

## **The role of corporate stakeholders and national culture in shaping firm environmental performance.**

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## **Abstract**

Growing concern surrounding the effects of climate change means that individuals are placing increasing value on goods and services based on their resource efficiency. As a result environmental, social, and corporate governance (ESG) factors are becoming more important to stakeholders. We apply hierarchical linear modelling (HLM) to a sample of 4,534 firms across 23 countries to examine the influence different stakeholders have on the environmental performance of a firm. We find that when stakeholders are well-protected, they use their influence to compel firms to improve environmental performance. Further, we find that internal stakeholders are more influential in shaping corporate environmental performance than their external counterparts, and that national culture matters.

Keywords: ESG, corporate environmental performance, culture, HLM.

JEL Classification Codes: G30, G34, G39, Q50

## 1. Introduction

Environmental risk and climate change have been at the centre of public debate for some time and there is growing evidence to suggest that environmental concerns are increasingly important to the decision making process. As a result, environmental performance should be of key interest to organizations. Our study draws together two theories; namely stakeholder theory and Hofstede's Cultural Dimensions Theory (1980) to explore the influence different groups of stakeholders have in shaping the environmental performance of a firm while also taking account of national cultural differences. Specifically, we employ multi-level analysis to 4,534 firms across 23 countries to identify whether stakeholders will use their country level protection to encourage firms to improve their financial performance and whether national culture matters. Our results have important implications for organizations as we find that overall, when the rights of stakeholders are well protected at the country level, they will exert their influence to compel firms to improve environmental performance. We also find that internal stakeholders play a more significant role in shaping corporate environmental performance than external stakeholders, and that the national culture that prevails in the country that the firm is domiciled matters.

Improving environmental performance was traditionally perceived as a costly endeavour for firms that could negatively impact the stock price, reduce profits and decrease competitiveness. Jian and Bansal (2003) find that firms are hesitant to pursue environmental visibility unless they perceive some strategic value from doing so but more recently this idea is being challenged and there is emerging evidence to suggest that it is possible for a firm to be both environmentally friendly and wealth maximizing. For example, Ambec and Lanoie (2008) argue that it can sometimes pay for firms to be green and that by looking at both sides of the balance sheet, improved environmental practices can increase revenues (through improved market access, product differentiation, sale of pollution abatement technologies) and decrease costs (through improved relationships with external stakeholders, lower cost of capital and labour). A further group of studies examine the relationship between a firm's environmental performance and the financial and economic performance of the firm (see for example Chang et al 2014; Brulhart et al, 2017; Lee et al 2016; Duque-Grisales et al 2021; Nollet et al 2016; Brammer et al 2006; Cahan et al 2015).

Another body of literature examines how stakeholders influence the environmental strategy or performance of an organization. Stakeholders of an organization are defined as "any group or individual who can affect or is affected by the achievement of an organization's objectives" (Freeman 1984:46) and can be categorized as either internal or external. Internal stakeholders refer to individuals or parties within an organization such as employees, managers, and shareholders; while external stakeholders are individuals or entities not within the organization itself but who can affect or be affected by the organization's performance such as creditors, suppliers, consumers, media, regulators, and government. Empirical evidence suggests that stakeholders influence the way in which a company is run and the strategic decision making of a firm. Stakeholder theory hypothesizes that a firm is only successful when it generates value to its stakeholders, and this value can extend beyond financial benefits.

One way in which stakeholders can use their degree of legal protection at the country level is to influence the environmental performance of the firm. For example, Kassinis and Vafeas (2006) provide evidence that stakeholder pressures are associated with improved environmental performance, while Madsen and Ulhøi (2001) find that the ability of a firm to correctly identify stakeholders' pressure determines corporate environmental actions. Ferron Vilchez et al (2017) examine the ways in which

stakeholders influence the environmental policy design of a firm, particularly with respect to both how comprehensive and how visible it is and find evidence that differences in stakeholder pressures are related to differences in the managerial decision making process regarding the design of a firm's environmental policy. Further they find that it is pressures from internal stakeholders that seems to lead to a comprehensive policy design, while pressures from external stakeholders is more likely to lead to greenwashing. They speculate that this may be because internal stakeholders are better informed about a firm's ongoing operations and how to mitigate environmental risk of the firm, while Emerson et al., 2009 find that firms believe that addressing societal stakeholder concerns lead to reputational benefits. Hence it seems clear that different types of pressure being exerted by the various stakeholder groups will influence companies differently, an issue we aim to explore in this study.

