakeholder engagement yet does interact with them according to legal requirements. This form of engagement is common in outsourcing services such as human resources and customer support where engagement is a mere economic exchange. The issue of paternalism is very common with low engagement where organisations act in the best interests of stakeholders, yet no form of engagement is established despite its relevance (Noland and Phillips, 2010).

High stakeholder engagement, on the other hand, is where the company balances legitimacy with justifiable moral principles (Freeman and Evan, 1990) to result in corporate responsibility. High stakeholder engagement stems from companies’ strategic responsibility to address stakeholders while achieving their organisational aims. Thus, basically, the company acts in the best interests of stakeholders as well as its own long-term interests. This is also to avoid any accusation of immoral and irresponsible behaviour from stakeholders. On the basis of this analysis, we propose the following:

**H6*:*** *The positive effect of CG on business sustainability will be more positive for firms pursuing high stakeholder engagement than firms that pursue low stakeholder engagement*

# **Research Method**

## **3.1 Sample Design and Variable Measurement**

A sample of the unbalanced data of 278 US companies listed on the S & P 500 stock exchange from 2002 to 2017 is utilised in this study. We selected the period from 2002 to capture the changes made in corporate governance practices after the enforcement of the Sarbanes Oxley Act (SOX) in that year. As well as excluding all firms in the financial sector based on the special regulations guiding their activities and reporting (see Chithambo and Tauringana, 2014), two primary exclusion criteria were additionally employed. First, we excluded companies without data on the five pillars of corporate governance. These five pillars of CG have been developed by ASSET4 ESG to provide an all-inclusive framework of CG practices across companies. We further excluded firms and years of observation without data on the dependent variables – social, financial and environmental. The financial sustainability data were sourced from DataStream whereas the social and environmental sustainability data were collected from ASSET4 ESG. Both DataStream and ASSET4 ESG have been used extensively in academic literature and studies (see Shaukat *et al*., 2016; Cheng *et al*., 2014; Ioannou and Serfeim, 2012) due to the quality and reliability of their data.

In order to obtain the different pillars of CG scores, ASSET4 ESG extracted values from all the metrics before applying relevant numeric values and calculating the percentile score for the indicators. For instance, with qualitative data using Boolean values “yes” and “no”, the numeric values will be “1” and “0.5”. Quantitative data, on the other hand, are only allocated a numeric value if the company reports any. Ranking is adopted in the percentile score, which renders the data to a greater extent insensitive to outliers. To obtain the percentile score, the below formula is used:

Score = worst value firms + (same value firms ÷2) / companies with a value Eqn (1)

Each score is then equally weighted using the sum of all the indicators of the industry before normalisation and benchmarking are applied. Appendix 1 shows all the indicators used in measuring the category scores of CG as adopted in this paper. The normalised weights exclude indicators with no available data to ensure accuracy. Thomson Reuters Business Classification (TRBC) industry group is used as the benchmark due to its wider coverage across 130 countries and industrial sections. The detailed measurements of all the variables used in our study are presented in Table 2 below.

**[**INSERT TABLE 1]

## **3.2 Empirical Model**

Our primary aim is to explore the effects of CG pillars on the three dimensions of 3BL over the given time period. As such, the following regression model estimation is applied to the panel data:

$$Environmental Sustainability = α +β+BF\_{it}+BST\_{it}+BC\_{it}+BSR\_{it}+BSTR\_{it}+γControls\_{it}+μ\_{it} Eqn (2) $$

$$Social Sustainability = α +β+BF\_{it}+BST\_{it}+BC\_{it}+BSR\_{it}+BSTR\_{it}+γControls\_{it}+μ\_{it} Eqn (3) $$

$$Financial Sustainability = α +β+BF\_{it}+BST\_{it}+BC\_{it}+BSR\_{it}+BSTR\_{it}+γControls\_{it}+μ\_{it} Eqn (4) $$

Where *i* denotes the firm dimension and *t* capturesthe time element. Environmental, Social and Financial Sustainability are the three components of the 3BL. Our CG variables are *BF*, *BST*, *BC*, *BSR* and *BSTR*, which represent board functions, board structure, board compensation, board shareholder rights and board strategy. Following the work of Hussain et al. (2018), we control for industry effect, allocating the value 1 for environmentally sensitive firms and 0 otherwise. We also control for slack resources, firm size, leverage, revenue growth, business ethics, community involvement, capital intensity, and research and development in the distinct equations. To select the most suitable panel data model, we apply the Hausman test (Hausman, 1978) on both fixed and random effect models. The fixed effect model was found to fit all the three models which will estimate the within effect and deal with the issue of heterogeneity (Clark and Linzer, 2012).

# **4. Empirical Results and Discussion**

The descriptive statistics (i.e., mean, standard deviation, minimum and maximum values) are presented in Table 2. Among the dependent variables, social sustainability performance score recorded the lowest minimum value of 4% and the highest maximum of 99%, with a mean of 61% and standard deviation of 28%. Environmental sustainability, on the other hand, had a minimum of 8% and 97% as the maximum, deviating by 32% with an average of approximately 57%. From the averages of both social and environmental sustainability, it can be deduced that most firms performed considerably well, above 50%.

[INSERT TABLE 2]

From the Pearson’s correlation in Table 3, there is a significant positive relationship between Tobin’s Q and *BC*,while the remaining CG variables yielded a negative correlation. Both social and environmental sustainability recorded a significantly positive correlation with *BF*, *BST*, *BSR* and *BSTR*. We found a strong correlation between these two dimensions of sustainability and *BSTR* of 74% and 81% respectively, whereas the lowest recorded correlation was with *BF*, at 5% and 6% respectively. We also observed a significant negative association between Tobin’s Q and *BSR*. A similar correlation was noted between. Tobin’s Q and *BSTR*, which calls for further probing with other statistical measures.

[INSERT TABLE 3]

## **4.1 Regression Results**

### *4.1.1 CG Pillars and Business Sustainability*

We present the panel fixed effects regression results of five CG pillars and the three dimensions of sustainability in this section. Stepwise regression is employed to deal with potential issues of multicollinearity. In Tables 4, 5 and 6, we show the stepwise regression results of the relationship between the various pillars of corporate governance and environmental, social and financial sustainability respectively. Section 4.2 presents a detailed discussion of the findings with literature-based arguments.

[INSERT TABLE 4]

*Board function and business sustainability*

First, in support of our *hypothesis 1(a,b,c)* we found a significantly positive relationship among board functions and environmental performance (β=0.111), social performance (β=0.052) and financial performance (β=0.079) in models 1 of Tables 4, 5 and 6. This finding affirms the assumption that the extensive functions of the board indeed consider all three dimensions of sustainability as relevant performance indicators. The policy implication of our findings is that firms with well instituted board functions are more likely to improve their overall performance. It can thus be depicted that a 1% increase in board function effectiveness could be associated with a 11% increase in environmental performance, followed by a 7.9% increase in firm value and 5.2% in social performance. The results are consistent in the stepwise regressions models 2 across the tables.

