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Research Article

A Study on the Relationship Between Top Management Team Political Connections and Corporate Environmental, Social and Governance (ESG) Strategy Formulation: A Political Economy Analysis Based on the Context of China and the WTO

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ABSTRACT

This study examines how top management team politics affect firm environmental, social and governance (ESG) strategies in China's WTO-shaped regulatory and economic environment. This study uses a quantitative research method to examine 2,150 A-share listed Chinese firms' ESG ratings, and governance disclosures from 2013 to 2022 in various non-financial sectors. A comprehensive study of political relationships' impact on ESG initiatives uses multiple regression models. The findings of research suggest that politics positively affect ESG performance, suggesting that politically connected corporations may embrace more ESG practices due to greater laws and government aims. Strong corporate governance procedures including board independence, openness, and accountability oversight and enforcement prevent symbolic. Environmental innovation increases the effect of political connections on ESG performance, and companies that invest in green technologies meet regulatory standards and acquire a competitive edge by fulfilling global environmental norms and appealing to global stakeholders. This analysis supports political economics and corporate governance theories by showing that political relationships alone cannot deliver significant ESG performance without strong governance institutions and innovative environmental practices. Political links affect sustainable firm strategy through corporate governance and green innovation, according to the findings. The study also boosts sustainable development in politically affected economies by showing that good governance frameworks can leverage political relationships to accomplish national policy goals and international standards, aligning enterprises with WTO expectations. This greatly impacts business and politics. By optimising ESG outcomes through governance improvements, green innovation, and political ties, corporate executives can enhance their reputation, fulfill legal duties, and meet market demands for sustainable practices.

Keywords: Political Connections, ESG Performance, Corporate Governance, Green Innovation, Sustainable Development.

INTRODUCTION

In today's world, companies need strong environmental, social and governance (ESG) strategies to thrive. Rapid industrial growth and global trade integration in China require sustainable corporate practices, making ESG crucial. ESG factors—encompassing risk management, transparency, and investment choices—have become essential as businesses face rising expectations. Issues like climate change, social inequality, and governance challenges are fueling demands from investors, consumers, and governments for greater responsibility and sustainable action. Forward-thinking companies are responding, turning ESG into a core element of their strategy

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to build trust, enhance resilience, and secure long-term success in a changing landscape. ESG emphasises a company's environmental stewardship, including waste and pollution reduction, resource conservation, and climate change mitigation. Company treatment of employees, suppliers, customers, and communities is assessed socially. Final governance includes leadership, executive pay, audits, internal controls, and shareholder rights. A company's social impact is assessed by its treatment of employees, suppliers, customers, and communities. ESG criteria in corporate strategies help companies meet global sustainability goals, mitigate risks, and seize opportunities. Globally, ESG standards are about competitive advantage, not just corporate responsibility (Ejarque & Campos, 2020). Chinese companies see ESG as a way to attract foreign investors and meet global standards, not just corporate responsibility. ESG-rich firms are more profitable and systemically resilient. During recessions, such firms outperform less sustainable peers in stock price stability and profitability. This trend indicates that investors are investing more in ESG companies. Sustainable investment funds' assets reached $1 trillion in 2021, highlighting the growing importance of sustainability in corporate strategy (Capurro, Fiorentino, Galeotti, & Garzella, 2023). ESG frameworks help Chinese companies meet global trade standards and environmental and social goals, making them sustainable development leaders.

WTO Impact on Chinese Corporate Governance and Economic Policies

The 2001 WTO membership changed China's economy, including corporate governance reforms to meet global standards. China's policies and regulations reflect WTO principles of open markets, fair competition, and the rule of law (Dye, 2023). Chinese companies adopted ESG governance standards that emphasize transparency, fair competition, and regulatory compliance due to WTO rules. WTO affects China beyond trade. The government strengthened environmental laws, IP rights, and state-owned enterprise governance. The WTO's Trade Policy Review Mechanism and periodic reviews improved China's trade and investment laws and transparency. These reviews suggested reforms to align state-owned enterprise governance, IP rights protection, and environmental regulations with international standards. WTO environmental requirements also shaped China's policies. To promote green development, the 14th Five-Year Plan required renewable energy, emissions controls, and corporate ESG reporting. These plans support the WTO's sustainable trade initiative, demonstrating China's environmental concerns in economic policy (Capurro et al., 2023; Muthugulu-Ugoda, 2021).

China's ESG governance improved indirectly because WTO membership required firms to meet international trade standards, improving transparency, financial disclosures, and governance. Chinese companies must follow international trade rules to compete globally, so they tighten governance. Increase corporate transparency, financial disclosures, and executive pay. World-class WTO governance reforms make China's companies more appealing to foreign investors and accountability-driven stakeholders. ESG strategies and WTO policies matter in China. As its economy grows, the country's ESG policies are scrutinized globally. By following WTO guidelines and promoting strong ESG standards, China improves its international standing and sets a regional standard for corporate governance and sustainable economic development. Chinese companies' WTO-influenced ESG strategies are essential to sustainable and equitable global trade (Aviyanti, Nik Amah, Andriani, & Widiastuti, 2022; Ejarque & Campos, 2020; Radu Florea & Ramona Florea, 2013).

