The power of the CEO and environmental decoupling

Gull, Ammar; Hussain, Nazim; Khan, Sana; Orij, René ; Mushtaq, Rizwan

Published in:
Business Strategy and the Environment

DOI:
10.1002/bse.3347

Publication date:
2023

Received: 21 March 2022 | Revised: 3 December 2022 | Accepted: 12 December 2022

DOI: 10.1002/bse.3347

RESEARCH ARTICLE

Business Strategy and the Environment

WILEY

The power of the CEO and environmental decoupling

Ammar Ali Gull[1,2] | Nazim Hussain[3] | Sana Akbar Khan[4] | Rizwan Mushtaq[5] | René Orij[6]

[1]Ecole Supérieure des Sciences Commerciales d'Angers (ESSCA), Lyon, France

[2]International School, Vietnam National University, Hanoi, Vietnam

[3]Department of Accounting, University of Groningen, Groningen, The Netherlands

[4]Lyon Catholic University, Lyon, France

[5]OCRE Research Laboratory, EDC Paris Business School, Paris, France

[6]Center for Corporate Reporting, Finance & Tax, Nyenrode Business Universiteit, Breukelen, The Netherlands

Correspondence
Nazim Hussain, Department of Accounting, University of Groningen, Nettelbosje 2, 9747 AE Groningen, The Netherlands.
Email: n.hussain@rug.nl

Abstract

This paper examines the impact of the power of the chief executive officer (CEO) on environmental decoupling. We define environmental decoupling as a gap between firm's claims about the environmental sustainability and actual environmental sustainability performance. Based on the managerial power theory, we argue that powerful managers are more involved in environmental decoupling and use environmental reporting in a more opportunistic manner than their less powerful peers. We analyse a dataset of 4576 firm-year observations of US-listed firms for the period 2002–2017. We find that powerful CEOs decouple firm's environmental performance from environmental reporting. These findings are robust to a battery of analyses and show that powerful CEOs do not show true commitment towards corporate environmental sustainability. The results provide important implications for investors, policymakers and fund managers. Useful future research recommendations are also provided to guide the research in the domain of environmental sustainability.

KEYWORDS
brownwashing, CEO power, environmental decoupling, environmental disclosure, environmental performance, greenwashing

1 | INTRODUCTION

Recent business sustainability research shows that companies are actively engaged in decoupling their actual sustainability performance from their sustainability reporting (García-Sánchez et al., 2021; Sauerwald & Su, 2019; Shahab et al., 2022; Tashman et al., 2019). This decoupling may harm firm value (Hawn & Ioannou, 2016). The majority of the existing studies focus on understanding the outcomes of such decoupling, with very little attention paid to the managerial determinants. Furthermore, there is very little research about decoupling of various sustainability dimensions, that is, the environmental or social dimension. Recently, Hussain, Rigoni, and Cavezzali (2018) argue that business sustainability is a black box if measured globally for a firm's responsible behaviour. They, along with García-Sánchez et al. (2021), further argue that it is problematic from methodological as well as conceptual perspectives and suggest analysing each sustainability dimension separately. Their finding, among others, guides future research and warrants investigating sustainability decoupling on its dimensions level.

In practice, corporations actively engage in decoupling their claims from their actual actions. There are several reasons for such decoupling practices. One of the main reasons is managerial behaviour to use sustainability practices for personal purposes (Crilly et al., 2012). Managers intentionally fake or muddle through the sustainability-related information to achieve personal objectives (Sauerwald & Su, 2019). Faking or over-reporting of sustainability information is known as 'greenwashing', while muddling through or under-reporting is known as 'brownwashing' (Garcia-Sanchez

Abbreviations: .AR(2), Aurellano-Bond test; CEO, Chief Executive Officer; CFO, Chief Financial Officer; CSR, corporate social responsibility; GMM, generalised method of moments; MPT, managerial power theory; PSM, propensity score matching; VIF, variation inflation factor.

et al., 2021). Recently, such corporate actions have attracted the attention of academic research. However, the research dealing with the analysis of the determinants of decoupling practices is at its infancy stage. Therefore, we fill this literature void by providing an original investigation into how managerial power affects environmental decoupling.

To address this research gap on understanding one of the major determinants of environmental decoupling, that is, CEO power (Van Essen et al., 2015), we analyse unbalanced panel data of 4576 firm-year observations of US-listed firms between 2002 and 2017 using the system generalised method of moments (GMM) approach to address the potential issue of endogeneity (García-Sánchez et al., 2021; Shahab et al., 2022). We find that powerful CEOs decouple firm's environmental performance from environmental reporting. This relationship is mainly visible in the poorly governed firms. The extant literature shows that firms with more powerful managers have poor governance (Cheng et al., 2016). This poor governance may lead to value-destroying corporate practices (Hussain et al., 2021). Furthermore, our analysis shows that the decoupling practices concerning environmental sustainability are more likely to happen in the environmentally sensitive industries. The basic reason for such a result is that firms operating in environmentally sensitive industries face more pressure from various stakeholders to pollute less (Hussain, Rigoni, & Cavezzali, 2018). To respond to such mounting pressure, the managers actively fake the environmental sustainability performance. We also note that the CEO power is positively affecting over-reporting and significantly decreasing under-reporting of environmental sustainability performance. Based on the managerial power theory (MPT), we argue that more powerful managers would use environmental reporting in an opportunistic manner. This may lead to over-reporting or under-reporting of firm's actual environmental performance.

Our research contributes to the theory and empirical literature in several ways. Firstly, our study is part of very scant literature on how managerial power can lead to irresponsible corporate behaviour. Recently, some research efforts have been devoted to understanding how managerial power (Shahab et al., 2022), managerial overconfidence (Sauerwald & Su, 2019) and managerial entrenchment (García-Sánchez et al., 2020) can lead to problematic corporate strategies. However, our study is the first to show how managerial power can lead to environmental decoupling. Secondly, our results contribute to the existing literature that advocates for analysis of the sustainability dimensions individually (Gull, Atif, & Hussain, 2022; Hussain, Rigoni, & Cavezzali, 2018). Our study analyses the impact of managerial power on environmental decoupling only and invites future research to analyse the relationship between managerial power and other sustainability dimensions.

Finally, from a theoretical point of view, our study is contributing to the MPT by showing that excessive managerial power can lead to deceitful environmental reporting practices. Our study also contributes to the corporate governance literature by arguing that in the wake of recent calls for more environmentally friendly corporate policies, more powerful corporate governance should be put in place to restrain managers from using corporate policies (i.e. environmental reporting) for opportunistic purposes (Van Essen et al., 2015). In this vein, Hussain, Rigoni, and Orij (2018) show that managerial power in the form of dual role is detrimental for environmental performance. Their argument is based on agency and stakeholder theory. However, we argue and show that MPT can better explain the relationship between the power of a CEO and environmental decoupling. In this manner, our study extends the theoretical arguments of MPT and shows that this theory provides a more logical explanation for some non-financial corporate strategy aspects.

2 | THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

Historically, Weick (1976) initially discussed the term decoupling in organisation research as loosely coupled organisational policies and actions. Decoupling between reporting and performance in the context of CSR has been the topic of many recent studies (see e.g. Ählström, 2010; García-Sánchez et al., 2021; Hawn & Ioannou, 2016; Tashman et al., 2019). The major reasons for such decoupling are difficulty to understand or meet the divergent stakeholder demands (Crilly et al., 2012). Limited resources on the one hand and eagerness to pursue their personal objectives on the other hand motivate managers to decouple sustainability policies from practices (Graafland & Smid, 2019) and actual performance from disclosure (García-Sánchez et al., 2021). Similarly, weak governance that gives rise to more managerial power and entrenchment leads to sustainability decoupling (García-Sánchez et al., 2021).