*Board structure and business sustainability*

 From model 1 on table 4, our findings are contrary to the hypothesised positive relationship *(H2a).* It was discovered that although the impact of board structure on environmental sustainability was positive, it was however, statistically insignificant and therefore we reject *H2a*. Similarly, no statistical evidence was found in support of our hypothesised (*H2c*) impact of board structure on financial performance as shown on Table 6. On the other hand, results from both models 1 and 3 on table 5 show a significantly positive (β=0.108 and β=0.159) effect of board structure on social sustainability performance, thus, we accept *H2b*. The results indicate that for a percentage improvement in board structure, firms’ social performance can increase between 10% and 15% approximately. Impliedly, a well-developed board structure is likely to focus inclusiveness among members, employees, societies and stakeholders.

*Business compensation and business sustainability*

We found no statistical evidence in support of *Hypotheses 3a and 3b* that there is significant relationship with the exception of *H3c* where we found a significant effect (β=0.322) of board compensation on Tobin’s Q as shown in Table 6 models 1 and 4 and therefore accept *H3c* and reject *H3a* and *H3b*. The results indicate that companies with appropriately developed board compensation policies tend to perform better financially. In fact, the result show that about 32% increase in financial performance can be associated with a 1% increase in board compensation management. On the contrary, we found no significant relationship when we used 2SLS to account for endogeneity issues in the equation as shown in models 7, 8 and 9. Despite the hypothesised negative impact of board compensation (*H3b*) on social performance, we found a significantly positive relationship which implies that the companies with enhanced board compensation policies have a high tendency of promoting social related issues.

**[INSERT TABLE 5]**

**[INSERT TABLE 6]**

*Board strategy and business sustainability*

From Tables 4 and 5, we found empirical evidence to accept *hypotheses 4a* and *4b* that there is a positive relationship between board strategy and environmental sustainability as well as social sustainability. Specifically, the significant coefficient (0.442) implies that advancing corporate strategies can improve firms’ environmental performance scores by 44% in Table 4 model 1. Similarly, with coefficient (0.344) in Table 5 model 1, social performance can be increased by 34% when firms proactively institute corporate strategies. The relationship found between board strategy and financial performance was on the contrary positive but statistically insignificant, therefore we reject *hypothesis 4c*.

*Board shareholder rights and business sustainability*

From model 1 on Tables 4, 5 and 6, we fail to accept *Hypothesis 5* (*a, b, c*) in relation to board shareholder rights and sustainability. While we hypothesised a negative effect of shareholder rights on environmental sustainability, we found a significantly positive effect (β=0.032) in *H5a*. Similarly, while rejecting *H5b*, we discovered a significant impact (β=0.066) of shareholder rights on social sustainability performance as shown in Table 6 model 1. Interestingly, we found no significant positive impact of shareholder rights on financial performance. The results show a negative insignificant relationship instead and therefore we reject *H5c*. We can argue from these contradictory findings that improving shareholder rights as opposed to popular opinions could shift the focus of companies on social and environmental performance and not only financial performance (Jiao, 2010).

### *4.1.2 Moderation Test*

In Table 7, we examine the moderating role of stakeholder engagement on the relationship between CG and environmental and social sustainability. In order to test this hypothesis, we grouped stakeholder engagement into low and high levels of engagement. In line with previous studies (Herzallah *et al.,* 2017), stakeholder engagement scores above the median value is classified as high engagement whereas those below the median indicates low level of engagement. The two levels of engagement were used in order to capture the distinct associations established in each instance. Models 1 to 5 show the results of the environmental sustainability model. As expected, high stakeholder engagement was statistically significant and positively associated with all the five CG pillars. Low stakeholder engagement, on the other hand, recorded a negatively insignificant relationship across the variables. We also discovered that *BC (*Model 2) and *BST* (Model 3) produced an insignificant relationship with environmental sustainability; however, when interacted with stakeholder engagement, a significant connection was revealed, thus we accept hypothesis 6.

**[INSERT TABLE 7]**

**[INSERT TABLE 8]**

Models 6 to 10 present the outcomes of the stakeholder engagement moderated social sustainability and CG relationship. Initially, *BF* was not significantly related to social sustainability on its own but, upon the interaction of stakeholder engagement intensity levels, we discovered that both low and high were statistically significant with a positive impact on the relationship. This infers that the social sustainability performance of companies improves upon stakeholder engagement. *BST* interaction with low stakeholder engagement interaction resulted in a negative impact on social sustainability. This could imply that stakeholder engagement should be integrated into the core of business models and activities.

A similar moderation effect was studied in the financial sustainability performance shown in Table 8. Our analysis reveals that high stakeholder engagement in each model yielded positively significant results, supporting our assertion of its relevance. Apart from *BC*, the remaining corporate governance variables reacted positively to financial performance when interacted with low stakeholder engagement. Impliedly, the presence of stakeholder engagement, no matter the intensity, could still lead to an improved performance.

*4.1.3 Endogeneity and Robustness Tests*

As emphasised by Schultz et al (2010), the presence of endogeneity in a fixed effect panel estimation will lead to biased parameter estimates. Therefore, it is imperative to investigate the endogeneity in the CG and sustainability relationship prior to further specification. The Durbin-Wu-Hausman (DWH) test (Durbin, 1954; Wu, 1973; Hausman, 1978) of endogeneity was conducted on the sustainability models. It was discovered that no endogeneity issues were present in the environmental and social sustainability estimation models. However, with a P-value of 0.0000 and DWH test statistic of 46.7182\*\*\*, we found endogeneity to be a significant issue in the Tobin’s Q-CG relationship. As such, we employed 2-step Generalised Methods of Moments (GMM) adopted by Arelano and Bover (1995) to account for the issue of endogeneity, as shown in Table 6 (models 7 and 8). *TobinsQt-1* indicates one lag of the Tobin’s Q and *TobinsQt-2* represents the second lag of the dependent variable Tobin’s Q (Ullah et al., 2018).