Problem Statement

In today's globalized world, ESG strategies are crucial to corporate sustainability and long-term success. China's unique political and economic landscape makes it an intriguing study subject as global corporate transparency and responsibility pressures, especially within the WTO, grow. Political connections at the top of Chinese corporations complicate ESG strategy formulation, affecting regulatory compliance, resource access, and social responsibility. Politics can help firms access government networks, align with state priorities, and get ESG funding, but they can also reduce transparency and governance. Politics can hinder ESG progress due to favoritism, conflicts of interest, and accountability (Amanda & Na'Im, 2024; Hu, Cheng, & Li, 2024; Pratiwi, Fuadah, & Yunisvita, 2024). This study fills a critical gap in understanding how political connections affect ESG strategies in China.

This study found that corporate governance transparency, accountability, and independence moderate political connections and ESG outcomes. WTO standards have improved Chinese corporate governance by emphasizing transparency, independence, and accountability. Genuine ESG commitments require independent boards, open reporting, and accountability. Companies with strong governance structures can use political connections constructively because checks and balances prevent favoritism and superficial compliance. Thus, this study examines how board independence, transparency, and accountability moderate political connections and ESG performance, providing a nuanced view of political influence and corporate governance.

Green innovation, a growing part of ESG strategies that support global environmental goals and WTO sustainability standards, complicates this relationship. Green innovation makes a company a proactive contributor to sustainable development by developing green technologies, products, and Practises. Political

connections boost ESG performance through green innovation, which helps firms develop sustainable practices and technologies (Amankwaa & Gough, 2022; Meng, Li, & Yang, 2023; Zaman, Nadeem, & Carvajal, 2021). Green innovation boosts sustainable growth by promoting environmental compliance and giving firms an edge in international markets. Green innovation may help politically connected firms improve the environment and legitimize ESG. ESG relies on green innovation, and this study examines how innovation-driven sustainability can improve political connections' ESG outcomes.

Understanding how political connections and corporate governance affect ESG strategies in China's unique regulatory environment is crucial. Political connection, commercial governance, and green innovation in China's unique regulatory framework demonstrate worldwide compliance and sustainable business practices. Unbiased boards can reduce conflicts of interest and ensure ESG strategies support the company's long-term goals rather than political gain. Governance transparency lets stakeholders assess a firm's ESG efforts, holding politically connected firms accountable for sustainability. Accountability mechanisms reinforce the firm's stakeholder and regulatory responsibilities, ensuring political connections lead to ESG results. This study shows how strong governance can turn political influence into sustainable corporate development when political connections and governance dimensions interact (Agyeman et al., 2022; Esan, Nwobu, Adeyanju, & Adeyemi, 2022).

Political connections and governance—board independence, transparency, and accountability—may help the firm achieve ESG goals. Each governance dimension may boost the firm's ESG commitment when combined with political influence. An independent board with politically connected executives can fund, strategies, and responsibly manage ESG initiatives. Transparency increases stakeholder trust and makes ESG efforts credible and accessible to external parties, boosting political support for sustainability. Accountability and political connections prevent influence abuse, ensuring the firm's ESG initiatives meet regulatory and ethical standards. The study examines how each governance dimension interacts with political connections to reveal governance practices that allow firms to responsibly use political capital to achieve significant ESG outcomes (Hardiningsih, Srimindarti, Anggana Lisiantara, & Kartika, 2024; Mashhood, Ullah, & Loudahi, 2022; Umar, Kenourgios, & Papathanasiou, 2020; Zhang, Sallehuddin, Saad, & Zhou, 2021).

This study examines how top management's political connections affect Chinese corporations' ESG strategies, particularly corporate governance and green innovation. Chinese firms' political connections can help or hurt ESG goals, depending on governance and green innovation. China's WTO membership and changing corporate governance landscape require firms to balance domestic regulations with international sustainability standards, making this study timely. This study examines how political connections, governance structures, and green innovation shape ESG strategies to understand China's political-economic forces affecting sustainable corporate practices. This research will advance political economy and ESG scholarship and guide policymakers and corporate leaders seeking sustainable business practices in politically influenced markets.

THEORETICAL BACKGROUND

Political economy, corporate governance, and ESG strategy formulation study how political connections drive company strategies in China's dynamic market, where global conventions like the WTO increasingly influence business practices. According to Political Economy Theory, government policies, political relationships, and economic practices affect company behaviour. Political links provide corporations access to important information, regulatory advantages, and preferred government contracts, altering ESG practices. The state oversees China's economy, thus political capital matters. Political capital—the influence and resources corporate leaders obtain from their political connections—can be used strategically to strengthen the firm's market position and secure its survival and growth in a highly regulated environment (Cuevas-González et al., 2022; Ma et al., 2024; L. Xue, Dong, & Zha, 2023).

Corporate Governance Theory explores how shareholders, directors, and management work collaboratively to run firms efficiently, transparently, and accountable. ESG principles must be integrated into strategic planning and operations with robust governance, says this idea. ESG strategies demand independent, responsible, and transparent governance, per Corporate Governance Theory. Political interference can diminish openness and misalign management and shareholders. Politically affiliated enterprises may emphasize political goals over corporate accountability and ESG compliance due to conflicting loyalties (Jansen, 2021; Umar et al., 2020; Zhang et al., 2021). In China, where the state runs the economy, political connections can help or damage ESG efforts positively or negatively.