Recently, academic literature as well as the media has documented many incidents of corporate irresponsible behaviour. The famous greenwashing scandals of British Petroleum and Volkswagen are on the top of this list. In all these major environmental scandals, the underlying motive is to deceive the stakeholders by painting a rosy picture about corporate environmental initiatives (Graafland & Smid, 2019). However, the managerial power role remained under-explored in this context. This creates a void in the corporate sustainability literature. To fill this void, we explore the role of managerial power in decoupling corporate environmental practices. We consider both overstatement and understatement as two forms of decoupling in the context of environmental performance and suggest that decoupling has its foundations in opportunism (Sauerwald & Su, 2019).

Although CSR disclosure and CSR performance are fundamentally coupled, a firm may choose to decouple them as a strategic choice by managers (Sauerwald & Su, 2019). Without monitoring mechanisms, managers behave in their self-interest and make opportunistic disclosure decisions (Cieslak et al., 2021) and hypocritically disclose selective information (Marquis et al., 2016). Existing literature is handicapped theoretically, as there is not enough evidence to support a theory about decoupling. Many researchers have used legitimacy (García-Sánchez et al., 2021) or signalling theory (Jain, 2017) to provide a rationale for the decoupling phenomenon. Shahab et al. (2022) have recently studied the CSR decoupling phenomenon under CEO power. However, their work does not shed sufficient light on the

relevant theoretical lens for the underlying relationship. Other studies, such as Gull, Hussain, et al. (2022), used agency perspective to study CSR decoupling. However, their work is focused on market-based outcomes of CSR decoupling.

In our study context, MPT is the most suitable theoretical framework to explain managerial behaviour in studying corporate environmental decoupling. According to Van Essen et al. (2015), the critique on the agency-theoretical assumption of optimal contracting is central to MPT. Additionally, literature on managerial power shows that more power vested in the CEO role can lead to lower governance quality (Park, 2017). CEOs with more power impose the decisions of their personal choice and undermine the opinions of other executives (Adams et al., 2005). Additionally, literature studying the manipulation of accounting numbers under the influence of a powerful CEO shows that excessive managerial power leads to more earnings management (Mande & Son, 2012; Park, 2017).

Bebchuk et al. (2003) have a more legal approach to MPT but also place CEO power in the context of social-psychological mechanisms within a board context: influence over contracting, board dynamics, financial incentives, information asymmetry and being able to negotiate at arm's length or not. The latter means being equal and acting independently from other parties (i.e. mainly executive directors). In the same vein, Feng et al. (2011) note that powerful CEOs pressurise CFOs to manipulate earning numbers. Environmental decoupling (i.e. over-reporting or under-reporting environmental performance) is an earnings management-like phenomenon. We argue that managers use environmental decoupling practices in their own self-interests. Therefore, MPT provides a solid foundation to justify and assume a strong relationship between managerial power and environmental decoupling.

Similarly, Sauerwald and Su (2019) explain the relationship between CSR decoupling and CEO overconfidence as a function of a cognitive bias but recognise prior literature explaining this relationship by management's opportunistic behaviour, mainly through symbolic management. They find that CEO overconfidence is positively related to the decoupling between the tone of CSR reporting and the firm's actual CSR performance. CSR performance is also put in a context of opportunism by Kim et al. (2012). CSR engagement may be applied in a manager's self-interest to cover up misconduct. Although this seems to be a valid argument, they do not find empirical support for a relationship based on opportunism. Opportunism is the link between the concepts of managerial power and CSR-related decoupling explain the relationship between CSR decoupling and CEO overconfidence as a function of a cognitive bias but recognise prior literature explaining this relationship by management's opportunistic behaviour, mainly through symbolic management. They find that CEO overconfidence is positively related to the decoupling between the tone of CSR reporting and the firm's actual CSR performance. CSR performance is also put in a context of opportunism by Kim et al. (2021). CSR engagement may be applied in a manager's self-interest to cover up misconduct. Although this seems to be a valid argument, they do not find empirical support for a relationship based on opportunism. Opportunism is the link between the concepts of managerial power and CSR-related decoupling.

The above discussion shows some contrasting evidence on outcomes of managerial power. However, the majority of empirical literature and theoretical assertions of MPT support the argument that managerial power is positively linked to environmental decoupling. Based on the above discussion and based in the underlying theoretical rationale we hypothesise the following relationship:

> **Hypothesis.** Ceteris paribus, CEO power is positively linked to environmental decoupling.

3 | METHODOLOGY

3.1 | Data and sample

To test our main hypothesis, we collected data of US-listed firms for the period 2002–2017. We collected data from several sources including Bloomberg, EIKON Refinitiv, EXECUCOMP and Worldscope. To operationalise our proxies for environmental decoupling, we acquire environmental performance and disclosure scores from EIKON Refinitiv and Bloomberg, respectively. We rely on the executive compensation data available from EXECUCOMP to measure CEO power. Data on control variables are sourced from EIKON Refinitiv and Worldscope. We then drop firm-years with missing information required to perform analysis and merge the data from these sources to form an unbalanced panel dataset of 4576 firm-year observations.

3.2 | Measurement of main variables

3.2.1 | Environmental decoupling

Prior studies (Hawn & Ioannou, 2016; Shahab et al., 2022) measure CSR decoupling as the difference between external and internal CSR actions using data from Thomson Reuter's Refinitiv (formerly known as Assets 4). Likewise, we operationalise our proxy of environmental decoupling (*GAP*)[1] as the gap between external and internal environmental actions. Specifically, we measure environmental decoupling as absolute difference between current external and 1-year lagged internal actions scaled by the logged total assets (Hawn & Ioannou, 2016; Shahab et al., 2022). In addition to the *GAP*, we develop two more proxies such as under-reporting and over-reporting, to examine whether firms with powerful CEOs under-report (*UNDER_REPORT*) or over-report (*OVER_REPORT*). *UNDER_REPORT* (*OVER_REPORT*) is measured as the negative (positive) gap between current external and lagged internal environmental actions scaled by the logged total assets.

Some studies (García-Sánchez et al., 2021; Sauerwald & Su, 2019) also measure CSR decoupling as the difference between CSR

[1]Following the Hawn and Ioannou (2016) strategy of measuring CSR decoupling, we used items related to environmental pillar and determined the policy and reporting scores separately. In the next step, we calculate the environmental decoupling as an absolute gap of environmental disclosure and environmental policies.

disclosure/reporting and CSR performance. Likewise, we operationalise our alternate proxy of environmental decoupling (*GAP1*) as the gap between environmental reporting and environmental performance. Specifically, we measure environmental decoupling as absolute difference between current year's Bloomberg environmental disclosure score and 1-year lagged Thomson Reuter's Refinitiv (formerly known as Assets 4) environmental performance score scaled by the logged total assets (Gull, Hussain, et al., 2022; Shahab et al., 2022). Bloomberg provides ESG-related disclosure information for more than 11,000 firms across 80 countries. Similarly, Thomson Reuter's EIKON Refinitiv database provides information on ESG performance for more than 6000 firms globally.