In this approach, the explanatory variables are treated as endogenous while orthogonally using their lagged values as instruments. In order to check the reliability of GMM estimates, we use the Hansen’s test and serial correlation error term test by Arellano and Bond (1991). The diagnostic tests in Model 7 show that the model is not fitted, showing statistical significance for both *AR*(1) and *AR*(2), though the expected result for *AR*(2) is statistically insignificant. In order to ensure a well-fitted model, we included the second lagged dependent variable (i.e., *TobinsQt-2)* to capture the variable’s richer dynamics, as adopted by Baltagi et al. (2009). In Model 8, with both *TobinsQt-1* and *TobinsQt-2*, we found that *AR*(1) as expected was statistically significant and *AR*(2) statistically insignificant. Also, the Hansen J-Statistics of over-identification restrictions indicated that the instruments in the equation are valid and applicable in the 2-step GMM. With regard to *BF* and *BSR*,the estimated coefficients were positive and statistically significant as hypothesised, though the other CG variables were insignificant. For further robustness checks, we used a different proxy for financial sustainability, Returns on Assets (ROA), and found that of all the CG variables, only *BSR* showed a positive influence on financial performance.

## **4.2 Discussion**

The concept of business sustainability is of key relevance to organisations’ survival and overall performance. However, studies exploring how to achieve high performance through sustainability and corporate governance are limited to the individual elements. Thus, this study examines the influence of the holistic pillars of corporate governance instead of the individual elements in relation to environmental, social and financial sustainability. We further address a gap in the literature by exploring the influence of stakeholder engagement intensity on the relationship between 3BL and CG.

By utilising corporate governance pillars, we present results which stimulate further deliberation and theoretical discussions. Similar to Ong and Lee (2000) and Dunn and Sainty (2009), we found that, when the various board functions are upheld, firm performance – in this case, environmental, social and financial sustainability – improves tremendously. This suggests that board functions such as policy development, implementation, monitoring, committees and compliance, among others, are all necessary to promote the triple bottom line performance. The observed importance of board functions provides empirical support to existing arguments presented by researchers (Said *et al*., 2009; Zagorchev and Gao, 2015) who used the individual characteristics enveloped in the overall board functions index.

Drawing from agency theory, it can be argued that a positive effect of board function on social sustainability suggest that effective monitoring of agents occur can reduce the agency problem and also able to offer more stringent enforcement of ethical conduct which minimizes unwanted societal behaviours such as subversion of shareholders’ funds by management (Galbreath, 2012). Boards through its committees such as CSR committees are able to identify and support the local community’s needs which impacts positively on the organisation’s legitimacy and social license. A well-balanced board are high problem solving and complex social issues such as poverty, poor working environment are better handled (Robinson and Dechant, 1997). In dealing with social issues which are very important the board, we can infer from our results that through committees, companies can fashion out strategies with allocated resources which are subsequently implemented with deliberate intention of impacting on the firm performance socially which is measured against planned goals. We further assert that the positive impact of board compensation on sustainability could be associated with the fact that some executive remunerations are linked with firm performance as therefore directors may use social and environmental sustainability strategically as investment tool to enhance the value of their benefit from the firm (Su and Sauerwald, 2015). Issues of human rights, good working conditions and employee loyalty are of a great concern to shareholders and shareholders will use their rights as stated by the governance rules to enforce these through voting and advocacy as it has indirect link with shareholder wealth.

Due to the established perception that shareholders are more interested in firm financial performance, it was thought provoking to record a positive impact of board shareholder rights on environmental and social sustainability. Based on this, we assert that, contrary to claims by other researchers (Lhuillery, 2011; Kim *et al*., 2007), shareholders’ interests extend beyond their financial interest in the environmental and social sustainability of their aligned companies. From an agency theory perspective, one could also posit that shareholders perceive the direct and indirect effect of negative social and environmental sustainability on the firm’s financial performance. Consistent with arguments presented by Ntim and Soobaroyen (2013) and Ibrahim and Angelidis (1994), we equally found that board structure elements enhance business sustainability. We emphasise that firms with effective and improved board structure, board compensation and board strategy tend to generally experience a positive impact on their bottom line

As a response to the call by Galbreath (2011) and Jo and Harjoto (2011), we investigated the impact of stakeholder engagement intensity on business sustainability performance. It was revealed that high stakeholder engagement alongside enhanced corporate governance pillars (i.e., board functions, board structure, board compensation and board shareholder rights) leads to better environmental sustainability. On the other hand, we found that, though high stakeholder engagement is relevant to board strategy, it yielded a negative impact on sustainability. This could be because not all the stakeholder groups are aware of such strategies, especially if those strategies are not deeply rooted in the core business activities. For instance, it is very likely for employees (i.e., internal stakeholders) to be aware of their own company’s strategies to promote sustainable activities whereas external stakeholder group like Non-Governmental Organisations (NGOs) may be ignorant of such strategies.

Our findings further suggest that, despite the supposed shared benefits of stakeholder engagement (Phillips, 1997; Greenwood, 2007), the intensity level determines its advantages to companies. For instance, we discovered that low stakeholder engagement levels do have negative repercussions across all the dimensions of sustainability. Interestingly, in cases where the low engagement levels were recorded as negative, firms with no stakeholder engagement actually recorded a positive and significant relationship. We suggest that stakeholders would rather favour no engagement than to be occasionally involved when it is suitable for the companies. In fact, some schools of thought believe that low engagement could be a mere corporate political move (Dawkins, 2015). Thus, to boost societal legitimacy and enhance corporate performance, we advocate that companies make a deliberate attempt to collaborate and engage with their diverse stakeholder groups. By incorporating that into their core organisational values, firms could build commitment and trusts with stakeholders (Seow *et al*., 2006).

# **Conclusion, Limitations and Future Research**

There have been some studies on the impact of CG on corporate sustainability, yet in most instances they are limited to a particular CG characteristic and its effect on one dimension of corporate sustainability (Russo and Harrison, 2005; Cordeiro and Sarkis, 2008; Eccles *et al*., 2011). The vast majority focus on CG characteristics and corporate financial performance (Kang and Shivdasani, 1995; Carter *et al*., 2003; Zagorchev and Gao, 2015) or environmental disclosure (Al-Arussi *et al*., 2009), with less attention paid to the social aspect of sustainability (Lim *et al*., 2007). The focus of extant studies on CG characteristics and one dimension of sustainability has also resulted in studies being mostly underpinned by a single theory. Deegan (2002) noted that CG and sustainability studies have applied socio-political and economic theories to explain any existing link. However, the issue of how corporations are governed and how social business behaviours are effectively influenced by the various governance structures is a complex one (Wall *et al*., 2012).

Moreover, corporate sustainability issues contain elements of both accountability and public accountability (see Coy *et al*., 2014). As a result of the public accountability element, CG measures relating to sustainability must take into consideration the multiple expectations of various stakeholders and implement policies to align the corporation’s activities with these expectations (Donaldson and Preston, 1995). This implies that inward-looking economic theories such as the dominant agency theory will fall short in explaining the link between CG-Sustainability. Therefore, a multi-theoretical foundation is suggested, in this case, the combination of agency and stakeholder theories.