Since Hofstede (1983), national culture has been established as a fundamental reason for the differences in the ways that organizations operate and a large body of literature has emerged confirming that the prevailing national culture in which a country is domiciled influences both management practices and the effectiveness of those practices (Jaeger, 1986; Newman and Nollen, 1996; Kull et al., 2014; Wong et al., 2017). Cultural explanations have also been offered for the CSR practices of firms (Peng et al, 2012; Halkos and Skouloudis, 2017). Therefore, it is probable that national culture will be influential in shaping firm environmental performance. Taking inspiration from previous studies, we examine the influence of both internal and external stakeholders on the environmental performance of a firm, while also considering national culture. We identify two key groups of internal stakeholders; namely employees and shareholders, and three key groups of external stakeholders; namely creditors, media, and regulators to determine whether they use the legal protections afforded to them at the country level to use their influence to shape the environmental performance of a firm. A priori, we would expect that that do. We add to the literature by examining the influence of multiple stakeholders by considering their country-level rights and national culture simultaneously. We find that when the rights of stakeholders are well protected at the country level, they do exert their influence to shape environmental policy and that, with the exception of creditors, the relationship between country level protection and environmental performance is positive. In the case of creditors, strong country level protection is associated with weaker environmental performance. We also find that national culture matters for corporate environmental performance.

The remainder proceeds as follows. In section 2 we develop our hypotheses, in section 3 we discuss the data. The model is presented and explained in section 4, section 5 presents our results and discussion, while section 6 provides concluding remarks.

## **2. Hypothesis Development**

Freeman (2010) notes that in order for the management of a firm to be effective, the concerns of all stakeholders must be taken into account. Within the stakeholder theory framework, many different stakeholders of the organization will exert their influence to pursue both economic goals (Freeman, 1984) and non-economic goals such as corporate environmental strategies (Buysse and Verbeke, 2003; Easley and Lenox, 2006). Sarkis et al. (2010) have reported that stakeholder pressures positively influence firm environmental performance. While stakeholders can affect the performance of a firm by taking actions through a variety of different channels, not all stakeholders will exert the same pressures on the activities of the firm. It is also important to consider what type of remediation actions each group of stakeholder

can engage in if the firm chooses not to engage in the environmental strategies the stakeholder would like when attempting to assess how influential they will be. Stakeholders may be able to choose an exit strategy; i.e. divest from the company, or a voice strategy; using engagement with the company, regulators, media, or government to achieve their goals. These exit strategies are often dictated by the national culture that prevails. From our review of the literature, we identify five different sets of stakeholders that can affect the managerial decision making of the firm; two of the stakeholders can be categorized as internal stakeholders, while three are external stakeholders. We posit that each set of stakeholders will use their rights to shape the environmental performance of a firm and investigate which set of stakeholders are the most influential.

### Internal Stakeholders

We begin by identifying two sets of influential internal stakeholders; namely shareholders and employees. We believe the distinction between internal and external stakeholders is important because while all stakeholders can affect the firm, internal shareholders are more likely to have intimate knowledge of the organizational and operational processes of a corporation and therefore they may have a better understanding of the types of environmental activities the firm is engaged in. They are also likely to be more personally invested in the practices and behaviour of the firm.

### Shareholders

The traditional perception in finance is that the goal of a corporation should be to maximize the value of the corporation to its owners and hence, the needs of shareholders are considered of utmost importance. It has been posited that the more protection afforded to shareholders at the country level, the more likely they are to use their influence to shape corporate behaviour. Empirical studies across many fields have shown that shareholders can use their legal rights to influence the behaviour of firms. The literature documents how the legal protection of shareholders influence issues such as dividend policy, ownership concentration, and board independence (La Porta et al., 2000, Mitton, 2004, Brockman and Unlu 2009). Environmental, social, and governance concerns are featuring more prominently in investment decisions and a CFA (2017) study shows 73% of respondents indicating they take ESG concerns into account when making investment decisions. Shareholders are becoming increasingly focused on the environmental and social effects caused by the companies they invest in and are incorporating such factors into their investment decisions. ESG-focused shareholder activism is gaining traction as investors call for corporate change and it is anticipated that there will be shareholder-driven accountability in the years to come. Analysis of the performance of almost 11,000 ESG-focused funds spanning the period 2004-2018 found that the performance of ESG and non-ESG focused funds were comparable (Morgan Stanley, 2019), while Darbyshire (2020) notes that over half of ethical and sustainable funds outperform the MSCI World index. The reasons for individual investors decisions can vary from moral and altruistic reasons to considering ESG from a financial risk standpoint, but ultimately the reasons are immaterial. Given that investors are increasingly incorporating environmental and social aspects into their investment decision making process, we expect that shareholders who have a higher degree of legal protection at the country level will use their influence to compel firms to improve environmental performance.