3.2.2 | CEO power

To form our main proxy for CEO power, we follow extant studies (Bebchuk et al., 2011; Shahab et al., 2022) and use CEO's pay slice as an objective and more relevant measure of CEO power because it is based on the relative compensation of the CEO. CEO pay slice portrays the total compensation of CEO as a fraction of the combined total compensation of the top five executives (including the CEO) in the sample firms. Some studies (Garcia-Sanchez et al., 2021; Sheikh, 2019) have also captured CEO power using an index based on the CEO characteristics. We therefore use the same approach to develop an alternative proxy of CEO power. Specifically, we develop an index of the CEO power (*INDEX*) constructed by adding CEO duality (*DUAL*—dummy variable coded 1 if CEO is also chairman of the board and 0 otherwise), CEO board membership (*CEO_BOARD*—dummy variable coded 1 if CEO is also a board member and 0 otherwise) and executive board (*EXEC_BOARD*—dummy variable coded 1 if the proportion of executive directors on the board is higher than 50% and 0 otherwise). The index ranges from 0 to 3; a higher value indicates higher CEO power and vice versa.

3.3 | Model

To investigate the association between CEO power and environmental decoupling, we run the following model using the system GMM regressions. We apply the system GMM estimator to address the issue of simultaneity, unobservable heterogeneity and dynamic panel endogeneity (Abid et al., 2021; Garcia-Sánchez et al., 2021; Shahab et al., 2022). We run GMM estimation of Equation (1) by including the lagged value of CEO power (*LAG_CPS*) as an endogenous variable in regressor with all control variables used in Equation (1). To ensure the accuracy of GMM estimation, we also report the second-difference residuals, that is, Arellano–Bond test for AR(2) and the Hansen test for over-identification. These tests ensure that reported results do not violate the requirements of no serial correlation, and the Hansen test shows that the instruments are valid and do not suffer from over-identifying or overriding restrictions (Arellano & Bond, 1991).

$$DECOUPLING_{it} = \beta_0 + \beta_1(CPS)_{it} + \beta_2(B\_SIZE)_{it} + \beta_3(B\_IND)_{it} + \beta_4(F\_PRO)_{it} + \beta_5(FEM\_CEO)_{it} + \beta_6(CEO\_TEN)_{it} + \beta_7(DUAL)_{it} + \beta_8(TQ)_{it} + \beta_9(ROA)_{it} + \beta_{10}(CAP\_INT)_{it} + \beta_{11}(R\&D\_INT)_{it} + \beta_{12}(SIZE)_{it} + \varepsilon_{it} \quad (1)$$

where $_i$ and $_t$ refer to firm and year, respectively; *DECOUPLING* represents our proxies for environmental decoupling (*GAP*, *GAP1*, *UNDER_REPORT* and *OVER_REPORT*); *CPS* is the CEO power; and the rest of the variables are controls that are likely to affect the level of environmental decoupling (García-Sánchez et al., 2021; Hawn & Ioannou, 2016; Sauerwald & Su, 2019; Shahab et al., 2022). These variables include board size (*B_SIZE*), board independence (*B_IND*), board gender diversity (*F_PRO*), female CEO (*FEM_CEO*), CEO tenure (*CEO_TEN*), CEO duality (*DUAL*), Tobins Q (*TQ*), financial performance (*ROA*), capital intensity (*CAP_INT*), research and development intensity (*R&D_INT*) and firm size (*SIZE*). We also control for industry and year effects as well as cluster standard errors at firm level to control for the differences over time, across firms and industries. All variables are defined in Table 1.

4 | RESULTS

4.1 | Univariate analysis

Panel A of Table 2 reports the descriptive statistics for all variables. The average of environmental decoupling (*GAP*) and CEO power (*CPS*) is 0.0050 and 0.4036, respectively. With regard to control variables, the average board size (*BS*) is 2.3417. On average, 86.23% board members are independent directors (*BIND*) and 15.56% are women (*FPRO*). On average, 2.23% firms have female CEOs (*FEM_CEO*), and the average CEO tenure (*CEO_TEN*) is 6.5441 years. The mean value of CEO and board chair role separation (*DUAL*) is 0.7316. The mean Tobin's Q (*TQ*), return on assets (*ROA*), capital intensity (*CAP_INT*), research and development intensity (*R&D_INT*) and firm size (*SIZE*) are 1.3581, 4.97%, 3.8514, 0.0307 and 16.1808, respectively. Panel B of Table 2 also reports the yearly mean values for CEO power (*CPS*), environmental decoupling (*GAP*), under-reporting (*UNDER_REPORT*) and over-reporting (*OVER_REPORT*). The descriptive statistics are largely in line with a recent US sample-based study (Shahab et al., 2022).

Table 3 reports correlation among all variables used in the analysis. It shows that correlation between environmental decoupling (*GAP*) and CEO power (*CPS*) is positive and statistically significant, providing some initial support to our hypothesis that CEO power is positively associated with environmental decoupling. The correlation among other variables is also below the typical threshold of 0.5, implying that multicollinearity is not an issue. To further explore the issue of multicollinearity, we also check the variance inflation factor (VIF) values. The unreported VIF values were within the acceptable threshold value of 10 on all variables (Abid et al., 2021; Farooq et al., 2022), suggesting that multicollinearity is not an issue.

TABLE 1 Definition of variables

Variable name	Symbol	Definition	Source
Dependent variables			
Environmental decoupling	*GAP*	The absolute gap between current external and lagged internal environmental actions scaled by the log of total assets	EIKON and Worldscope
Under-reporting	*UNDER_REPORT*	Negative gap between current external and lagged internal environmental actions scaled by the log of total assets	Same
Over-reporting	*OVER_REPORT*	Positive gap between current external and lagged internal environmental actions scaled by the log of total assets	Same
Independent variable			
CEO power	*CPS*	CEO's total compensation as a portion of the combined total compensation of the top five executives (including the CEO) in each firm	EXECUCOMP
Control variables			
Board size	*B_SIZE*	Natural log of the number of directors on the board	EIKON
Board independence	*B_IND*	The proportion of independent directors on the board	Same
Board gender diversity	*F_PRO*	The proportion of female directors on the board	Same
Female CEO	*F_CEO*	Dummy variable coded 1 if the CEO is female, 0 otherwise	EXECUCOMP
CEO tenure	*CEO_TEN*	The number of years since the CEO assumed office	Same
CEO duality	*DUAL*	Dummy variable coded 1 if CEO is not the chairman of the board, 0 otherwise	EIKON
Tobin's Q	*TQ*	The sum of market capitalisation and total assets minus the book value of equity over total assets	Worldscope
Profitability	*ROA*	Net profit/loss divided by total assets	Same
Capital intensity	*CAP_INT*	The ratio of total assets to sales	Same
Research and development	*R&D_INT*	Research and development expenditures scaled by sales	Same
Firm size	*F_SIZE*	Natural log of total assets	Same
Additional variables			
Environmental gap	*GAP1*	The absolute gap between current Bloomberg environmental disclosure score and lagged Asset4 environmental performance score scaled by the log of total assets	EIKON, Bloomberg and Worldscope
CEO power index	*INDEX*	An index of the CEO power constructed by adding several characteristics of the CEO. These characteristics are CEO duality (*DUAL*—dummy variable coded 1 if CEO is also chairman of the board and 0 otherwise), CEO board membership (*CEO_BOARD*—dummy variable coded 1 if CEO is also a board member and 0 otherwise) and executive board (*EXEC_BOARD*—dummy variable coded 1 if the proportion of executive directors on the board is higher than 50% and 0 otherwise). The index ranges from 0 to 3, and a higher value indicates higher CEO power and vice versa	EIKON

Note: All continuous variables are winsorised at bottom 1% and top 99% levels.