Exploring the impact of the five main pillars of corporate governance on sustainability dimensions, we collected data from large firms in the USA from 2002 to 2017 and developed five main hypotheses. Among the CG pillars utilised in our analysis, board function specifically was discovered to have a pertinent effect across all three dimensions of business sustainability, thus, we accept all sub-hypotheses of H1. The results imply that priority should be given to the different board functions such as board meetings, independence and committees which underscore decision making. Furthermore, we failed to accept all sub-hypotheses of board structure, compensation, shareholder rights and strategy. With board structure for instance, we found no empirical evidence to support *H2a* and *H2c*, however, we found that with a well-developed structure in place, companies can enhance their social performance significantly.

The findings of the study also indicate that high stakeholder engagement has a positive significant impact on business sustainability. Our study was, however, limited to selected large listed firms in the USA, hence the results are not representative of all large firms and cannot be generalised.

Notwithstanding the above, the research complements the findings of Seow *et al*. (2006) and Ntim and Soobaroyen (2013) associated with corporate governance, sustainability and stakeholder engagement in different sectors. These results will aid corporate institutions, boards of directors and policy makers to understand the relevance of the pillars of corporate governance in the quest to uphold sustainability standards. The research will also help fuel the discussion on strategic, proactive and intensive stakeholder engagement activities for company executives.

From a managerial perspective, the study helps to make informed decisions for the implementation of sustainable practices. Our empirical work sheds light on the key corporate governance pillars directors need to stress to ensure improved sustainability. The study also contributes to the on-going research on stakeholder engagement and sustainability performance. It is evident that there is a need for companies to not only engage with stakeholders but also to ensure that the engagement and interactions are consistent.

Future studies can use different research methods including surveys and interviews to provide an in-depth insight into the CG and sustainability relationship. These methods can capture other demographic characteristics of firms and directors useful for understanding the underlying decisions for implementing sustainability practices. Also, a comparative investigation of business sustainability from different countries and a sectoral analysis would shed light on the relevance of corporate governance in upholding and enhancing business sustainability.

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**Table 1**: **Variables’ Measurement and Definition**

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Measures** | **Mnemonic** | **Definition/Measurement** |
| Independent variables | Board Functions | *BF* | Relative measure of board effectiveness in allocating tasks and responsibilities to board committees. |
|  | Board Structure | *BST* | Relative measure of well-balanced board including experience, diversity and independence. |
|  | Board Compensation | *BC* | Relative measure of competitive and proportionate management compensation including links to individual or company-wide financial or extra-financial targets. |
|  | Board Shareholder Rights | *BSR* | Relative measure of shareholder policies and equal treatment of shareholder. |
|  | Board Strategy | *BSTR* | Relative measure of vision and strategy, which integrated financial and extra financial aspects in the day-to-day decision-making processes. |
| Dependent variables | Financial sustainability (Tobins Q) | Tobins Q | Firm equity plus long-term debt plus liabilities divided by total assets (Dushnitsky and Lenox, 2006) |
|  | Social sustainability  | Social | Relative measure of a company's capacity to generate trust and loyalty with its workforce, customers and society, through its use of best management practices (Qiu et al., 2016) |
|  | Environmental sustainability | Envtal | Relative measure of a company's impact on living and non-living natural systems, including the air, land and water, as well as complete ecosystems (Qiu et al., 2016) |
| Moderating variable | Stakeholder engagement | Stake | The percentage measure of companies explanation of how they engage with their stakeholders (Dal Maso et al., 2017) |
| Control variables | Slack Resources | Slack | Cash and cash equivalent plus short term investment divided by current liabilities |
|  | Research and Development | R&D | Research and development expenses divided by revenue |
|  | Firm Size | Size | Natural logarithm of Total Asset |
|  | Leverage | Leverage | Total debt divided by total assets (Jiao, 2010) |
|  | Revenue Growth | Growth | Net revenue one-year growth |
|  | Beta | Beta | The measure of stock price volatility |
|  | Capital Intensity | Capex | Capital expenditure to total assets |
|  | Business ethics | Ethics | Commitment from a senior management or board member to general business ethics |
|  | Executives’ community involvement | Com\_Involve | Commitment from a senior management or board member to good corporate citizenship. |
|  | CSR committee | CSR C’ttee | The measure of whether or not the company have a CSR committee or team. 1 for yes and 0 for no |

**Table 2: Descriptive Statistics**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   |  N |  Mean |  St. Dev |  min |  max |
|  TobinsQ | 4944 | 64.528 | 12.727 | 38.017 | 85.301 |
|  Social | 4944 | 61.548 | 28.215 | 4 | 99 |
|  Envtal | 4944 | 57.918 | 32.137 | 8 | 97 |
|  *BF* | 4944 | 80.883 | 12.205 | 47 | 92 |
|  *BST* | 4944 | 80.774 | 11.207 | 52 | 93 |
|  *BC* | 4944 | 69.529 | 16.312 | 36 | 89 |
|  *BSR* | 4944 | 69.078 | 22.816 | 26 | 96 |
|  *BSTR* | 4944 | 52.408 | 32.486 | 11 | 94 |
|  Beta | 4944 | 1.057 | .546 | 0 | 2 |
|  Size | 4944 | 16.584 | 1.099 | 13.515 | 20.581 |
|  R & D | 4944 | 4.438 | 14.516 | 0 | 90.072 |
|  Capex | 4944 | 4.432 | 3.187 | .768 | 12.184 |
|  Slack | 4944 | 1.186 | .81 | 0 | 3 |
|  Growth | 4944 | 8.508 | 12.606 | -13 | 39 |
|  Leverage | 4944 | 22.364 | 13.785 | 0 | 49.251 |
|  Ethics | 4944 | .546 | .498 | 0 | 1 |
|  Com\_Involve | 4944 | .461 | .499 | 0 | 1 |
|  CSR C’ttee | 4944 | .489 | .5 | 0 | 1 |
| Presents the descriptive statistics of the independent, dependent and control variables. *TobinsQ*, *Social* and *Envtal* represent the financial, social and environmental sustainability dimensions. Governance variables are *BF* (Board function), *BST* (Board Structure), *BC* (Board compensation), *BSR* (Board shareholder rights) and *BSTR* (Board strategy). Control variables include *Beta*, Firm size (*Size*), research and development (*R & D*), capital intensity (*Capex*), sales growth (*Growth*), financial leverage (Leverage), Business ethics (*Ethics*), executives’ community involvement (*Com\_Involve*) and CSR committee (*CSR C’ttee*). |