### Employees

Anecdotal and academic evidence suggests that employees care increasingly about environmental and social actions of firms, with a 2013 cross-country survey showing two-thirds of respondents acknowledging they cared more about such issues than they had three years previously, and a large proportion of employees expect to play a role in shaping the environmental direction of a firm (Bains &

Co). The survey further highlights the fact that an important way for firms to attract and maintain top talent is through embracing sustainable practices. In the academic literature, employees have been found to influence environmental strategies of firms (Kitazawa and Sarkis, 2000; Darnall et al, 2008, Alt et al., 2015) and firm environmental performance (Hanna et al, 2000). Alt et al., 2015 find the amount of cooperation between firms and employees and the introduction of proactive environmental strategies are positively related. Darnell et al, 2010 argue that employees are likely influential in a firm's decision to engage in proactive environmental strategies and engaging in such strategies can improve the environmental performance of a firm, while Ramus, 2001 finds that employees can generate innovative ideas that can help with environmental challenges and performance. Given the increase in employee's concern for environmental matters, we expect that well-protected employees will have a positive influence on the environmental performance of a firm.

*Hypothesis 1: Internal Stakeholders who have a higher degree of legal protection at the country level will be positively associated with firm environmental performance.*

### External Stakeholders

We proceed by identifying three sets of external stakeholders; namely regulators, creditors, and the media. While we would also like to include another external stakeholder in our analysis, the consumer, there is no suitable data to act as a proxy for consumer protection available. We separate external and internal stakeholders as we suspect, from previous literature, that the manner in which internal and external stakeholders affect the environmental performance of a firm may differ substantially.

### Creditors

Traditionally, in terms of those who supply capital to firms, the focus has been on shareholders shaping how firms engage in environmental improvement because it is the shareholders who have the leverage to directly advocate for change. However, creditors provide funds to firms to invest and are vital to the growth and survival of a firm. It has been documented in the literature that creditors can also use their rights to influence corporate behaviour and have, in some instances, been found to be more influential than shareholders. For example, Byrne and O'Connor (2012) test the validity of agency models of dividends and find that creditors exert the greater influence over corporate dividend policy. The main priority of creditors is a firm's financial prudence to ensure it can repay its obligations, as well as on the firm sustaining a stable level of credit risk. There are an array of studies demonstrating the link between the quality of corporate governance and firm performance (Brown and Caylor, 2004; Bhagat and Bolton, 2008; Kyere and Ausloos, 2020) and "CRAs and investors most frequently cite governance as the ESG factor that is likely to directly impact creditworthiness" (PRI, 2019). However, recent research finds evidence that environmental factors are increasingly playing a pivotal role. Further, it has been found that ESG factors influences corporate credit ratings (Devalle et al, 2017). As creditors and credit ratings agencies are progressively focusing on environmental issues, A priori, we expect that creditors who are well protected at the country level will use their influence to encourage firms to improve environmental performance.

### Regulators

With respect to the environmental performance of a firm, regulatory bodies are clearly an important influential external stakeholder and often associated with coercive pressures by forcing firms to comply with environmental regulations through penalties and fines. Further, failure to comply with

environmental regulations can lead to poor publicity and large-scale lawsuits causing reputational damage to the firm. Firms that choose to initiate proactive environmental schemes, going beyond simply compliance may gain a first mover advantage and form alliances with regulatory bodies that reduce or move away from regulatory approaches (Darnall et al, 2008). Research on the effect of environmental regulation on corporate decision making has focused on issues ranging from location and investment decision making of firms, as well as firm productivity (Gray and Shadbegian, 1998; Mulatu et al. 2010, Becker, 2011). Within the literature, there have been findings that environmental regulations can affect the performance of the firm both positively and negatively. Positive effects on firm financial performance can emanate through improvements in efficiency and quality, better health and safety and the reduction of waste (Dahlman et al., 2008); while unanticipated costs can impact negatively on the firm (Berrone and Gomez-Majia, 2009).

### Media

The media has long been deemed influential with respect to shaping the corporate reputation of an organization, given that the media is a primary way that the public discovers information regarding the activities of firms and their links to matters of public interest. Einwiller et al., 2010 contend that stakeholders will rely more on the news media to find information on firm attributes that are more important to them; being less reliant on media regarding information of a firm's attributes that are of lesser importance to them. The idea that media can influence corporate environmental performance is often grounded in legitimacy theory, which asserts that firms disclose environmental and social responsibility information in order to suggest a responsible image to their stakeholders. Social legitimacy and economic legitimacy can be distinguished from one another as social legitimacy is monitored through public policy process (Patten 1992). Studies have examined the role that media coverage might have in increasing environmental disclosures of firms and find results to suggest that increasing levels of media coverage of issues relating to the environment cause public concerns, thereby increasing public policy pressure on the firms, in turn leading to increased environmental disclosure (Brown and Deegan, 1998; Deegan et al, 2000). Patten (2002) provides additional evidence suggesting that firms seem to use disclosure as a tool to reduce public policy pressures. As empirical evidence suggests that firms will take action due to media reporting, we would expect a positive relationship between freedom of press and the environmental performance of a firm.