4.2 | Hypothesis testing

Table 4 (Column 1) presents the results on the relationship between CEO power and environmental decoupling by estimating Equation (1). The coefficient on CEO power (*CPS*) is positive and statistically significant at 1% level, implying that firms with powerful CEOs are more likely to decouple environmental performance. To be precise, one-point increase in the CEP power (*CPS*) is associated with 0.0082

TABLE 2 Descriptive statistics and Descriptive statistics by year for main variables

Panel A: Descriptive statistics					
Variables	**Observation**	**Mean**	**Standard deviation**	**Minimum**	**Maximum**
GAP	4576	0.0050	0.0058	0.0000	0.0417
UNDER_REPORT	1402	−0.0057	0.0047	−0.0290	0.0000
OVER_REPORT	1789	0.0083	0.0061	0.0000	0.0417
CPS	4576	0.4036	0.1194	0.0490	0.7553
B_SIZE	4576	2.3417	0.2202	1.3863	2.7726
B_IND	4576	0.8623	0.0717	0.5000	1.0000
F_PRO	4576	0.1556	0.0930	0.0000	0.4000
F_CEO	4576	0.0223	0.1476	0.0000	1.0000
CEO_TEN	4576	6.5441	6.5540	0.0000	34.0000
DUAL	4576	0.7316	0.4432	0.0000	1.0000
TQ	4576	1.3581	1.3648	0.0316	8.7893
ROA	4576	0.0497	0.0861	−1.0798	0.2951
CAP_INT	4576	3.8514	5.7454	0.2662	37.7057
R&D_INT	4576	0.0307	0.0629	0.0000	0.2994
F_SIZE	4576	16.1808	1.4070	11.7273	19.1601
Panel B: Descriptive statistics by year for main variables					
Year	*CPS*	*GAP*	*UNDER_REPORT*	*OVER_REPORT*	
2003	0.3933	0.0029	−0.0061	0.0079	
2004	0.4048	0.0025	−0.0047	0.0063	
2005	0.4032	0.0034	−0.0059	0.0093	
2006	0.4022	0.0035	−0.0057	0.0080	
2007	0.3916	0.0066	−0.0043	0.0115	
2008	0.4019	0.0062	−0.0043	0.0096	
2009	0.3887	0.0054	−0.0053	0.0080	
2010	0.4110	0.0055	−0.0053	0.0077	
2011	0.4021	0.0053	−0.0059	0.0069	
2012	0.3957	0.0056	−0.0056	0.0073	
2013	0.4122	0.0052	−0.0057	0.0063	
2014	0.4158	0.0058	−0.0059	0.0076	
2015	0.4143	0.0059	−0.0063	0.0071	
2016	0.4059	0.0054	−0.0062	0.0079	
2017	0.4072	0.0052	−0.0059	0.0079	

Notes: This table presents the descriptive statistics. Panel A presents the descriptive statistics for all variables and Panel B shows the mean values by year for independent and dependent variables. All variables are as defined in Table 1.

points increase in the level of environmental decoupling (*GAP*). The economic significance of CEO power on environmental decoupling is also important. For example, an increase in *CPS* by one (sample) standard deviation (e.g. using Table 2) increases the level of environmental decoupling (*GAP*) by approximately 0.6619 [*CPS* (0.4036) × 0.0082/*GAP* (0.0050) = 0.6619], thus confirming that economic significance is also high.

Concerning control variables, Table 4 (Column 1) shows that board size (*B_SIZE*), board gender diversity (*F_PRO*) and Tobin's Q (*TQ*) are positively and significantly associated with environmental decoupling (*GAP*). Board independence (*B_IND*), research and development intensity (*R&D_INT*) and firm size (*SIZE*) are negatively and significantly associated with environmental decoupling (*GAP*). However, female CEO (*FEM_CEO*), CEO tenure (*CEO_TEN*), CEO and board chair separation (*DUAL*), return on assets (*ROA*) and capital intensity (*CAP_INT*) are found to have no significant association with environmental decoupling (*GAP*).

To shed light on the underlying mechanisms, we develop two additional proxies of environmental decoupling (*GAP*), that is, over-reporting (*OVER_REPORT*) and under-reporting (*UNDER_REPORT*). Under-reporting and over-reporting refer to the negative and positive gap between external and internal environmental actions. To perform

TABLE 3 Correlation matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
GAP	1.000														
UNDER_REPORT	−1.000*	1.000													
OVER_REPORT	1.000*		1.000												
CPS	0.050*	−0.030	0.018	1.000											
B_SIZE	0.085*	−0.029	−0.009	−0.043*	1.000										
B_IND	0.106*	−0.057*	−0.013	0.176*	0.265*	1.000									
F_PRO	0.124*	−0.155*	−0.044	0.029*	0.205*	0.208*	1.000								
F_CEO	0.044*	−0.043	0.018	0.009	0.019	0.060*	0.220*	1.000							
CEO_TEN	−0.063*	0.091*	−0.006	0.012	−0.127*	−0.154*	−0.065*	−0.057*	1.000						
DUAL	0.055*	−0.019	0.015	0.055*	0.076*	0.002	0.034*	−0.036*	0.110*	1.000					
TQ	−0.048*	−0.031	−0.033	−0.039*	−0.244*	−0.194*	0.002	0.021	0.074*	0.022	1.000				
ROA	0.036*	−0.021	0.035	0.001	−0.033*	−0.072*	0.038*	0.021	0.042*	0.072*	0.450*	1.000			
CAP_INT	−0.114*	−0.038	−0.078*	−0.112*	0.224*	0.071*	0.040*	−0.022	0.106*	−0.020	−0.342*	−0.231*	1.000		
R&D_INT	0.019	−0.133*	−0.042	−0.022	−0.195*	−0.068*	−0.065*	−0.008	0.040*	−0.055*	0.390*	−0.011	−0.160*	1.000	
F_SIZE	0.129*	−0.052	−0.061*	−0.083*	0.454*	0.229*	0.204*	0.036*	−0.055*	0.099*	−0.412*	−0.116*	0.439*	−0.202*	1.000

Notes: This table presents results of correlation analysis for all variables used in this study. All variables are as defined in Table 1.
*Significance at the 0.05 level.

TABLE 4 CEO power and environmental decoupling

	(1)	(2)	(3)
Variables	**GAP**	**UNDER_REPORT**	**OVER_REPORT**
L.GAP/L.UNDER_REPORT/L.OVER_REPORT	−0.1017*** (−4.10)	0.0510*** (4.85)	−0.1607*** (−7.36)
CPS	0.0082*** (6.98)	−0.0030*** (−5.73)	0.0030* (1.70)
B_SIZE	0.0034** (2.30)	0.0018*** (2.86)	0.0022* (1.70)
B_IND	−0.0131*** (−2.89)	0.0002 (0.11)	−0.0033 (−1.07)
F_PRO	0.0150*** (4.95)	−0.0003 (−0.23)	0.0321*** (9.97)
F_CEO	−0.0026 (−1.20)	0.0032*** (6.85)	−0.0094*** (−9.64)
CEO_TEN	0.0000 (0.31)	−0.0000 (−0.08)	0.0002*** (6.36)
DUAL	0.0003 (0.51)	−0.0007*** (−3.00)	0.0000 (0.06)
TQ	0.0005*** (2.93)	−0.0000 (−0.01)	−0.0002 (−0.86)
ROA	−0.0031 (−1.20)	−0.0113*** (−8.60)	−0.0024* (−1.70)
CAP_INT	−0.0001 (−0.76)	−0.0001** (−2.43)	−0.0005*** (−2.81)
R&D_INT	−0.0832*** (−3.37)	0.0076 (0.76)	−0.0603*** (−5.19)
F_SIZE	−0.0009** (−2.12)	−0.0001 (−0.21)	−0.0017** (−2.36)
Intercept	0.0596 (0.94)	−0.0294 (−1.24)	0.0331 (1.02)
Observations	3013	677	864
Industry and year	Yes	Yes	Yes
Arellano–Bond test AR(2)	−1.255	0.443	−0.389
AR(2) *p*-value	(0.209)	(0.658)	(0.697)
Hansen test	172.3	116.8	119.5
Hansen *p*-value	(0.313)	(1.000)	(0.275)

Notes: This table presents results for the relationship between CEO power and environmental decoupling using the system GMM regressions. *, ** and *** represent significance at 0.1, 0.05 and 0.01 levels, respectively. *T* statistics are given in parenthesis. All variables are as defined in Table 1.

this analysis, we re-estimate Equation (1) by replacing our main dependent variable (*GAP*) with under-reporting (*UNDER_REPORT*) and over-reporting (*OVER_REPORT*). The results of this analysis are reported in Table 4, which shows that the coefficient on CEO power (*CPS*) is negatively (positively) significant under Column 2 (3), suggesting that positive association between powerful CEOs and environmental decoupling is mainly driven by their higher tendency to over-report environmental performance.