Companies' ESG Strategy Formulation frameworks incorporate environmental, social, and governance considerations. Compliance with environmental, social, and regulatory standards creates corporate value. ESG methods help companies manage risks and grasp opportunities. China's political connections, which priorities

green legislation, social welfare, and sustainable development, may affect a firm's ESG initiatives. Politically connected firms may priorities' environmental and social equality. Political connections may incentivize corporations to overlook compliance and bribe for short-term political rewards over ESG (Ma et al., 2024; L. Xue et al., 2023).

ESG strategies of Chinese corporations are investigated utilizing political economy and corporate governance theories. Politics influence China's huge and complex economy's corporate governance and ESG strategies. This study explores political-economic elements to improve ESG strategy design in politically impacted markets. These theories say political links might help or hurt business ESG goals (Agapova & Garanina, 2024; Annesi, Battaglia, Ceglia, & Mercuri, 2024). Understand how political influences drive ESG implementation in scenarios where government and corporate interests intersect to improve global corporate responsibility and sustainability strategies.

Review of Previous Research

company strategy publications and Chinese and international political links highlight how complex these connections affect strategic company conduct, including ESG strategy adoption and implementation (J. Li & Li, 2022; Qi, Zhang, Wang, & Liu, 2022). This review examines how corporate political connections affect business behaviour using different studies. Several Chinese studies have revealed that political links between corporations and government officials or state institutions greatly affect company strategies. Politically connected firms have better financing, less regulatory impediments, and more competitive advantages, which can affect their sustainability and social welfare plans. Political connection simplify resource procurement and regulatory oversight, allowing companies to make significant ESG investments. Politics can fund ESG projects or encourage dangerous or expensive behaviours. While Political backing for ESG projects has strategic advantages, political connections can make corporations satisfied to use ESG standards as a cushion rather than sustainability. Politics can boost or damage corporate ESG (Q. Xue, Wang, Ji, & Wei, 2023).

Research outside China shows regional differences but similar patterns (Alazzani, Wan-Hussin, Jones, & Al-hadi, 2021). Politically connected firms in Italy and France were more likely to receive government bailouts and face fewer environmental and governance regulations, according to (Q. Xue et al., 2023). Political connections can shield firms from regulations, undermining ESG efforts. Political connections can help navigate complex bureaucratic environments and may improve ESG compliance due to increased government scrutiny in emerging economies like Brazil and India (Hardiningsih et al., 2024). Political connections are also critiqued in literature. Political connections affect corporate strategies depending on their nature and depth, according to (Cuevas-González et al., 2022). Political connections can boost a firm's reputation by aligning its strategies with national development goals, including ESG practices, in strong governance environments. These connections may enable unethical regulation evasion and manipulation that harm ESG strategy implementation in weak governance environments (L. Xue et al., 2023).

Strategic political connections for ESG concerns have been debated for long-term versus short-term effects. Ma et al. (2024) found that political connections without ESG principles may have short-term benefits but not last. This integration requires strategically using political connections to improve ESG compliance rather than bypassing them. The literature explains how political connections affect corporate strategy and ESG strategy. These connections enable ESG measures, but governance and corporate sustainability risks exist. These relationships may support ESG goals, but more research is needed in a rapidly changing WTO-influenced global regulatory landscape. Politics affect different locations differently, with better governance boosting advantages and poorer governance enabling immoral practices, according to international studies.

Hypothesis Formulation

Political connections in corporate leadership affect a firm's commitment to sustainability and ESG performance. Political connections can help companies implement strong ESG strategies by providing critical information, regulatory support, and favorable financing or other strategic advantages. Politically connected companies are more likely to meet regulatory ESG requirements by aligning with state priorities. Aligning with government goals may give politically connected firms a reputational edge and better ESG resources. By complying with or leading state-endorsed sustainability efforts, the firm's political connection could improve ESG performance and boost its image among regulators and stakeholders. Politically related companies must have solid ESG practices to maintain their brand and regulatory position owing to increased scrutiny. Due to their government ties, politically connected firms are scrutinized more, so they priorities ESG standards to maintain their public and regulatory standing (Agapova & Garanina, 2024; Annesi et al., 2024). Politically connected firms must meet domestic and international corporate responsibility standards due to high visibility, especially as China promotes sustainable development in line with global norms. As corporate responsibility models, political connections may give firms the resources and motivation to excel in ESG areas. By aligning their ESG strategies

with government priorities, politically connected firms can improve their performance (Qi et al., 2022). Political connections may improve ESG outcomes, says this hypothesis.

H1: Politically connected enterprises have superior ESG plans because they align with state goals and have government resources.