*Hypothesis 2: External Stakeholders who have a higher degree of legal protection at the country level will be positively associated with firm environmental performance.*

### Culture and the influence of stakeholders on corporate environmental performance

The final component of our study refers to culture and environmental performance. To incorporate culture, we turn to Hofstede's Cultural Dimensions Theory (1980), a framework often used in order to differentiate between different national cultures, the dimensions of culture and examine their effect on business. Different countries can have very different cultural norms and the cultural norms that prevail may dictate how different stakeholders interact to achieve their desired outcome. Hofstede defines culture as "the programming of the human mind by which one group of people distinguishes itself from another group". Hofstede (2010) distinguishes six dimensions of national culture; power distance, uncertainty avoidance, masculinity-femininity, long-term versus short-term orientation, restraint versus

indulgence, and individualism versus collectivism<sup>2</sup>. To develop our hypothesis, we focus on individualism versus collectivism. This measure of culture is largely focused on how people perceive themselves in relation to the social groups around them. In individualist societies, the needs of the individual takes precedence over the needs of the group as a whole and are characterized by independence, self-governance and the pursuit of individual happiness. By contrast, in collectivist societies, people may sacrifice their own goals for the common good of everyone else. In effect, in individualist societies the focus is on independence, rather than interdependence which is the focal point of collectivist societies. Such cultural differences can influence a wide array of behaviours, including the social issues that individuals concern themselves with. We contend that cultural differences will also influence how stakeholders use their influence to shape the environmental performance of a firm. Williams and McGuire (2005) have demonstrated that individualist societies are more innovative than collectivist societies and many studies have found a positive relationship between individualism and environmental performance at a country level (Vachon, 2010; Lahuerta-Otero & Gonzalez-Bravo, 2018; Dangelico et al., 2020); while Katz et al (2001) find that active environmental groups are more prevalent in individualist societies. However, Dangelico et al. (2020) find individualism only affects country level environmental performance indirectly through socio-economic variables. Another group of studies examine the relationship between national culture and CSR commitment at the firm level. For example, an empirical study has found that approximately 35% of the variance in CSR commitment by firms can be explained by national level dimensions (Ioannou and Serafeim, 2012). Overall, the relationship between individualism and environmental performance is mixed; Ringov and Zollo, 2007, and Ho et al., 2012 find a negative relationship between individualism and CSR, while Petruzzella et al., 2017 finds no evidence to support their hypothesis of a negative relationship between individualism and the environmental commitment of a firm. They do however find strong evidence that companies that originate in countries that have a tendency towards green behaviour are more likely to be environmentally responsible themselves. The juxtaposition in the literature with respect to how national culture might influence corporate environmental performance leaves an open question. On the one hand, individualism has been documented to foster innovation, which will likely lead to improved environmental performance. On the other hand, individualism and the environmental performance have often been found to be negatively related in the literature. A priori, we expect to find that national culture will influence the environmental performance of a firm.

*Hypothesis 3: National culture matters for firm environmental performance but the relationship between individualism and the environmental behaviour of a firm is ambiguous.*

### **3 Data and variable description**

We investigate whether corporate stakeholders; either internal or external use their country-level rights to influence firms to engage in improved environmental behaviour and whether the national culture that prevails influences this behaviour. We begin our study by consulting the Thomson Reuters Eikon Database and collect data for the period 2008-2019. To be included in the analysis, all firms must have at least three years of data over the twelve-year sample period. We obtain financial and environmental data from 4534 firms from 23 countries; Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Israel, Italy, Japan, Republic of Korea, Mexico, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom and the United States. The largest number of firms

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<sup>2</sup> Hofstede (1980) originally identified four cultural dimensions but this was extended to six (Hofstede, 2010)



are domiciled in the United States, Japan, Australia, and the United Kingdom while the smallest number of firms are domiciled in Portugal, Austria, Finland, and Denmark. For each of the countries in the sample, we next source country-level data relating to shareholder rights, creditor rights, employee rights, media protection, and country level environmental performance.

To capture the level of shareholder protection, we use the anti-self-dealing index sourced from Djankov et al. (2008). Higher values of the anti-self-dealing (Anti SDI) index correspond to higher levels of shareholder rights. The country-level measure of creditor protection is taken from Djankov et al (2007) and each country is assigned a value between 0 and 4, with higher levels implying greater levels of protection. The measure for employee rights is taken from the OECD Employment Protection Legislation Database (2019) and is one of the most widely used sources for labour market regulation and allows for comprehensive comparisons across countries. The employee rights index ranges from 0 to 6 with lower values corresponding to lower levels of employee protection. In many cases, countries with high levels of country level shareholder protection also have high levels of creditor protection (for example New Zealand, Australia, the United Kingdom and Mexico). There are some notable exceptions; the United States and Ireland both have relatively high levels of shareholder protection but low levels of creditor protection while in Germany and the Netherlands, creditor protection is strong while shareholder protection is weak.