4.3 | Channel analysis

4.3.1 | CEO power and environmental decoupling: The role of firm-level corporate governance quality

Prior business sustainability literature suggests having strong governance mechanisms in place to ensure that managers refrain from using corporate sustainability policies in an opportunistic manner (Hussain, Rigoni, & Orij, 2018; Van Essen et al., 2015). Although we control for board-level governance mechanisms, that is, board size, board independence and board gender diversity in our regression model, it is still possible that overall firm-level corporate governance quality may have an impact on the association between CEO power and environmental decoupling. To empirically investigate these arguments, we split our sample into firms with high corporate governance quality (*High Governance*) and those with low corporate governance quality (*Low Governance*) using the corporate governance performance score from ASSET4. The *High Governance* sample includes firms with an ASSET4 corporate governance performance score higher than the industry-year average of corporate governance performance score, and the *Low Governance* sample consists of firms whose ASSET4 corporate governance performance score is less than the industry-year average of corporate governance performance score. We re-estimate Equation (1) using these subsamples and report the results under Columns 1–2 of Table 5. The positive association between CEO power (*CPS*) and environmental decoupling (*GAP*) is only significant for the sample of *Low Governance* firms, suggesting that powerful CEOs are likely to use environmental reporting more opportunistically in firms with low corporate governance quality. This finding is largely in line with prior studies (Hussain, Rigoni, & Orij, 2018; Van Essen et al., 2015).

4.3.2 | CEO power and environmental decoupling: The role of industry nature

Arguably, firms use sustainability reports as a tool to gain and maintain legitimacy from stakeholders (Hawn & Ioannou, 2016), and

TABLE 5 Channel analysis

	(1)	(2)	(3)	
	High governance	Low governance	Sensitive industries	Non-sensitive industries
Variables			*GAP*	
L.GAP	0.0783 (0.60)	0.4108*** (2.60)	0.6033*** (34.28)	0.2847** (2.32)
CPS	0.0045 (0.53)	0.0031* (1.89)	0.0054*** (6.56)	0.0010 (0.82)
B_SIZE	0.0055 (0.73)	−0.0011 (−0.59)	0.0044*** (10.52)	0.0014 (1.01)
B_IND	0.0477*** (2.60)	0.0020 (0.28)	0.0204*** (10.16)	0.0068* (1.77)
F_PRO	−0.0047 (−0.28)	0.0036 (0.87)	−0.0038 (−1.50)	0.0041 (1.42)
F_CEO	0.0155** (2.52)	−0.0005 (−0.31)	0.0086*** (10.33)	−0.0022** (−2.51)
CEO_TEN	−0.0001 (−0.30)	−0.0000 (−0.65)	−0.0000 (−1.20)	−0.0001** (−2.24)
DUAL	−0.0012 (−0.43)	0.0005 (0.58)	0.0024*** (6.46)	0.0005 (1.18)
TQ	0.0013 (0.89)	0.0008*** (2.60)	0.0008*** (6.55)	0.0003** (2.00)
ROA	−0.0017 (−0.10)	−0.0044 (−1.48)	0.0078*** (5.00)	−0.0048*** (−2.99)
CAP_INT	−0.0000 (−0.07)	−0.0002*** (−3.45)	−0.0005*** (−5.55)	−0.0001*** (−3.18)
R&D_INT	−0.0451** (−2.23)	0.0042 (0.55)	−0.0004 (−0.25)	−0.0059 (−0.69)
F_SIZE	0.0001 (0.06)	0.0014*** (2.94)	0.0002 (0.68)	0.0003 (0.90)
Intercept	−0.0485** (−2.01)	−0.0206*** (−2.60)	−0.0291*** (−6.76)	−0.0128** (−2.03)
Observations	1841	1172	928	2,085
Industry and year	Yes	Yes	Yes	Yes
Arellano–Bond test AR(2)	0.413	−0.453	1.414	1.326
AR(2) *p*-value	(0.680)	(0.651)	(0.157)	(0.185)
Hansen test	28.50	39.34	102.5	47.77
Hansen *p*-value	(0.595)	(0.323)	(0.860)	(0.482)

Notes: This table presents results for the relationship between CEO power and environmental decoupling using sub-samples of firms with high vs. low corporate governance quality and firms belonging to environmentally sensitive vs. non-sensitive industries. *, ** and *** represent significance at 0.1, 0.05 and 0.01 levels, respectively. *T* statistics are given in parenthesis. All variables are as defined in Table 1.

therefore, the quality of sustainability reporting might be contingent on the industry characteristics. The quality of reporting is likely to vary substantially across industries. Industry characteristics shape the way firms report their activities since firms use sustainability reports as a tool to gain and maintain legitimacy from stakeholders (Hawn & Ioannou, 2016). In particular, firms belonging to industries whose operations negatively impact the environment may disclose and report more information as compared to those operating in other industries. Along similar lines, Hawn and Ioannou (2016) find that firms operating in environmentally sensitive industries (e.g. the natural resources industry) are under more scrutiny and pressure from various stakeholders to do well with respect to sustainability because of the nature of their operations. Consequently, firms belonging to environmentally sensitive industries are more susceptible to engage in decoupling practices than firm operating in other industries. Young & Marais, 2012), and therefore, the quality of sustainability reporting might be contingent on the industry characteristics. The quality of reporting is likely to vary substantially across industries. Industry characteristics shape the way firms report their activities since firms use sustainability reports as a tool to gain and maintain legitimacy from stakeholders (Hawn & Ioannou, 2016; Young & Marais, 2012). In particular, firms belonging to industries whose operations negatively impact the environment may disclose and report more information as compared to those operating in other industries. Along similar lines, Hawn and Ioannou (2016) find that firms operating in environmentally sensitive industries (e.g. the natural resources industry) are under more scrutiny and pressure from various stakeholders to do well with respect to sustainability because of the nature of their operations. Consequently, firms belonging to environmentally sensitive industries are more susceptible to engage in decoupling practices than firm operating in other industries.

Based on the above discussion, we argue that the effect of CEO power on environmental decoupling may also vary across industries. In order to empirically validate these arguments, we created two sub-samples based on the industry to which sample firms belong, one representing the firms operating in environmentally sensitive industries and the other representing the firms belonging to non-sensitive industries,[2] and re-estimate Equation (1). The results of analyses reported in Table 5 (Columns 3 and 4) reveals that CEO power (*CPS*) is

[2]Firms operating in the agricultural, chemical, forestry, fishing and mining, metal, petroleum and construction industries are included in the environmentally sensitive industries sample, and the rest of the firms are included in the non-sensitive industries sample (Cho et al., 2010; Nadeem et al., 2020).