**Table 3: Pearson’s Pairwise Correlation**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) |
| (1) TobinsQ | 1.00 |
| (2) Social | -0.13\* | 1.00 |
| (3) Envtal | -0.12\* | 0.80\* | 1.00 |
| (4) *BF* | -0.01 | 0.06\* | 0.06\* | 1.00 |
| (5) *BST* | 0.02 | 0.17\* | 0.15\* | 0.35\* | 1.00 |
| (6) *BC* | 0.04\* | 0.01 | 0.05 | 0.04\* | 0.08\* | 1.00 |
| (7) *BSR* | -0.08\* | 0.14\* | 0.12\* | 0.08\* | 0.11\* | 0.04\* | 1.00 |
| (8) *BSTR* | -0.15\* | 0.78\* | 0.80\* | 0.03\* | 0.13\* | -0.00 | 0.11\* | 1.00 |
| (9) Beta | 0.10\* | -0.76\* | -0.04\* | 0.03\* | 0.01 | 0.01 | -0.03\* | -0.07\* | 1.00 |
| (10) Size | -0.09\* | 0.42\* | 0.43\* | 0.01 | 0.08\* | -0.20\* | 0.10\* | 0.40\* | -0.15\* | 1.00 |
| (11) Capex | 0.02 | 0.06\* | 0.08\* | -0.02 | -0.02 | 0.02 | 0.03\* | 0.11\* | -0.02 | 0.04\* | 1.00 |
| (12) Slack | 0.49\* | -0.09\* | -0.07\* | -0.03\* | 0.02 | -0.02 | -0.05\* | -0.13\* | 0.22\* | -0.01 | -0.16\* | 1.00 |
| (13) Growth | 0.15\* | -0.22\* | -0.24\* | 0.02 | -0.07\* | -0.04\* | -0.04\* | -0.23\* | 0.07\* | 0.02 | 0.01 | 0.16\* | 1.00 |
| (14) Leverage | 0.08\* | 0.07\* | 0.10\* | 0.04\* | 0.08\* | 0.01 | -0.04\* | 0.12\* | -0.07\* | -0.09\* | 0.02 | -0.24\* | -0.16\* | 1.00 |
| (15) R & D | 0.09\* | -0.03 | -0.03\* | -0.03\* | -0.01 | -0.07\* | -0.01 | -0.06\* | 0.07\* | 0.02 | -0.12\* | 0.29\* | 0.06\* | -0.11\* | 1.00 |
| (16) Ethics | -0.09\* | 0.44\* | 0.40\* | 0.03\* | 0.13\* | -0.01 | -0.01 | 0.38\* | -0.01 | 0.24\* | -0.09\* | -0.06\* | -0.16\* | 0.09\* | -0.04\* | 1.00 |
| (17) Com\_Inv | -0.11\* | 0.52\* | 0.48\* | -0.01 | 0.09\* | -0.02 | 0.01 | 0.53\* | -0.04\* | 0.31\* | 0.05\* | -0.10\* | -0.17\* | 0.08\* | -0.04\* | 0.39\* | 1.00 |
| (18) CSR  | -0.11\* | 0.54\* | 0.60\* | 0.04\* | 0.14\* | -0.01 | 0.02 | 0.67\* | -0.01 | 0.31\* | 0.06\* | -0.09\* | -0.22\* | 0.13\* | -0.05\* | 0.40\* | 0.45\* | 1.00 |
|  |
| Presents the Pearson pairwise correlation results of the independent, dependent and control variables. *TobinsQ, Social* and *Envtal* represent the financial, social and environmental sustainability dimensions. Governance variables are *BF* (Board function), *BST* (Board Structure), *BC* (Board compensation), *BSR* (Board shareholder rights) and *BSTR* (Board strategy). Control variables include *Beta,* Firm size (*Size*), research and development (*R&D*), capital intensity (*Capex*), sales growth (*Growth),* financial leverage (*Leverage*), Business ethics (*Ethics*), executives’ community involvement (*Com\_Involve*) and CSR committee (*CSR C’ttee*). Significance level is asterisks at 95%. The high correlation between Envtal and Social does not affect the model results because these variables do not enter into the regression simultaneously. |

 **Table 4: Panel Fixed Effects Results (Environmental Sustainability and Corporate Governance)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Exp. Sign | (1) | (2) | (3) | (4) | (5) | (6) |
|  *BF* | (+) | 0.111\*\*\* | 0.131\*\*\* |  |  |  |  |
|   |  | (0.030) | (0.034) |  |  |  |  |
|  *BST* | (+) | 0.022 |  | 0.090 |  |  |  |
|   |  | (0.034) |  | (0.037) |  |  |  |
|  *BC* | (-) | 0.025 |  |  | 0.060 |  |  |
|   |  | (0.020) |  |  | (0.023) |  |  |
|  *BSR* | (-) | 0.032\* |  |  |  | 0.049\*\* |  |
|   |  | (0.018) |  |  |  | (0.021) |  |
|  *BSTR* | (+) | 0.442\*\*\* |  |  |  |  | 0.447\*\*\* |
|   |  | (0.029) |  |  |  |  | (0.029) |
|  Beta | (-) | -0.085 | 0.585 | 0.634 | 0.669 | 0.687 | 0.008 |
|   |  | (0.773) | (0.910) | (0.907) | (0.911) | (0.908) | (0.774) |
|  Size | (+) | 2.505\*\*\* | 3.411\*\*\* | 3.495\*\*\* | 3.720\*\*\* | 3.553\*\*\* | 2.683\*\*\* |
|   |  | (0.915) | (1.173) | (1.175) | (1.177) | (1.173) | (0.928) |
|  R & D | (+) | 0.009 | 0.015 | 0.018\* | 0.018\* | 0.016 | 0.009 |
|   |  | (0.010) | (0.011) | (0.011) | (0.011) | (0.011) | (0.009) |
|  CAPEX | (+) | 0.405\* | 0.369 | 0.379\* | 0.306 | 0.319 | 0.286 |
|   |  | (0.225) | (0.225) | (0.224) | (0.224) | (0.207) | (0.206) |
|  Slack | (+) | 0.600 | 0.914 | 0.844 | 0.915 | 0.903 | 0.580 |
|   |  | (0.590) | (0.692) | (0.687) | (0.687) | (0.693) | (0.590) |
|  Growth | (+) | -0.063\*\*\* | -0.082\*\*\* | -0.079\*\*\* | -0.082\*\*\* | -0.081\*\*\* | -0.068\*\*\* |
|   |  | (0.023) | (0.027) | (0.027) | (0.027) | (0.027) | (0.023) |
|  Leverage | (-) | 0.079\* | 0.097\* | 0.097\* | 0.106\*\* | 0.105\*\* | 0.085\*\* |
|   |  | (0.043) | (0.053) | (0.053) | (0.053) | (0.053) | (0.043) |
|  Ethics | (+) | 3.900\*\*\* | 5.445\*\*\* | 5.398\*\*\* | 5.526\*\*\* | 5.467\*\*\* | 4.026\*\*\* |
|   |  | (1.325) | (1.563) | (1.568) | (1.561) | (1.559) | (1.335) |
|  Com\_Involve | (+) | 2.239\* | 7.305\*\*\* | 7.252\*\*\* | 7.147\*\*\* | 7.214\*\*\* | 1.995 |
|   |  | (1.250) | (1.433) | (1.443) | (1.446) | (1.446) | (1.265) |
|  CSR C’ttee | (+) | 2.502\* | 11.462\*\*\* | 11.339\*\*\* | 11.483\*\*\* | 11.412\*\*\* | 2.577\* |
|   |  | (1.334) | (1.451) | (1.460) | (1.459) | (1.454) | (1.347) |
|  Obs. |  | 4871 | 4871 | 4871 | 4871 | 4871 | 4871 |
|  R-squared  |  | 0.553 | 0.442 | 0.439 | 0.439 | 0.439 | 0.547 |
| Industry  |  | Yes | Yes | Yes | Yes | Yes | Yes |
| Year  |  | Yes |  Yes |  Yes |  Yes |  Yes |  Yes |
| The table shows the panel fixed effect regression results of the pillars of corporate governance and environmental sustainability. Stepwise regression was employed to show different model results. **Model 1** contains results of all the variables. The independent variables are board functions *(BF),* board structure (*BST*), board composition (*BC*), board shareholder right (*BSR*) and board strategy (*BSTR*). We include beta (*Beta*), firm size (*Size*), research and development *(R&D*), capital intensity (*Capex),* sales growth *(Growth*), financial leverage (*Leverage*), Business ethics (*Ethics*), executives’ community involvement (*Com\_Involve*) and CSR committee (*CSR C’ttee*). In **Model 2**, we use only *BF* as the independent variables while controlling for all the control variables. **In Models 3, 4, 5 and 6**, we include *BST, BC, BSR* and *BSTR* respectively. Robust standard errors are in parenthesis \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 |