To capture media protection, data is sourced from the World Press Freedom index. Countries are assigned a score ranging from 0 to 100, with lower scores indicating a higher degree of press freedom, and higher scores are associated with a lower degree of press freedom. For our measure of the strength of regulation, we use the Environmental Performance Index (EPI) as a proxy. The EPI is a performance-orientated composite that assesses key environmental policy outcomes, with higher scores indicating superior performance (Wendling et al. 2020). Finally, the cultural scores for each country are obtained from the Hofstede online database. Hofstede's Collectivism-Individualism index scores are scaled from zero to a hundred, with higher scores indicating higher levels of individualism. Based on Hofstede (2011), we identify a country as individualist if the score is greater or equal to fifty, while scores of lower than fifty means the country is identified as collectivist.

#### **4. Model**

To test our hypotheses, we apply hierarchical linear modelling (HLM) which simultaneously investigates relationships within and between hierarchical levels of grouped data. As HLM is more efficient at accounting for the variance among variables at different levels, it is widely applied across many disciplines including business, education, and psychology. HLM is the appropriate modelling technique to use when the data in the study form groups in some way (Raudenbush & Bryk, 2002). HLM has the further benefit of allowing the separation of within-group effects and between-group effects. Our sample data structure is nested, and the issue of nested data leads to traditional statistical analysis such as ordinary least-squares (OLS) regression or ANOVA deviating from the assumption of independence (Peugh, 2010). HLM is an OLS regression-based method that considers the hierarchical structure of data and provides a framework for the inclusion of variables at each level that is used for prediction purposes. HLM is a superior technique to analyse nested data as there is no assumption of independence and also avoids Type I errors and biased estimations.

For the model specification, we implement a three-level hierarchical linear model to analyse the effects of corporate stakeholders and national culture on firm-level environmental performance. For our sample data, the annual scores for environmental performance at the firm level are nested within the ( $j = 23$ ) countries, and these 23 countries are nested within 12 years ( $n_i = 12, i = 2008, \dots, 2019$ ). Additionally, 4534 firms ( $k = 1, 2, \dots, 4534$ ) are nested within 23 countries. The HLM model is fitted as follows:

Level 1:

$$y_{ijk} = \beta_{0jk} + \sum_{s=1}^9 \beta_{sjk} x_{sjk} + \varepsilon_{ijk}$$

where  $x_{sjk}$  represents the level 1 predictor of the firm as  $x_{sjk}(s = 1, 2, \dots, 9)$ .

Level 2:

$$\beta_{sjk} = \gamma_{s0k} + \gamma_{sk} x_{sk} + \varepsilon_{sjk}$$

The coefficients  $\beta$  of level 1 are treated as response variables in level 2, where  $x_{sk}$  is the level 2 predictor of the country.

Level 3:

$$\gamma_{sk} = \theta_{s0} + \theta_{s1} x_s + \mu_{sk}$$

The coefficients  $\gamma$  of level 2 are treated as response variables in level 3, where  $x_s$  is the predictor of the year.

## 5. Results and Discussion

### Descriptive results

Table 1 presents the descriptive statistics for both the response variable and explanatory variables. After completing the data cleaning procedure, our final sample contains 29099 observations. The Environment Pillar Score is the response variable that measures firms' environmental performance. The mean score of environmental performance across the sample of firms is 43.72, ranging from 99.02 for the firm with the best environmental performance to as low as 0.03 for the firm with the worst environmental performance. Anti SDI and Employee rights are the explanatory variables that measure the country level protection of the internal stakeholders, the average values of Anti SDI and Employee rights for the sample firms are 0.6 and 1.14, respectively. Creditor rights, the Environmental Performance Index and Press Freedom are the explanatory variables that measure country level protection of the external stakeholders and average 1.83, 69.6 and 14.81 respectively. Finally, Total Assets, Market Capitalisation, Return on Assets and Tobin's Q are the control variables to measure the firm size, profitability, and growth opportunities.

Table 1 Descriptive statistics

Variables	N	Mean	Std. Dev	Min	Max
Environment Pillar Score	29099	42.72	27.47	0.03	99.02
Anti SDI	29099	0.60	0.19	0.17	0.95
Employee rights	29099	1.14	0.92	0.09	4.42
Creditor rights	29099	1.83	1.13	0.00	4.00
Environmental Performance Index	29099	69.60	9.89	42.16	90.68
Press Freedom	29099	14.81	8.95	0.00	49.33
Total Assets	29099	46,415,450.89 <sup>a</sup>	195,624,135.29 <sup>a</sup>	42.29 <sup>a</sup>	3,512,676,427.14 <sup>a</sup>
Market Capitalisation	29099	14,116,568.89 <sup>a</sup>	36,192,088.83 <sup>a</sup>	296.175 <sup>a</sup>	1,304,764,767 <sup>a</sup>
Return on Assets	29099	0.11	0.48	-4.69	80.13
Tobin's Q	29099	1.10	1.64	0.00	78.17

Note a: values in thousand.