TABLE 6 PSM

Panel A: CEO power and environmental decoupling using matched sample			
	(1)	(2)	(3)
	Pre-match probit	Post-match probit	GMM
Variable	*CPS_DUMMY*	*CPS_DUMMY*	*GAP*
L.GAP			−0.0725*** (−3.91)
CPS			0.0012** (2.19)
B_SIZE	−0.3491*** (−3.07)	0.1153 (0.88)	0.0020** (2.51)
B_IND	3.4372*** (11.13)	−0.4135 (−1.14)	−0.0003 (−0.12)
F_PRO	0.4487* (1.87)	−0.1329 (−0.48)	0.0055*** (4.01)
F_CEO	−0.0057 (−0.04)	−0.0554 (−0.37)	−0.0030** (−2.39)
CEO_TEN	0.0111*** (3.64)	0.0011 (0.31)	0.0000 (1.06)
DUAL	0.0756* (1.67)	0.0146 (0.29)	0.0006 (1.26)
TQ	−0.0426** (−2.10)	0.0099 (0.44)	0.0005*** (3.21)
ROA	0.2258 (0.85)	0.0565 (0.19)	−0.0031** (−2.17)
CAP_INT	0.0008 (0.11)	−0.0018 (−0.24)	0.0000 (0.42)
R&D_INT	−1.5856*** (−3.70)	0.3559 (0.73)	−0.0204 (−1.26)
F_SIZE	−0.0754*** (−3.64)	0.0065 (0.28)	−0.0010** (−1.96)
Intercept	−1.1984** (−2.31)	−0.0371 (−0.07)	−0.0068 (−0.00)
Observations	4570	3450	2283
Industry and year	Yes	Yes	Yes
Pseudo R^2	0.044	0.004	
Arellano–Bond test AR(2)			−0.876
AR(2) *p*-value			(0.381)
Hansen test			248.8
Hansen *p*-value			(0.189)

Panel B: Post-matched sample univariate analysis

Variable	Treated *(N = 1725)*	Control *(N = 1725)*	Mean differences	*t*-statistics
B_SIZE	2.3459	2.3416	0.0043	0.57
B_IND	0.8633	0.8658	−0.0025	−1.07
F_PRO	0.1556	0.1566	−0.0011	−0.35
F_CEO	0.0220	0.0249	−0.0029	−0.56
CEO_TEN	6.5565	6.4313	0.1252	0.56
DUAL	0.7275	0.7206	0.0070	0.46
TQ	1.3791	1.3500	0.0291	0.62
ROA	0.0501	0.0487	0.0015	0.48
CAP_INT	4.1436	4.1401	0.0035	0.02
R&D_INT	0.0309	0.0309	0.0000	−0.02
F_SIZE	16.2370	16.2370	0.0000	0.00

Notes: Panel A presents results for the relationship between CEO power and environmental decoupling using the matched sample. Panel B presents the univariate mean comparisons between the treatment and control firms' characteristics and their corresponding t-statistics. *CPS_DUMMY* is coded equal to 1 if the CEO power (*CPS*) is higher than industry-year average and 0 otherwise. Firms are classified as treatment if the CEO power is higher than industry-year average and otherwise as control. *, **a nd *** represent significance at 0.1, 0.05 and 0.01 levelsm respectively. *T* statistics are given in parenthesis. All variables are as defined in Table 1.

positively associated with environmental decoupling (*GAP*) in both sub-samples. However, the positive association between CEO power (*CPS*) and environmental decoupling (*GAP*) is statistically significant only for the sub-sample of firms belonging to the environmentally sensitive industries. These results validate our arguments that powerful CEOs of firms belonging to environmentally sensitive industries

TABLE 7 Robustness analysis

	(1)	(2)	(3)
Variables	**GAP**	***GAP1***[a]	**GAP1**
L.GAP/L.GAP1	0.1187*** (7.03)	−0.1901*** (−4.33)	−0.1507*** (−14.76)
INDEX	0.0015*** (2.84)	0.0045* (1.71)	
CPS			0.0075*** (10.43)
B_SIZE	0.0034** (2.30)	0.0031 (0.79)	0.0047*** (7.28)
B_IND	−0.0131*** (−2.89)	0.0168*** (2.94)	0.0088*** (4.93)
F_PRO	0.0150*** (4.95)	−0.0023 (−0.35)	0.0178*** (9.10)
F_CEO	−0.0026 (−1.20)	−0.0029 (−0.47)	−0.0170*** (−6.83)
CEO_TEN	0.0000 (0.31)	0.0001** (2.15)	0.0002*** (9.64)
DUAL[b]			0.0017*** (4.20)
TQ	0.0006*** (4.38)	−0.0023*** (−2.80)	−0.0014*** (−10.26)
ROA	0.0006 (0.41)	0.0019 (0.37)	0.0034*** (3.63)
CAP_INT	0.0000 (0.00)	0.0015** (2.41)	0.0001 (1.15)
R&D_INT	0.0139 (0.94)	0.2275*** (3.42)	0.0737*** (7.95)
F_SIZE	0.0006 (1.47)	−0.0024 (−1.05)	0.0011* (1.90)
Intercept	−0.0002 (−0.03)	−0.0567 (−0.33)	0.0488 (0.43)
Observations	2,623	1,165	1,178
Industry and year	Yes	Yes	Yes
Arellano–Bond test AR(2)	0.328	−1.124	−0.906
AR(2) *p*-value	(0.743)	(0.261)	(0.365)
Hansen test	179.2	80.17	183
Hansen *p*-value	(0.300)	(0.505)	(0.911)

Notes: This table presents results for the relationship between CEO power and environmental decoupling using alternate proxy of CEO power (*INDEX*) and environmental decoupling (*GAP1*). *, ** and *** represent significance at 0.1, 0.05 and 0.01 levels, respectively. T statistics are given in parenthesis. All variables are as defined in Table 1.

[a]The Bloomberg ESG disclosure scores are not available for the years prior to 2006, therefore the sample period changes to 2006–2017 from 2002 to 2017 when we use the *GAP1* as dependent variable.

[b]We do not control for *DUALITY* in Models 1 and 2 to avoid the potential issue of multicollinearity because it is also included in the CEO power index (*INDEX*).

are more susceptible to engage in decoupling practices for showcasing or seeking legitimacy from stakeholders and suggest that the nature of the industry to which firms belong drives the nexus of CEO power and environmental decoupling.

4.4 | Propensity score matching (PSM)

Although we have used the system GMM estimates throughout the paper to rule out the potential endogeneity concerns, our findings may still be biased because of the self-selection bias. We therefore employ the propensity score matching (PSM) technique to ensure that our main findings are not subject to self-selection bias (Shahab et al., 2022). For instance, less powerful CEOs may also engage in decoupling practices, or a higher level of environmental decoupling may be due to the other firm level practices (i.e. control variables) but not due to high CEO power. To perform PSM, we first create a treatment dummy (*CPS_DUMMY*), which is set equal to 1 if the CEO power is higher than the industry-year average and 0 otherwise. Second, we run a probit regression using *CPS_DUMMY* as dependent variable and after controlling for all variables used in Equation (1). The results are reported under Column 1 of Table 6 (Panel A). Finally, we match treatment firms with control firms using the predicted values from the probit regression and find 3450 matches.[3]

To ensure that matching procedures have been applied accurately and firms in the treatment and control groups are not different based on the observable characteristics, we perform two diagnostic tests. First, we re-estimate Equation (1) using probit regression and *CPS_DUMMY* as dependent variable on post-matched sample. The results of this analysis reported under Column 2 of Table 6 (Panel A) show no significant coefficient on any explanatory variable, suggesting no significant difference between the treatment and control group. In addition to this, the coefficients under post-match sample analysis are less in magnitude than under pre-match sample analysis.