 **Table 5: Panel Fixed Effects Results (Social Sustainability and Corporate Governance)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Exp. Sign | (1) | (2) | (3) | (4) | (5) | (6) |
|  *BF* | (+) | 0.052\* | 0.090\*\*\* |  |  |  |  |
|   |  | (0.028) | (0.030) |  |  |  |  |
|  *BST* | (+) | 0.108\*\*\* |  | 0.159\*\*\* |  |  |  |
|   |  | (0.031) |  | (0.034) |  |  |  |
|  *BC* | (-) | 0.035\* |  |  | 0.063\*\*\* |  |  |
|   |  | (0.021) |  |  | (0.023) |  |  |
|  *BSR* | (-) | 0.066\*\*\* |  |  |  | 0.092\*\*\* |  |
|   |  | (0.016) |  |  |  | (0.017) |  |
|  *BSTR* | (+) | 0.344\*\*\* |  |  |  |  | 0.354\*\*\* |
|   |  | (0.025) |  |  |  |  | (0.025) |
|  Beta | (-) | 0.496 | 0.881 | 0.886 | 0.983 | 1.015 | 0.569 |
|   |  | (0.794) | (0.902) | (0.896) | (0.901) | (0.896) | (0.800) |
|  Size | (+) | 2.887\*\*\* | 3.821\*\*\* | 3.743\*\*\* | 3.983\*\*\* | 3.797\*\*\* | 3.073\*\*\* |
|   |  | (0.824) | (0.915) | (0.909) | (0.907) | (0.913) | (0.830) |
|  R &D | (-) | -0.021\*\* | -0.016 | -0.013 | -0.014 | -0.017 | -0.022\*\* |
|   |  | (0.010) | (0.011) | (0.012) | (0.012) | (0.013) | (0.009) |
|  Capex | (+) | 0.405\* | 0.369 | 0.379\* | 0.306 | 0.319 | 0.286 |
|   |  | (0.225) | (0.225) | (0.224) | (0.224) | (0.207) | (0.206) |
|  Slack | (-) | -0.387 | -0.321 | -0.411 | -0.304 | -0.189 | -0.414 |
|   |  | (0.648) | (0.702) | (0.690) | (0.701) | (0.698) | (0.659) |
|  Growth | (+) | -0.002 | -0.016 | -0.011 | -0.014 | -0.013 | -0.006 |
|   |  | (0.020) | (0.022) | (0.022) | (0.022) | (0.022) | (0.020) |
|  Leverage | (+) | 0.004 | 0.043 | 0.034 | 0.047 | 0.040 | 0.014 |
|   |  | (0.045) | (0.049) | (0.049) | (0.049) | (0.050) | (0.044) |
|  Ethics | (+) | 4.779\*\*\* | 5.225\*\*\* | 5.150\*\*\* | 5.361\*\*\* | 5.528\*\*\* | 4.802\*\*\* |
|   |  | (1.216) | (1.340) | (1.343) | (1.342) | (1.340) | (1.225) |
|  Com\_Involve | (+) | 2.877\*\* | 6.065\*\*\* | 6.197\*\*\* | 6.016\*\*\* | 6.317\*\*\* | 2.361\* |
|   |  | (1.217) | (1.347) | (1.346) | (1.352) | (1.340) | (1.235) |
|  CSR C’ttee | (+) | -2.965\*\*\* | 3.353\*\*\* | 3.162\*\* | 3.432\*\*\* | 3.662\*\*\* | -3.008\*\*\* |
|   |  | (1.117) | (1.237) | (1.233) | (1.235) | (1.225) | (1.124) |
|  Obs. |  | 4871 | 4871 | 4871 | 4871 | 4871 | 4871 |
|  R-squared  |  | 0.462 | 0.369 | 0.373 | 0.369 | 0.375 | 0.451 |
| Industry  |  | Yes | Yes | Yes | Yes | Yes | Yes |
| Year  |  | Yes |  Yes |  Yes |  Yes |  Yes |  Yes |
|  |  |
| The table shows the panel fixed effect regression results of the pillars of corporate governance and social sustainability. Stepwise regression was employed to show different model results. **Model 1** contains results of all the variables. The independent variables are board functions *(BF),* board structure (*BST*), board composition (*BC*), board shareholder right (*BSR*) and board strategy (*BSTR*). We include beta (*Beta*), firm size (*Size*), research and development *(R&D*), capital intensity (*Capex),* sales growth *(Growth*), financial leverage (*Leverage*), Business ethics (*Ethics*), executives’ community involvement (*Com\_Involve*) and CSR committee (*CSR C’ttee*) as control variables. In **Model 2**, we use only *BF* as the independent variables while controlling for all the control variables. **In Models 3, 4, 5 and 6**, we include *BST, BC, BSR* and *BSTR* respectively. Robust standard errors are in parenthesis \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 |