The correlation coefficient matrix between variables is presented in table 2.

Table 2 Correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Environment Pillar Score	1									
(2) Anti SDI	-0.209	1								
(3) Creditor rights	0.042	0.421	1.000							
(4) Employee rights	0.274	-0.443	0.438	1						
(5) Environmental Performance Index	0.040	0.023	0.167	0.184	1					
(6) Press Freedom	0.023	-0.051	-0.064	-0.004	-0.625	1				
(7) Total Assets	0.211	-0.055	-0.001	0.064	0.002	0.024	1			
(8) Market Capitalisation	0.285	-0.031	-0.086	-0.072	-0.015	0.009	0.327	1		
(9) Return on Assets	-0.010	0.019	0.006	-0.010	0.003	0.006	-0.035	0.014	1	
(10) Tobin's Q	-0.092	0.087	0.004	-0.091	0.053	-0.064	-0.115	0.076	0.321	1

### Regression results

We begin by testing our first two hypotheses; that stakeholders who are well protected at the country level will use their influence to improve the environmental performance of a firm. The results of our analysis are presented in table 3.

Table 3: HLM for Environmental performance

	<i>Dependent variable: Environment Pillar Score</i>				
	Model 1	Model 2	Model 3	Model 4	Model 5
ln(Total Assets)		2.2360*** (0.1533)	2.1743*** (0.1531)	2.2547*** (0.1532)	2.2014*** (0.1530)
ln(Market Capitalisation)		6.8724*** (0.1698)	6.9115*** (0.1696)	6.8567*** (0.1698)	6.8905*** (0.1694)
Return on Assets		1.5312*** (0.2857)	1.5257*** (0.2858)	1.5348*** (0.2856)	1.5264*** (0.2857)
Tobin's Q		-1.2648*** (0.1058)	-1.2692*** (0.1058)	-1.2647*** (0.1058)	-1.2659*** (0.1058)
Anti.SDI			-1.1847 (2.1309)		3.9552* (2.3864)
Employee rights			6.5497*** (0.5732)		7.3911*** (0.5967)
Creditor rights				-0.8965* (0.4581)	-1.5322*** (0.3900)
EnvirPerform Index				0.2708*** (0.0743)	0.1912*** (0.0565)
Press Freedom				-0.1441** (0.0668)	-0.1726*** (0.0493)
Constant	48.5479*** (0.6872)	-154.3394*** (2.1980)	-165.7145*** (2.9529)	-169.5230*** (6.3565)	-177.8162*** (5.2385)
<b>Years</b>					
ICC	0.000	0.008	0.010	0.003	0.004
<b>Years   Country</b>					
ICC	0.143	0.118	0.055	0.105	0.046
<b>Random Effects</b>					
Var: Years   Country (Intercept)	109.00	65.28	28.69	57.252	23.32
Var: Years (Intercept)	0.00	4.22	5.33	1.582	1.97
Var: Residual	653.98	485.75	486.32	485.630	486.06
Log Likelihood	-135,921.70	-131,577.30	-131,510.30	-131,559.40	-131,483.60
Observations	29,099	29,099	29,099	29,099	29,099
REML-LRT	3504.2***	3262.3***	362.44 ***	2123.50***	362.87***

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

Model 1 in Table 3 is the null model, where only the response variable, country levels and years are included. Based on the values of Interclass Correlation Coefficient (ICC) in the null model, we find that a 14.3% of the variance in the Environment Pillar score corresponds to the variations in the country clustered within each year. The value of ICC regarding years is zero in the null model, which indicates the year-to-year variation has no contributions to the variance of the Environment Pillar score. Random effects in Model 1 also confirm that the variation in the response variable occurs from the variation in the different countries that are clustered by years. Model 2 includes the firm-level control variables, Model 3 includes both the firm-level control variables and variables of internal stakeholders, Model 4 includes both the firm-level control variables and variables of external stakeholders, and finally Model 5 is the full model that includes all variables.

It is evident from model 5 in table 3 that all of the main explanatory variables are statistically significant. With respect to internal stakeholders, the coefficients for shareholder rights and employee

rights are positive and significant, suggesting that when shareholders and employees are well protected, they will use their influence to encourage firms to improve environmental performance. This confirms hypothesis 1 where we posited that internal stakeholders that have a higher degree of legal protection at the country level will be positively associated with firm environmental performance. Our findings suggest that internal stakeholders whose country level rights are well protected will use their influence to pursue non-economic goals as well as economic goals. Our results lend support to the findings of Dyck et al., 2019 who find that when influencing the environmental and social performance of firms, investors around the world are motivated by both financial and social returns. The same study finds that shareholders tend to use their influence to engage firms they already have ownership in on environmental and social issues rather than choosing the strategy of investing in firms that already perform well on these issues.