[3]The matching was performed using the nearest neighbour option and setting the calibre difference at 1% level.

The pseudo R^2 has also decreased significantly, suggesting that PSM has been applied correctly. Second, we check the differences in the mean of each observable characteristic between the treatment and control group using the post-match samples. Panel B of Table 6 shows no significant differences in the observable characteristics (i.e. control variables) between the treatment and control groups. Taken together, these diagnostic tests suggest that PSM removes all the observable differences in the explanatory variables other than those relating to CEO power.

Finally, we re-estimate Equation (1) using the matched sample and report these results under Column 3 of Table 6 (Panel A). The coefficient on *CPS* is significantly positive, suggesting that CEO power increases the level of environmental decoupling, hence confirming our main finding.

4.5 | Robustness analysis

As explained in Section 3.2, prior studies use different proxies to capture environmental decoupling and CEO power. Therefore, it is important to examine whether our main findings are sensitive to the alternate measures of environmental decoupling and CEO power. First, we replace our main proxy of the CEO power (i.e. *CPS*) with an index (*INDEX*) based on the CEO characteristics (Garcia-Sanchez et al., 2021). We then replace our main proxy of environmental decoupling (*GAP*) with an alternate measure of environmental decoupling based on the gap between the environmental disclosure score from Bloomberg and the environmental performance score from EIKON (Gull, Hussain, et al., 2022; Shahab et al., 2022). The results using alternate measures are reported under Columns 1–3 of Table 7, which also show a positively significant association between CEO power and environmental decoupling.

5 | DISCUSSION AND CONCLUSIONS

This research examines the impact of CEO power on environmental decoupling. Based on the MPT, we argue that powerful managers are involved in decoupling corporate environmental performance from reporting and using reporting in an opportunistic manner. This phenomenon persists because managers either under-invest in environmental practices and greenwash or over-invest in environmental projects and, in fear of losing their job, under-report (García-Sánchez et al., 2021). Decoupling has two sides: overstating and understating performance in reporting. García-Sánchez et al. (2021) argue that understating activities is equally as harmful as overstating activities. Firms that understate environmental performance are sometimes called 'brown' (Delmas & Burbano, 2011), which leads to the term brownwashing. Overstating is like greenwashing, which is environmental overstating (García-Sánchez et al., 2021). Greenwashing is a symbolic strategy whereby firms overstate their CSR performance in their disclosures to strengthen their legitimacy (Tashman et al., 2019).

To test this hypothesis, we analyse a dataset of 4576 firm-year observations of US-listed firms for the period 2002–2017. Our analysis shows that powerful CEOs decouple environmental performance from reporting. These findings are robust to a battery of analysis and show that powerful CEOs are less committed to corporate environmental sustainability. These results support the MPT's conjecture. We note that a more powerful manager creates a significant gap between actual performance and reported performance. These results are consistent for over-reporting as well as for under-reporting.

We find that powerful CEOs decouple firm's environmental performance from environmental reporting. These results are more pronounced in poorly governed firms. The extant literature shows that firms with more powerful managers have poor governance (Bebchuk et al., 2011). This poor governance may lead to value-destroying corporate practices (Hussain et al., 2021). Furthermore, our analysis shows that powerful CEOs of firms operating in the environmentally sensitive industries engage in environmental sustainability more than firms belonging to non-sensitive industries. The basic reason for such a result is that firms operating in environmentally sensitive industries face more pressure from various stakeholders to pollute less (Hussain, Rigoni, & Cavezzali, 2018). To respond to such mounting pressure, the managers actively fake the environmental sustainability performance.

Additionally, we note that CEO power is positively affecting over-reporting and significantly decreasing under-reporting of environmental sustainability performance. These findings are robust to a battery of analyses and show that powerful CEOs do not show true commitment to corporate environmental sustainability. Based on the MPT, we argue that more powerful managers would use environmental reporting in an opportunistic manner. This may lead to over-reporting or under-reporting of firm's actual environmental performance.

We find a support that managerial power promotes symbolic management, which is the type of opportunistic behaviour resulting in environmental decoupling. These findings, in line with Sauerwald and Su (2019), show that CEOs with more power engage in opportunistic symbolic management to protect their self-interest by adhering to stakeholder expectations, to comply with institutional norms and corporate governance standards and to protect their self-image. Furthermore, we contribute to the findings of García-Sánchez et al. (2020) by showing that entrenched managers (i.e. powerful CEOs) not only create CSR facades but engage in decoupling at environmental pillar of CSR.

Our study contributes to the growing corporate environmental sustainability literature in various ways: First, it shows that there exists a gap between corporate claims and actual environmental performance. Second, it shows that excessive managerial power is detrimental for corporate environmental sustainability. Third, we show that managers use reporting not only for greenwashing purposes, but they can also under-report to avoid the excessive attention of various stakeholder groups, including economic profit-seeking investors. Our research takes a step further in analysing the determinant of corporate greenwashing/brownwashing. So far, research has mainly focused on understanding the determinants of CSR decoupling with no attention towards environmental decoupling (see, e.g. García-Sánchez

et al., 2021; Shahab et al., 2022). We contribute to this growing literature. Finally, we extend the arguments of MPT by showing that managerial power is not only detrimental for economic policies and economic rent extraction, but it may harm society by promoting environmentally unsustainable corporate practices.

The findings of our research are useful for investment managers, policymakers and individual investors. All the parties seeking green investment opportunities must look closely at the focal firm's environmental practice, and the investment decisions must not be solely based upon self-reported information. Similarly, we urge policymakers to guide future policies about auditing all the corporate claims concerning environmental sustainability. We also encourage future researchers to look more closely at the sub-dimensions of each CSR pillar in order to better understand the determinants of responsible corporate behaviour.

We acknowledge that our research suffers from some limitations. First, there is an inherent limitation of the environmental decoupling measure. Existing literature shows that various rating scores diverge somewhat. Future research may use a more refined measure of environmental decoupling using a qualitative approach. Second, the process of matching data of firms from various data sources caused the loss of a significant number of observations. This may impact the results of future research. Third, we acknowledge that personal abilities and other personality traits may moderate this underlying relationship between CEO power and environmental decoupling. We encourage future research aimed at testing such moderating relationships. Finally, we encourage future research to test the underlying relationship in international settings. Extant literature shows that managers behave differently in different institutional settings. Future research analysing the environmental decoupling phenomenon under CEO power in strong or weak institutional settings may yield interesting results.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

ORCID

Nazim Hussain https://orcid.org/0000-0003-2873-5001
Sana Akbar Khan https://orcid.org/0000-0002-7633-8177
René Orij https://orcid.org/0000-0002-3660-0505

REFERENCES

Abid, A., Gull, A. A., Hussain, N., & Nguyen, D. K. (2021). Risk governance and bank risk-taking behavior: Evidence from Asian banks. *Journal of International Financial Markets, Institutions and Money*, *75*, 101466. https://doi.org/10.1016/j.intfin.2021.101466

Adams, R. B., Almeida, H., & Ferreira, D. (2005). Powerful CEOs and their impact on corporate performance. *The Review of Financial Studies*, *18*(4), 1403–1432. https://doi.org/10.1093/rfs/hhi030

Ählström, J. (2010). Corporate response to CSO criticism: Decoupling the corporate responsibility discourse from business practice. *Corporate Social Responsibility and Environmental Management*, *17*(2), 70–80. https://doi.org/10.1002/csr.232

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies*, *58*(2), 277–297. https://doi.org/10.2307/2297968

Bebchuk, L. A., Cremers, M., & Peyer, U. (2011). The CEO pay slice. *Journal of Financial Economics*, *102*(1), 199–221. https://doi.org/10.1016/j.jfineco.2011.05.006

Bebchuk, L. A., Fried, J. M., & Walker, D. I. (2002). Managerial power and rent extraction in the design of executive compensation. *University of Chicago Law Review*, *69*, 751–846. https://doi.org/10.2307/1600632

Cheng, Q., Lee, J., & Shevlin, T. (2016). Internal governance and real earnings management. *The Accounting Review*, *91*(4), 1051–1085.