ESG initiatives require transparency, accountability, and long-term planning, which good corporate governance fosters. Corporate governance principles like independent boards, transparent reporting, and accountability promote ethics and resource sustainability. Governance dimensions reduce self-serving behaviour and ensure the firm's ESG commitments are kept and aligned with long-term strategic goals. Firms with strong governance can implement ESG practices more consistently because governance mechanisms monitor and enforce ESG standards. Corporate governance protects sustainability goals from short-term interests and opaque decision-making, improving ESG performance (Destrée, 2022). Stakeholders trust transparent and accountable ESG efforts, so good governance practices boost credibility. Independent boards can oversee ESG initiatives impartially, reducing conflicts of interest and ensuring effective efforts. Building trust and meeting stakeholder expectations, transparent reporting lets investors and regulators track the firm's ESG progress. Strong governance institutionalizes accountability and fosters ESG practice improvement, helping firms adapt to sustainability and regulatory changes (Agapova & Garanina, 2024; Umar et al., 2020; L. Xue et al., 2023). This hypothesis states that quality governance improves ESG performance, especially corporate integrity and oversight. Based on literature, H2 is as follows:

H2: Better governance structures, such as Independent, transparent, and accountable boards improve ESG performance.

Green innovation in ESG strategy boosts political connections' positive effects on a firm's ESG performance by showing environmental responsibility. Green innovation boosts your brand and attracts environmentally concerned investors and stakeholders by reducing environmental impact and meeting global sustainability laws. Politically connected corporations that invest in green innovation may receive legislative backing and funding for environmental operations, becoming sustainability leaders. This proactive strategy indicates that such enterprises respect government legislation and international environmental norms, optimizing political connection' ESG benefits. ESG initiatives by politically connected corporations gain credibility when stakeholders view their green innovation operations as environmental solutions rather than compliance (Hu et al., 2024; Muthugulu-Ugoda, 2021). Politically linked corporations can overcome public suspicion and demonstrate their commitment to sustainable development with green innovation in ESG initiatives. The sense of political power as opportunistic is reduced. This proactive sustainability approach helps these enterprises comply with regulations and earn a competitive edge by supporting government sustainability goals (Amankwaa & Gough, 2022; Pratiwi et al., 2024). Green innovation integrates company activities with regulatory agencies and the market for responsible environmental policies, moderating political connections and ESG performance.

H3: The positive impact of political connections on ESG strategy formulation is strengthened by the level of green innovation within the firm.

Board independence, openness, and accountability support or constrain firm sustainability initiatives, affecting political connection and ESG performance. Each governance pillar filters political capital into sustainable firm practices, affecting ESG outcomes because of political links. Independent boards allow corporations to better exploit political connection for ESG performance by aligning political influence with strategic goals and avoiding conflicts of interest (Aviyanti et al., 2022; Capurro et al., 2023). A lack of board independence may allow political connections to tilt the firm's ambitions towards political interests rather than sustainability goals, hurting ESG outcomes and possibly misaligning corporate operations with long-term sustainability aspirations. Governance transparency decreases political connection' impact on ESG performance by enhancing accountability and stakeholder confidence. Transparent, politically linked companies are more accountable for ESG initiatives since stakeholders can see their sustainability goals and progress. This openness ensures political relationships enhance ESG initiatives, not only compliance or sustainability. Accountability mechanisms reinforce this alignment by using political connection for ESG goals rather than short-term political gains (Hu et al., 2024; Pratiwi et al., 2024). This hypothesis examines how robust governance systems can promote or reduce political impact on sustainable company practices and whether political influence affects ESG outcomes. Based on the literature, H4 is as follows:

H4: Political connections affect ESG performance depending on corporate governance dimensions like board independence, transparency, and accountability.

Political connections improve ESG performance when paired with diverse governance dimensions since each governance feature enhances political links' positive impact on sustainability practices. An impartial board

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oversees ESG activities to align them with long-term strategic goals rather than short-term political restrictions, helping firms harness political relationships. Political links affect ESG results based on board independence, accountability, and openness. Transparent reporting and stakeholder communication show politically connected firms' ESG plans are real and meet regulatory and societal criteria, reducing public distrust (Radu Florea & Ramona Florea, 2013). Accountability mechanisms ensure the corporation satisfies stakeholder and regulatory requirements, boosting political connection' ESG benefits. Governance systems avoid political influence abuses in politically connected companies, making ESG initiatives more trustworthy and successful. Board independence, transparency, and accountability promote sustainability transparency, monitoring, and responsibility when combined with political connections (Umar et al., 2020). Political power combined with actual ESG objectives promotes ESG outcomes, increasing the firm's sustainability commitment and public and regulatory reputation. Based on the literature, H5 is as follows:

H5: Each dimension of corporate governance, when combined with political connections, positively influences ESG performance.

The extensive literature review shows how political connections shape corporate ESG strategies in China, where politics permeates economic and regulatory frameworks. The studies reviewed show that political connection can significantly impact corporate behaviour, particularly in resource access, regulatory interactions, and ESG strategy formulation and implementation. These connections can help, but they also complicate corporate governance and ESG reporting transparency. Political connections balance strategic advantage with governance failures and decreased transparency, which can hurt corporate sustainability. Domestic politics and international regulatory frameworks like the WTO complicate ESG strategy development and implementation. Political connections affect corporate practices, and this dynamic is crucial as global sustainability standards become more important. This literature review encourages a detailed empirical study and emphasises the importance of strong corporate governance structures and international regulatory compliance in improving political connections' ESG strategy effects. This review's hypotheses will be tested to better understand these relationships, which may help policymakers, corporate leaders, and stakeholders promote corporate responsibility and sustainability worldwide. Strong governance structures, when combined with political influence, optimize ESG initiatives, ensuring sustainability and regulatory compliance.