**Table 6: Fixed Effect and GMM Results (Financial Sustainability and Corporate Governance)**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | Robustness Tests – 2-STEP GMM |
|  | Exp. Sign | Fixed Effect Panel Regression |  Tobin’s Q ROA |
|   |  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| L1. TobinsQ |  |  |  |  |  |  |  | 0.556\*\*\* | 0.489\*\*\* |  |
|  |  |  |  |  |  |  |  | (0.068) | (0.082) |  |
| L2. TobinsQ |  |  |  |  |  |  |  |  | 0.113\*\*\* |  |
|  |  |  |  |  |  |  |  |  | (0.035) |  |
| L1. ROA |  |  |  |  |  |  |  |  |  | 0.313\*\*\* |
|  |  |  |  |  |  |  |  |  |  | (0.091) |
|  *BF* | (+) | -0.151 | -0.109 |  |  |  |  | 0.065 | 0.079\*\* | -0.211 |
|   |  | (0.177) | (0.163) |  |  |  |  | (0.042) | (0.039) | (0.256) |
|  *BST* | (+) | 0.079 |  | 0.040 |  |  |  | -0.091\* | -0.030 | -0.621 |
|   |  | (0.177) |  | (0.164) |  |  |  | (0.052) | (0.056) | (0.420) |
|  *BC* | (+) | 0.322\*\*\* |  |  | 0.304\*\*\* |  |  | 0.011 | 0.029 | 0.207 |
|   |  | (0.099) |  |  | (0.098) |  |  | (0.025) | (0.023) | (0.128) |
|  *BSR* | (+) | -0.067 |  |  |  | -0.064 |  | 0.015 | 0.034\* | 0.187\* |
|   |  | (0.089) |  |  |  | (0.087) |  | (0.015) | (0.019) | (0.101) |
|  *BSTR* | (-) | -0.152 |  |  |  |  | -0.137 | 0.055\* | 0.033 | 0.137 |
|   |  | (0.112) |  |  |  |  | (0.110) | (0.030) | (0.036) | (0.194) |
|  Beta | (+) | 9.557\* | 9.295\* | 9.192\* | 9.159\* | 9.213\* | 9.525\* | 4.887\*\*\* | 5.468\*\*\* | 17.146\*\* |
|   |  | (4.937) | (4.908) | (4.931) | (4.906) | (4.910) | (4.925) | (1.399) | (1.395) | (7.626) |
|  Size | (+) | 71.484\*\*\* | 70.580\*\*\* | 70.374\*\*\* | 71.008\*\*\* | 70.488\*\*\* | 70.647\*\*\* | 2.422\*\*\* | 1.573\*\* | 2.445\* |
|   |  | (8.721) | (8.807) | (8.825) | (8.764) | (8.814) | (8.780) | (0.630) | (0.674) | (1.380) |
|  Capex | (+) | 6.569\*\*\* | 6.522\*\*\* | 6.551\*\*\* | 6.554\*\*\* | 6.583\*\*\* | 6.580\*\*\* | 0.246 | 0.450\* | 3.863\*\* |
|   |  | (1.345) | (1.354) | (1.347) | (1.348) | (1.339) | (1.346) | (0.261) | (0.262) | (1.577) |
|  Slack | (+) | 16.034\*\*\* | 15.873\*\*\* | 15.867\*\*\* | 15.987\*\*\* | 15.879\*\*\* | 15.995\*\*\* | 2.822\*\*\* | 3.008\*\*\* | -4.654 |
|   |  | (3.733) | (3.737) | (3.734) | (3.738) | (3.726) | (3.749) | (0.983) | (1.092) | (2.905) |
|  Growth | (+) | 0.718\*\*\* | 0.714\*\*\* | 0.718\*\*\* | 0.724\*\*\* | 0.713\*\*\* | 0.711\*\*\* | -0.088\*\*\* | -0.083\*\*\* | 0.344\*\* |
|   |  | (0.186) | (0.187) | (0.188) | (0.187) | (0.187) | (0.187) | (0.015) | (0.015) | (0.143) |
|  Leverage | (+) | -0.846\*\* | -0.857\*\* | -0.866\*\* | -0.851\*\* | -0.864\*\* | -0.860\*\* | 0.190\*\*\* | 0.063 | -1.127\*\*\* |
|   |  | (0.371) | (0.375) | (0.373) | (0.370) | (0.373) | (0.374) | (0.061) | (0.075) | (0.366) |
|  Obs. |  | 4871 | 4871 | 4871 | 4871 | 4871 | 4871 | 3964 | 3544 | 4042 |
|  R-squared  |  | 0.261 | 0.257 | 0.257 | 0.260 | 0.257 | 0.258 | - | - | - |
| Industry |  | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year  |  | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| AR (1)AR (2)Hansen Test | 0.000 | 0.000 | 0.000 |
| 0.034 | 0.463 | 0.952 |
| 0.052 | 0.220 | 0.296 |
| The table shows the panel fixed effect regression results of the pillars of corporate governance and financial sustainability and the Generalised Methods of Moments (GMM) results. We use Stepwise regression to present the fixed effects model results. **Model 1** contains results of all the variables. The independent variables are board functions *(BF),* board structure (*BST*), board composition (*BC*), board shareholder right (*BSR*) and board strategy (*BSTR*). For control variables, we include beta (*Beta*), firm size (*Size*), capital intensity (*Capex),* sales growth *(Growth*) and financial leverage (*Leverage*). In **Model 2**, we use only *BF* as the independent variables while controlling for all the control variables. In **models 3, 4, 5 and 6**, we include *BST, BC, BSR* and *BSTR* respectively. For the GMM results in **Model 7**, the first lag of *Tobin’s Q* was used as the instrumental variable, however, failed to meet the validity of over-identification and under identification specifications. To enrich the validity of our instrumental variable, we include the second lag of *Tobin’s Q* in **Model 8** which meets AR, (1) and (2) as well as the Hansen Test of identification restrictions. For further robustness check, we included ROA as another measure for financial sustainability using the 2-step GMM in **Module 9**. Robust standard errors are in parenthesis \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 |