Cho, C. H., Roberts, R. W., & Patten, D. M. (2010). The language of US corporate environmental disclosure. *Accounting, Organizations and Society*, *35*(4), 431–443. https://doi.org/10.2308/accr-51275

Cieslak, K., Hamberg, M., & Vural, D. (2021). Executive compensation disclosure, ownership concentration and dual-class firms: An analysis of Swedish data. *Journal of International Accounting, Auditing and Taxation*, *45*, 100429. https://doi.org/10.1016/j.intaccaudtax.2021.100429

Crilly, D., Zollo, M., & Hansen, M. T. (2012). Faking it or muddling through? Understanding decoupling in response to stakeholder pressures. *Academy of Management Journal*, *55*(6), 1429–1448. https://doi.org/10.5465/amj.2010.0697

Delmas, M. A., & Burbano, V. C. (2011). The drivers of greenwashing. *California Management Review*, *54*(1), 64–87. https://doi.org/10.1525/cmr.2011.54.1.64

Farooq, M. U., Su, K., Boubaker, S., & Gull, A. A. (2022). Does gender promote ethical and risk-averse behavior among CEOs? An illustration through related-party transactions. *Finance Research Letters*,*47*(Part B),102730. https://doi.org/10.1016/j.frl.2022.102730

Feng, M., Ge, W., Luo, S., & Shevlin, T. (2011). Why do CFOs become involved in material accounting manipulations? *Journal of Accounting and Economics*, *51*(1–2), 21–36. https://doi.org/10.1016/j.jacceco.2010.09.005

Garcia-Sanchez, I. M., Raimo, N., & Vitolla, F. (2021). CEO power and integrated reporting. *Meditari Accountancy Research*, *29*(4), 908–942. https://doi.org/10.1108/MEDAR-11-2019-0604

García-Sánchez, I. M., Hussain, N., Khan, S. A., & Martínez-Ferrero, J. (2020). Managerial entrenchment, corporate social responsibility, and earnings management. *Corporate Social Responsibility and Environmental Management*, *27*(4), 1818–1833. https://doi.org/10.1002/csr.1928

García-Sánchez, I. M., Hussain, N., Khan, S. A., & Martínez-Ferrero, J. (2021). Do markets punish or reward corporate social responsibility decoupling? *Business & Society*, *60*(6), 1431–1467. https://doi.org/10.1177/0007650319898839

Graafland, J., & Smid, H. (2019). Decoupling among CSR policies, programs, and impacts: An empirical study. *Business & Society*, *58*(2), 231–267. https://doi.org/10.1177/0007650316647951

Gull, A. A., Atif, M., & Hussain, N. (2022). Board gender composition and waste management: Cross-country evidence. *The British Accounting Review*, 101097. https://doi.org/10.1016/j.bar.2022.101097

Gull, A. A., Hussain, N., Khan, S. A., Khan, Z., & Saeed, A. (2022). Governing corporate social responsibility decoupling: The effect of the governance committee on corporate social responsibility decoupling. *Journal of Business Ethics*, 1–26. https://doi.org/10.1007/s10551-022-05181-3

Hawn, O., & Ioannou, I. (2016). Mind the gap: The interplay between external and internal actions in the case of corporate social responsibility. *Strategic Management Journal*, *37*(13), 2569–2588. https://doi.org/10.1002/smj.2464

Hussain, N., García-Sánchez, I. M., Khan, S. A., Khan, Z., & Martínez-Ferrero, J. (2021). Connecting the dots: Do financial analysts help corporate boards improve corporate social responsibility? *British Journal of Management*, 1–27. https://doi.org/10.1111/1467-8551.12586

Hussain, N., Rigoni, U., & Cavezzali, E. (2018). Does it pay to be sustainable? Looking inside the black box of the relationship between

sustainability performance and financial performance. *Corporate Social Responsibility and Environmental Management*, *25*(6), 1198–1211. https://doi.org/10.1002/csr.1631

Hussain, N., Rigoni, U., & Orij, R. P. (2018). Corporate governance and sustainability performance: Analysis of triple bottom line performance. *Journal of Business Ethics*, *149*(2), 411–432. https://doi.org/10.1007/s10551-016-3099-5

Jain, T. (2017). Decoupling corporate social orientations: A cross-national analysis. *Business & Society*, *56*(7), 1033–1067. https://doi.org/10.1177/0007650315610609

Kim, Y., Park, M. S., & Wier, B. (2012). Is earnings quality associated with corporate social responsibility? *The Accounting Review*, *87*(3), 761-796.

Mande, V., & Son, M. (2012). CEO centrality and meeting or beating analysts' earnings forecasts. *Journal of Business Finance & Accounting*, *39* (1–2, 112), 82–112. https://doi.org/10.1111/j.1468-5957.2011.02262.x

Marquis, C., Toffel, M. W., & Zhou, Y. (2016). Scrutiny, norms, and selective disclosure: A global study of greenwashing. *Organization Science*, *27*(2), 483–504. https://doi.org/10.1287/orsc.2015.1039

Nadeem, M., Bahadar, S., Gull, A. A., & Iqbal, U. (2020). Are women eco-friendly? Board gender diversity and environmental innovation. *Business Strategy and the Environment*, *29*(8), 3146–3161. https://doi.org/10.1002/bse.2563

Park, K. (2017). Pay disparities within top management teams and earning management. *Journal of Accounting and Public Policy*, *36*(1), 59–81. https://doi.org/10.1016/j.jaccpubpol.2016.11.002

Sauerwald, S., & Su, W. (2019). CEO overconfidence and CSR decoupling. *Corporate Governance: An International Review*, *27*(4), 283–300. https://doi.org/10.1111/corg.12279

Shahab, Y., Gull, A. A., Ahsan, T., & Mushtaq, R. (2022). CEO power and corporate social responsibility decoupling. *Applied Economics Letters*, *29*(21), 1965–1969. https://doi.org/10.1080/13504851.2021.1966368

Sheikh, S. (2019). An examination of the dimensions of CEO power and corporate social responsibility. *Review of Accounting and Finance*, *18*(2), 221–244. https://doi.org/10.1108/RAF-01-2018-0034

Tashman, P., Marano, V., & Kostova, T. (2019). Walking the walk or talking the talk? Corporate social responsibility decoupling in emerging market multinationals. *Journal of International Business Studies*, *50*(2), 153–171. https://doi.org/10.1057/s41267-018-0171-7

Van Essen, M., Otten, J., & Carberry, E. J. (2015). Assessing managerial power theory: A meta-analytic approach to understanding the determinants of CEO compensation. *Journal of Management*, *41*(1), 164–202. https://doi.org/10.1177/0149206311429378

Weick, K. E. (1976). Educational organizations as loosely coupled systems. *Administrative Science Quarterly*, *21*, 1–19. https://doi.org/10.2307/2391875

How to cite this article: Gull, A. A., Hussain, N., Khan, S. A., Mushtaq, R., & Orij, R. (2023). The power of the CEO and environmental decoupling. *Business Strategy and the Environment*, *32*(6), 3951–3964. https://doi.org/10.1002/bse.3347