We next turn to the relationship between external stakeholders and corporate environmental performance. The coefficients on press freedom and environmental regulation are statistically significant and of the expected sign, indicating that better regulation and media protection at the country level is associated with better environmental performance at the firm level. However, the coefficient on creditor rights is negative and in contrast to our expectations that when stakeholders are well protected, they will use their influence to encourage firms to improve environmental performance. One possible explanation for this is that, as creditors, the main priority for this group of external stakeholders is simply to have their initial investment returned to them. Unlike shareholders, the return to creditors is fixed and often more short-term so they may be more likely to use their influence on the company to take actions to ensure they meet their financial obligation to them and consider other factors such as environmental performance only when determining their required rate of return before they decide to invest. We are not contending that the environmental performance does not matter to creditors, rather it may be the case that environmental concerns are considered solely from a risk standpoint and therefore they use the environmental performance of a firm to price risk and do not seek to actively improve corporate environmental performance. It is more likely they will use their influence to ensure that firms do not engage in actions they deem costly. Therefore, our second hypothesis that external stakeholders who have a higher degree of protection at the country level will be positively associated with firm environmental performance only partially holds.

The coefficients on firm size and profitability are positive and statistically significant at the 1% level meaning larger, more profitable firms are associated with better environmental performance. The coefficient on growth opportunities is negative and statistically significant at the 1% level, meaning that firms with large growth opportunities are associated with poorer environmental performance. This may be because fast growing firms tend to be at an earlier stage of their life cycle and more focused on maximizing financial performance.

In summary, our results suggest that when internal stakeholders are well protected at the country level, they will use this protection to positively influence corporate environmental performance; while among the external stakeholders media and regulation are associated positively with firm environmental performance and creditor protection is negatively associated. These findings shed some light on to which of the groups of stakeholders exert the greatest amount of influence on corporate environmental performance. We find that both groups of internal stakeholders will use their influence to improve corporate environmental performance and suggest it is because they are more personally invested in the company and therefore it is likely that the actions of the firm matter more to them. Our findings are in line with Dyck et al., 2019 but are in contrast with some previous studies that argue that when there are

costs associated with improving environmental performance, it is the internal stakeholders who will bear the burden of these costs so external stakeholders who are not faced with such costs are more likely to demand change. There are scholars that find that pressure from external sources such as regulators and activists are the most likely to lead improved corporate environmental performance (Fineman and Clarke, 1996).

We next turn our attention to whether national culture matters and our results suggest that it does. We present our results in table 4. We observe again that all of the explanatory variables support our hypotheses that stakeholders will use their country-level protection to influence corporate environmental performance. The magnitude and signs of the coefficients are similar to those seen in table 3. When we include national culture, it is evident that individualism is significantly negatively associated with firm environmental performance. Our findings are in line with those of Ringov and Zollo, 2007, and Ho et al., 2012 who find that individualism and CSR are negatively related. A priori, as the evidence on the relationship between individualism and environmental performance was mixed, our final hypothesis posited that while national culture matters, we were unsure as to how it would manifest itself. While individualist societies may be more innovative (Williams and McGuire, 2005) and have more active environmental groups (Katz et al, 2001), collectivist societies by their very definition involve individuals seeking a common good over individual happiness and our results suggests that this is the effect that dominates.

Table 4: HLM for Environmental performance (Grouping by culture)

<i>Dependent variable: Environment Pillar Score</i>	
	Model 6
ln(Total Assets)	2.2042*** (0.1530)
ln(Market Capitalisation)	6.8901*** (0.1694)
Return on Assets	1.5272*** (0.2857)
Tobin's Q	-1.2642*** (0.1058)
Anti SDI	4.7711** (2.3958)
Employee rights	7.3247*** (0.5930)
Creditor rights	-1.5928*** (0.3883)
EnvirPerform Index	0.2259*** (0.0588)
Press Freedom	-0.2070*** (0.0521)
Culture = individualist	-2.5685** (1.1883)
Constant	-177.8184*** (5.2713)
<b>Years</b>	
ICC	0.005
<b>Years   Country</b>	
ICC	0.045
<b>Random Effects</b>	
Var: Years   Country (Intercept)	22.77
Var: Years (Intercept)	2.46
Var: Residual	486.05
Log Likelihood	-131480.26
Observations	29099
REML-LRT	310.697***
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

One slight concern we have with the analysis is our chosen measure of shareholder rights, the Anti self-dealing Index. While this is a widely used measure in the literature to capture the legal protection of shareholders at the county-level, there have been some criticisms (Spamann, 2010). In order to ensure robustness, we conduct the analysis again using an alternative measure of shareholder rights, the Rule of Law. The Rule of Law measures the level of legal development, where higher values correspond to a greater level of legal development. The results are presented in table 5. Once again, the coefficient on shareholder rights is positive and significant, and the remaining explanatory variables remain statistically significant indicating that our results are insensitive to the proxy used to measure shareholder protection.