 **Table 7: The Role of Stakeholder Engagement (Environmental and Social Sustainability)**

|  |  |  |
| --- | --- | --- |
|  | Environmental Sustainability | Social Sustainability |
|   |  (1) |  (2) |  (3) |  (4) |  (5) |  (6) |  (7) |  (8) |  (9) |  (10) |
|  ***BF*** | 0.086\*\*\* |  |  |  |  | 0.039 |  |  |  |  |
|   | (0.034) |  |  |  |  | (0.030) |  |  |  |  |
|  Low Stake X *BF* | -0.004 |  |  |  |  | 0.030\*\* |  |  |  |  |
|   | (0.013) |  |  |  |  | (0.013) |  |  |  |  |
|  High Stake X *BF* | 0.090\*\*\* |  |  |  |  | 0.123\*\*\* |  |  |  |  |
|   | (0.020) |  |  |  |  | (0.018) |  |  |  |  |
|  ***BST*** |  | 0.070 |  |  |  |  | 0.104\*\*\* |  |  |  |
|   |  | (0.038) |  |  |  |  | (0.034) |  |  |  |
|  Low Stake X *BST* |  | -0.014 |  |  |  |  | -0.019 |  |  |  |
|   |  | (0.013) |  |  |  |  | (0.012) |  |  |  |
|  High Stake X *BST* |  | 0.089\*\*\* |  |  |  |  | 0.116\*\*\* |  |  |  |
|   |  | (0.020) |  |  |  |  | (0.018) |  |  |  |
|  ***BC*** |  |  | 0.042 |  |  |  |  | 0.022\* |  |  |
|   |  |  | (0.027) |  |  |  |  | (0.026) |  |  |
|  Low Stake X *BC* |  |  | -0.013 |  |  |  |  | 0.022 |  |  |
|   |  |  | (0.015) |  |  |  |  | (0.014) |  |  |
|  High Stake X *BC* |  |  | 0.081\*\*\* |  |  |  |  | 0.127\*\*\* |  |  |
|   |  |  | (0.022) |  |  |  |  | (0.020) |  |  |
|  ***BSR*** |  |  |  | 0.072\*\*\* |  |  |  |  | 0.056\*\* |  |
|   |  |  |  | (0.025) |  |  |  |  | (0.022) |  |
|  Low Stake X *BSR* |  |  |  | -0.023 |  |  |  |  | 0.015 |  |
|   |  |  |  | (0.016) |  |  |  |  | (0.015) |  |
|  High Stake X *BSR* |  |  |  | 0.074\*\*\* |  |  |  |  | 0.109\*\*\* |  |
|   |  |  |  | (0.022) |  |  |  |  | (0.019) |  |
|  ***BSTR*** |  |  |  |  | 0.043\*\*\* |  |  |  |  | 0.096\*\*\* |
|   |  |  |  |  | (0.032) |  |  |  |  | (0.030) |
|  Low Stake X *BSTR* |  |  |  |  | -0.015 |  |  |  |  | 0.044\*\* |
|   |  |  |  |  | (0.017) |  |  |  |  | (0.018) |
|  High Stake X *BSTR* |  |  |  |  | -0.496\*\* |  |  |  |  | 0.311\*\*\* |
|  |  |  |  |  | (0.021) |  |  |  |  | (0.020) |
|  Obs. | 4871 | 4871 | 4871 | 4871 | 4871 | 4871 | 4871 | 4871 | 4871 | 4871 |
|  R-squared  | 0.439 | 0.436 | 0.436 | 0.438 | 0.544 | 0.389 | 0.390 | 0.388 | 0.389 | 0.455 |
| Industry | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year  | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| In this table, we present the stakeholder engagement interaction with corporate governance pillars on environmental and social sustainability. **Models 1 to 5** represent the stepwise results of the interaction effect on environmental sustainability and **Models 6 to 10** shows stepwise interaction effect on social sustainability. All the control variables used in **Tables 3** **and 4** were included in the full analysis but outputs were omitted in this table. For interaction effects, we employed the two main levels of engagement i.e., low stakeholder engagement (*Low Stake*) and high stakeholder engagement (*High Stake*) to interact with all five independent variables (*BF, BST, BS, BSR* and *BSTR*). Due to the skewness in the stakeholder engagement variable at the extreme ends, we could only group into low and high engagements. |

 **Table 8**: **The Role of Stakeholder Engagement (Financial Sustainability – Tobin’s Q)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
| *BF* | -0.194 |  |  |  |  |
|  | (0.182) |  |  |  |  |
| Low Stake X *BF* | 0.110 |  |  |  |  |
|  | (0.095) |  |  |  |  |
| High Stake X *BF* | 0.198\*\*\* |  |  |  |  |
|  | (0.072) |  |  |  |  |
| *BST* |  | 0.160 |  |  |  |
|  |  | (0.189) |  |  |  |
| Low Stake X *BF* |  | 0.095 |  |  |  |
|  |  | (0.096) |  |  |  |
| High Stake X *BF* |  | 0.208\*\*\* |  |  |  |
|  |  | (0.074) |  |  |  |
| *BC* |  |  | 0.354\*\*\* |  |  |
|  |  |  | (0.120) |  |  |
| Low Stake X *BF* |  |  | -0.131 |  |  |
|  |  |  | (0.103) |  |  |
| High Stake X *BF* |  |  | 0.243\*\*\* |  |  |
|  |  |  | (0.077) |  |  |
| *BSR* |  |  |  | -0.194\* |  |
|  |  |  |  | (0.115) |  |
| Low Stake X *BF* |  |  |  | 0.097 |  |
|  |  |  |  | (0.095) |  |
| High Stake X *BF* |  |  |  | 0.188\*\* |  |
|  |  |  |  | (0.084) |  |
| *BSTR* |  |  |  |  | -0.115 |
|  |  |  |  |  | (0.142) |
| Low Stake X *BF* |  |  |  |  | 0.033 |
|  |  |  |  |  | (0.099) |
| High Stake X *BF* |  |  |  |  | 0.206\*\* |
|  |  |  |  |  | (0.090) |
| Obs. | 4931 | 4931 | 4931 | 4931 | 4931 |
| R-squared | 0.146 | 0.145 | 0.146 | 0.144 | 0.145 |
| Industry Dummy | Yes | Yes | Yes | Yes | Yes |
| Year Dummy | Yes | Yes | Yes | Yes | Yes |
|  |
|  Table 8 shows the stakeholder engagement interaction with corporate governance pillars on financial sustainability. **Models 1 to 5** represent the stepwise results of the interaction effect on Tobin’s Q. For interaction effects, we employed the two main levels of engagement i.e., low stakeholder engagement (*Low Stake*) and high stakeholder engagement (*High Stake*) to interact with all five independent variables (*BF, BST, BS, BSR* and *BSTR*).  |