METHODOLOGY

Research Design and Approach

China's WTO obligations make quantitative research ideal for studying the complex relationship between top management's political connections and Chinese corporations' ESG strategies. Regression analysis determines how political affiliations affect Chinese corporate ESG and sustainability. This study studies how corporate governance structures affect political connection and ESG outcomes, potentially revealing whether strong frameworks strengthen or weaken political connection. A quantitative approach is needed to understand how political connections shape the Chinese industry's ESG strategy. Financial reports, ESG ratings, and executive interviews will examine how top management political capital affects ESG initiatives. We can find significant corporate governance and political correlations and patterns by integrating these data sources and using advanced statistical methods. Methodological rigor and statistical precision give policymakers and corporate executives administering ESG policies in politically active China concrete insights. Quantifying these relationships will enable objective analysis of political connections and governance practices, improving ESG outcomes in a market where politics affect corporate decision-making (Annesi et al., 2024; Qi et al., 2022).

China's WTO commitments, domestic politics, and global corporate governance make this study relevant. WTO standards, political connections, and governance frameworks are examined to determine how international regulatory pressures affect Chinese corporate policies and sustainability. Understanding the complex relationship between WTO variables, political connections, and corporate governance will illuminate China's ESG strategy drivers and how political economy affects corporate sustainability globally. This comprehensive approach covers Chinese political-economic interactions at home and WTO standards and pressures abroad. A holistic approach is needed to develop theoretically sound and practically feasible recommendations to improve global trade system corporate ESG practices (Agapova & Garanina, 2024; J. Li & Li, 2022; Q. Xue et al., 2023). The research uses quantitative and qualitative data to understand political ties' impact on firm ESG practices.

Population and Data Sample

This comprehensive study examines Chinese A-share listed companies from 2013 to 2022 using a 2145 firms dataset using long-term ESG strategy and governance advancements in China's dynamic regulatory environment.

The large population allows long-term analysis of corporate governance and ESG strategy formulation trends and patterns in China's rapid economic development and regulatory changes. A-share listed companies provide a consistent and reliable dataset for analyzing political connections' effects on corporate ESG practises due to strict reporting standards and Chinese Securities Regulatory Commission scrutiny. The study excludes banks and insurers for data comparability. Unique financial structures and business models separate it from non-financial sectors, explaining its exclusion. The study uses only non-financial companies to ensure a homogenous sample and avoid data analysis distortions. This method sharpens the research, allowing more accurate assessments of how non-financial entities implement ESG influenced by top management's political connections. Political connections' effects on non-financial firms' ESG results can be better assessed due to the dataset's sector homogeneity and Chinese Securities Regulatory Commission examination.

To prevent distortions from anomalous financial health and focus on stable, operationally representative firms, ST and PT entities are omitted. These companies rarely follow market trends due to their unusual financial health. Leaving these companies out of the sample ensures that the study's findings are more representative of stable and ordinarily functioning enterprises, revealing the systemic effects of political connections on well-operated firms' ESG strategies in China's regulatory framework and under global trade policies like the WTO. This carefully selected sample informs policymakers, corporate leaders, and stakeholders on political influence, governance, and ESG practices, boosting the study's credibility.

Table 1 with each variable's definition, symbol, and source helps you structure and communicate variable measurements for quantitative analysis in your study of Chinese A-share listed companies. This information is detailed in Table 1:

Table 1. Variable Measurements

Variable Name	Variable Definition	Variable Symbol	Data Source
ESG Performance	Measures the effectiveness of a firm's environmental, social, and governance strategies.	ESG	Wind ESG, Bloomberg ESG, MSCI ESG Ratings, CSI ESG Scores
Political Connections	Represents the extent of connection between top management and government officials.	PC	Company Annual Reports, Government records
Corporate Governance	Assesses the quality of governance structures, such as board independence, audit committee effectiveness, and transparency in reporting.	CG	Wind Financial Terminal, Bloomberg, Company Annual Reports
Firm Size	Logarithm of total assets, used as a proxy for the size of the company.	Size	Wind Financial Terminal, Bloomberg
Firm Age	Number of years since the company was established.	Age	Wind Financial Terminal, Bloomberg
State-Owned	Binary indicator where 1 represents state-owned enterprises and 0 represents private enterprises.	SOE	Company Annual Reports
Market Capitalization	Total market value of a company's outstanding shares.	Market Cap	Wind Financial Terminal, Bloomberg
Industry Type	Categorical variable representing the sector in which the company operates.	Industry	Wind Financial Terminal, Bloomberg
Return on Assets	Net income is divided by total assets, indicating how efficiently a company utilizes its assets to generate earnings.	ROA	Wind Financial Terminal, Bloomberg
Green Innovation	Counts the number of green patents filed by the company as an indicator of its commitment to environmental innovation.	GI	Patent databases, Company sustainability reports
Year Fixed Effects	Controls for any specific effects that particular years might have on the dependent variable, accounting for time-related variability.	Year	Data set year labels
Industry Fixed Effects	Controls for effects specific to industries that might influence the dependent variable, ensuring that industry-related factors do not bias the results.	Industry	Industry classification codes in data sources

The dataset allows a nuanced study of ESG performance, political connections, corporate governance quality,

firm size, and green innovation.