Table 5: Robustness test–Replace Anti SDI to Rule of law

<i>Dependent variable: Environment Pillar Score</i>	
	Model 7
ln(Total Assets)	2.2019*** (0.1530)
ln(Market Capitalisation)	6.8846*** (0.1694)
Return on Assets	1.5246*** (0.2857)
Tobin's Q	-1.2643*** (0.1058)
Rule of law	0.6401* (0.3470)
Employee rights	7.0350*** (0.4885)
Creditor rights	-1.0947*** (0.3343)
EnvirPerform Index	0.1789*** (0.0577)
Press Freedom	-0.1138* (0.0596)
Constant	-181.6567*** (6.2256)
<b>Years</b>	
ICC	0.0042
<b>Years   Country</b>	
ICC	0.0474
<b>Random Effects</b>	
Var: Years   Country (Intercept)	24.293
Var: Years (Intercept)	2.138
Var: Residual	485.927
Log Likelihood	-131,485.20
Observations	29,099
REML–LRT	389.93
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

## 6. Concluding Remarks

In this multi-country study, we examined the influence of different stakeholders on corporate environmental performance, while simultaneously incorporating national culture. Applying hierarchical linear modelling to 4534 firms across 23 countries, we find that when internal stakeholders are well protected at the country level, they will use their influence to positively influence the environmental performance of a firm. When we consider external stakeholders, we find that while media and regulators will use their influence to positively influence firm environmental performance, creditors who are well protected are associated negatively with corporate environmental performance. Finally, we come to the conclusion that the national culture that prevails plays a role in shaping corporate environmental performance.



We argue that internal stakeholders (employees and shareholders) are more personally invested in how the firm is managed and operated and that the environmental performance of the firm matters more to this group of stakeholders. Despite the fact that the burden of the costs of environmental improvements fall on internal stakeholders, when their rights are well protected at the country level, they will use this to influence firms to improve environmental performance. This could be due to a number of factors. Either this group of stakeholders are not exclusively motivated by economic goals but are also socially and morally motivated; or they are focused on long-term rather than short-term goals. It could be argued too that as recent empirical studies have found that improved environmental performance is associated with increased firm value, the motive may not be altruistic at all but rather still in keeping with the goal of maximising individual wealth. It is also apparent that shareholders will try and use their influence from within, effectively using a voice rather than an exit strategy.

When we consider external stakeholders, the evidence we find is mixed. Strong environmental protection sought by regulators and press freedom are associated with increased firm environmental performance as expected. Conversely, we find that when the country level protection of creditors is high, this is associated with lower environmental performance, suggesting that creditors will use their legal protection to negatively influence corporate environmental performance. We suggest that the reason for this is that creditors consider environmental concerns solely from a risk perspective and incorporate environmental risks into the required rate of return at the point of their decision to invest, rather than try to actively influence the environmental behaviour of the firm. In addition, This may be due to the perception that environmental improvements are costly and they may be seeking to curb what they seek as behaviour that could decrease the ability of the firm to repay them.

Finally, we consider whether the national culture that prevails plays a role in shaping corporate environmental performance. We find that national culture matters and that collectivist countries, where the focus is on interdependence and the overall good, are associated with higher environmental performance scores. We argue therefore that this can have important implications as to how the environmental strategy of a firm is devised. In individualist countries, where the focus is on independence and individual happiness, the relative influence of each group of stakeholders will matter more as each is acting more to satisfy their own individual needs and goals.

This study is not without limitations. First, data limitations mean that our analysis is restricted in a number of ways. Our sample is skewed towards more developed economies and does not include developing economies where the economic conditions that prevail likely mean that stakeholders and firms are far less focused on environmental and social issues. Second, we have used the EPI to proxy for environmental regulation at the country level and this may not be ideal. Finally, one of the most important stakeholder groups, the consumer, has been omitted from the analysis as there is no comprehensive dataset on country-level consumer protection. A future area of research could assess the feasibility of developing such a dataset.

Overall, our findings suggest that both stakeholder protection and national culture are important factors for determining the environmental performance of a firm. As environmental risk and climate change have been increasingly important and the subject to much debate, our findings give important insights to how the country-level legal protection of various stakeholders and national culture should be considered by firms when they design and implement environmental practices.

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