Model Specifications

An econometric model can examine how top management team political connections affect corporate ESG performance. We can structure econometric equations using the variables:

The econometric model is structured to measure the direct impact of top management's political connections on corporate ESG performance:

$$ESG_i = \beta_0 + \beta_1 PC_i + \beta_2 CG_i + \beta_3 Size_i + \beta_4 Age_i + \beta_5 SOE_i + \beta_6 MarketCap_i + \beta_7 Industry_i + \beta_8 ROA_i + \beta_9 GI_i + \epsilon$$

An interaction term between political connections and green innovation is included to assess how green innovation may moderate the relationship between political connections and ESG performance:

$$ESG_i = \beta_0 + \beta_1 PC_i + \beta_2 CG_i + \beta_3 Size_i + \beta_4 Age_i + \beta_5 SOE_i + \beta_6 MarketCap_i$$
$$+\beta_7 Industry_i + \beta_8 ROA_i + \beta_9 GI_i + \beta_9 (PC_i \times GI_i) + \epsilon$$

To assess top management's political connections' direct impact on corporate ESG performance, the basic econometric model controls for firm-specific factors. ESG performance (ESG_i) measures firm i's sustainability outcomes in this model. Political connections (PC_i), which measure the firm's leadership's political connection and ESG practices, are the main independent variable. Control variables like corporate governance, firm size, and age affect ESG initiative resources and stability (CG_i, T_i, B_i). The model distinguishes state-owned enterprises and measures financial strength with a dummy variable for SOE and MarketCap. Industry dummies (i) account for sector-specific factors, ROA indicates profitability, and GI shows the firm's environmental commitment. The error term (ϵ_i) accounts for unobserved factors affecting ESG performance, ensuring the model only reflects the variables' effects. To study how green innovation moderates the relationship between political connections and ESG performance, the model is expanded to include an interaction term ($PC_i \times GI_i$) Green innovation can strengthen or change political connections on ESG outcomes. The interaction term should be positive and statistically significant to show that firms with strong political connection and a commitment to green innovation perform better ESG. This expanded model shows how environmental innovation can boost or moderate political connection, suggesting that political connections may improve ESG performance depending on a firm's green innovation. ESG performance is comprehensively examined in the base and interaction-enhanced models, which focus on the complex dynamics between political connections, governance, and innovation in shaping sustainable corporate strategies. The model additionally includes year and industry fixed effects to reduce time-related and sector-specific biases and clarify variable effects.

A corporate behaviour study must consider ethics, especially when handling sensitive data like political connections and corporate governance practices. This study keeps firms' and individuals' privacy confidential. All data is handled carefully to prevent unauthorised disclosure of public and private information. Any data from direct interactions or interviews with company executives is anonymised before analysis to avoid identifying specific entities or individuals. Personal and firm data from executive interviews will be anonymized to comply with local and international data protection laws. The research follows all local and international data protection laws and ethical standards. Integrity and respect for participants' rights and reputations ensure robust, credible, respectful, and just research.

RESULTS

Table 2 shows the distribution and central tendencies of key variables used in this study. The sample firms' political connection average is 3.157, with a median of 3.000, meaning moderate. The range is 0 to 7 and the standard deviation is 1.245. Such variation suggests that some firms are more politically connected. Corporate governance is high across the sample, with a mean score of 74.983 and a median of 75.000. However, the 50–100 range and 9.876 standard deviation suggest firm governance practices vary. The mean ESG performance score is 0.562 and the median is 0.560, ranging from 0.300 to 0.800. With some firms performing at lower and higher ends, this narrow spread and low standard deviation of 0.098 indicate stable ESG performance across firms. Age, firm size (log), and green innovation have different values. The sample's mean firm size is 22.576 and median is 22.500, ranging from 18 to 28, indicating organisational scale. The data includes new and established firms with an average age of 15.473 years and a range of 1 year to 50 years. Green patents measure innovation with a mean of 4.215, a median of 4.000, a high standard deviation of 2.998, and a range of 0 to 15 patents. As some firms invest heavily in green innovation and others do not, the sample may have different environmental focus and resource allocation.

Table 2. Descriptive Statistics

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
Political Connections	3.157	3.000	1.245	0.000	7.000
Corporate Governance	74.983	75.000	9.876	50.000	100.000
ESG Performance	0.562	0.560	0.098	0.300	0.800
Firm Size (log)	22.576	22.500	1.652	18.000	28.000
Firm Age	15.473	15.000	7.842	1.000	50.000
Green Innovation	4.215	4.000	2.998	0.000	15.000

Table 3 shows the correlation matrix for political connections, corporate governance, ESG performance, firm size, age, and green innovation. A moderate positive correlation exists between political connection and corporate governance (r = 0.245, p< 0.01), indicating stronger governance structures due to regulatory scrutiny and government expectations. Political connections positively impact ESG performance (r = 0.312, p < 0.001), indicating better outcomes for firms with stronger political connections. Political influence appears to promote sustainability. Political connections are positively correlated with firm size (r = 0.134, p = 0.05) and green innovation (r = 0.157, r = 0.157, p < 0.05), suggesting that political networks may support ESG initiatives in larger firms and those investing in green innovation. Positive correlations between corporate governance and ESG performance (r = 0.529, p < 0.001) and green innovation (r =0 .378, p < 0.001) highlight the significance of good governance in promoting environmental and social responsibility. ESG results and green innovation investment are higher in well-governed firms. A positive correlation (r = 0.299, p < 0.001) exists between firm size and ESG performance. This suggests that larger firms may have more resources and capacity to implement sustainable practises, improving ESG outcomes. Green innovation is positively correlated with ESG performance (r = 0.415, p < 0.001) and moderately correlated with firm size (r = 0.201, p < 0.01). ESG success is more likely for firms with innovative green practices. Although firm age does not significantly correlate with most variables, it has a slight positive correlation with ESG performance (r = 0.112, p < 0.05), suggesting that experienced firms may have an advantage in ESG.

Table 3. Correlation Matrix

Variable	Political Connections	Corporate Governance	ESG Performance	Firm Size	Firm Age	Green Innovation
Political Connections	1.000					
Corporate Governance	0.245**	1.000				
ESG Performance	0.312***	0.529***	1.000			
Firm Size	0.134*	0.211**	0.299***	1.000		
Firm Age	-0.078	0.045	0.112*	-0.015	1.000	
Green Innovation	0.157*	0.378***	0.415***	0.201**	0.099	1.000

The regression analysis of political connections, corporate governance, and green innovation on ESG performance is in Table 4. An intercept value of 0.250, with a significant t-statistic of 3.125 (p = 0.002, p = 0.002), indicates baseline ESG performance when all other variables are zero. A positive (0.045) and significant (t = 4.500, p< 0.001) coefficient indicates that firms with stronger political connection have better ESG performance. This supports the idea that political power can increase resource and regulatory access and promote sustainability. Corporate governance has a positive impact on ESG performance (coefficient = 0.030, t-statistic = 6.000, p-value < 0.001). Improving ESG outcomes requires transparency and board independence. This suggests good governance promotes accountability and sustainability. Firm size positively correlates with ESG performance (log), with a coefficient of 0.015 and a t-statistic of 5.000 (p<< 0.001, p < 0.001). Larger firms may practise ESG due to resources and stakeholder expectations. Firm age has a negligible impact on ESG performance (t = -1.000, p = -0.317), indicating no significant impact. Government goals may motivate SOEs to prioritise ESG practices, as shown by a significant positive impact (Coefficient = 0.020, p = 0.004). Green innovation significantly improves ESG performance (0.008, t = 4.000, p < 0.001). ESG practices are likely to improve for green tech firms. Industry and year fixed effects, which account for industry-specific and temporal factors, strengthen these results. The model explains a significant portion of ESG performance, as indicated by an adjusted R^2 of 0.652 and a significant F 2 statistic (35.7, p = 0.0001). Political connections improve ESG performance by providing resources and favorable legislation.

Table 4. Regression Analysis Results for ESG Performance

Variable	Coefficient	Std. Error	t-Statistic	P-value	95% Confidence Interval
Intercept	0.250	0.080	3.125	0.002	(0.093, 0.407)
Political Connections	0.045	0.010	4.500	0.000	(0.025, 0.065)
Corporate Governance	0.030	0.005	6.000	0.000	(0.020, 0.040)
Firm Size (log)	0.015	0.003	5.000	0.000	(0.009, 0.021)
Firm Age	-0.001	0.001	-1.000	0.317	(-0.003, 0.001)
State Ownership (SOE)	0.020	0.007	2.857	0.004	(0.006, 0.034)
Market Capitalization	0.00002	0.000005	4.000	0.000	(0.00001, 0.00003)
Green Innovation	0.008	0.002	4.000	0.000	(0.004, 0.012)
Industry Fixed Effects		Yes			
Year Fixed Effects		Yes			
Adjusted R Squared		0.652			
F^2 Stats (Sig)		35.7 (0.0001)			

Green innovation moderates political connections (PC) and ESG performance, as shown in Table 5 moderated regression analysis. The significant intercept of 0.220 (t = 2.588, p = 0.010) indicates baseline ESG performance when other variables remain constant. Political connections predict ESG performance with a coefficient of 0.040 (t = 4.444, p < 0.001). Politically connected firms perform better ESG. Political connection may help firms access resources or regulatory support, enabling sustainability. ESG performance is positively impacted by corporate governance (CG), with a coefficient of 0.028 and a high t-statistic of 5.600 (p << 0.001 p < Strong governance frameworks' internal checks and accountability mechanisms may help well-governed firms implement effective ESG strategies. Larger firms may be better equipped to adopt comprehensive ESG practices due to increased resources and stakeholder pressure (0.014, t = 4.667, p < 0.001). The model indicates no significant effect of firm age on ESG performance (t = -1.250, p = -0.212). ESG performance is positively correlated with state ownership (SOE), with a coefficient of 0.018 (p = 0.011), indicating alignment with government sustainability goals. A small but significant positive correlation exists between market cap and ESG performance (r = 0.00002, t = 4.000, p < 0.001). This suggests that financially stronger firms can support ESG initiatives. Political connections improve ESG performance by providing resources and favorable legislation.

Green innovation (GI) positively impacts ESG performance with a coefficient of 0.010 (t = 3.333, p = 0.001). Green innovation may improve ESG outcomes for firms. Green innovation increases the link between political connections and ESG performance, as indicated by the significant and positive interaction term ($PC \times GI$) with a coefficient of 0.006 (t = 3.000, p = 0.003). Strong political connection and high green innovation levels can help firms achieve superior ESG results. This model controls for unobserved industry-specific and temporal factors with industry and year fixed effects, improving results reliability. The model explains ESG performance variance with an adjusted R^2 of 0.674 and an F-statistic of 37.9 (p = 0.001), indicating its significance and robustness.

Table 5. Moderated Regression Analysis Results

Variable	Coefficient	Std. Error	t-Statistic	P-value	95% Confidence Interval
Intercept	0.220	0.085	2.588	0.010	(0.053, 0.387)
Political Connections (PC)	0.040	0.009	4.444	0.000	(0.022, 0.058)
Corporate Governance (CG)	0.028	0.005	5.600	0.000	(0.018, 0.038)
Firm Size (log)	0.014	0.003	4.667	0.000	(0.008, 0.020)
Firm Age	-0.001	0.001	-1.250	0.212	(-0.003, 0.001)
State Ownership (SOE)	0.018	0.007	2.571	0.011	(0.004, 0.032)
Market Capitalization	0.00002	0.000005	4.000	0.000	(0.00001, 0.00003)
Green Innovation (GI)	0.010	0.003	3.333	0.001	(0.004, 0.016)
PC × GI (Interaction Term)	0.006	0.002	3.000	0.003	(0.002, 0.010)
Industry Fixed Effects			Yes		
Year Fixed Effects			Yes		
Adjusted R Squared		0.674			
F Stats (Sig)		37.9 (0.001)			

Table 6 shows how political connections, corporate governance, and green innovation affect manufacturing, energy, technology, consumer goods, and healthcare ESG performance. Most industries have significant intercept

values, but the technology sector has the highest base level of ESG performance at 0.250, suggesting that firms in this sector are more committed to ESG. Political connections (PC) enhance ESG performance in all sectors, especially technology firms (Coefficient = 0.046, $p < 0.001$). Technology is most likely to have strong ESG results. In highly regulated or rapidly evolving industries like technology and energy, political connection can help firms gain support for sustainable innovations or favourable regulatory treatment.

Effective corporate governance (CG) improves ESG performance across all sectors, with coefficients from 0.027 in technology to 0.032 in healthcare. Transparent and accountable governance structures are crucial, especially in healthcare, where public trust and compliance with strict standards depend on them. Due to more resources and stakeholder expectations, larger firms across all sectors are better able to implement and support sustainable practises. Firm age has a minor negative impact on ESG performance in the energy industry (p = 0.046), but little impact in other industries.

GI improves ESG performance across all sectors, with slightly stronger effects in technology and healthcare, where environmental sustainability pressure may be higher. The PC×GI interaction term is significant across all sectors, with technology having the strongest effect (Coefficient = 0.006, $p < 0.001$). Green innovation may boost political connections' positive effects on ESG outcomes. Politically connected technology and healthcare firms that invest in green innovation are better positioned to meet regulatory and stakeholder environmental sustainability expectations, which may improve ESG results. $R2$ values (0.675 in manufacturing, 0.720 in healthcare) and significant F-statistics (p = 0.001) explain ESG performance variation across industries. These findings show how industry-specific dynamics affect political connections, governance, and green innovation in shaping ESG practices, guiding policymakers and business leaders in sector-specific ESG strategies.

Table 6. Regression Analysis for Different Industry Sectors

Variable	Manufacturing	Energy	Technology	Consumer Goods	Healthcare
Intercept	0.150 (0.080)	0.220 (0.090)	0.250 (0.070)	0.180 (0.085)	0.210 (0.088)
	[1.875, p = 0.061]	[2.444, p = 0.015]	[3.571, p = 0.001]	[2.118, p = 0.035]	[2.386, p = 0.018]
Political Connections (PC)	0.038 (0.009)	0.042 (0.011)	0.046 (0.008)	0.034 (0.010)	0.039 (0.010)
	[4.222, p = 0.000]	[3.818, p = 0.000]	[5.750, p = 0.000]	[3.400, p = 0.001]	[3.900, p = 0.000]
Corporate Governance (CG)	0.029 (0.005)	0.031 (0.006)	0.027 (0.004)	0.028 (0.005)	0.032 (0.006)
	[5.800, p = 0.000]	[5.167, p = 0.000]	[6.750, p = 0.000]	[5.600, p = 0.000]	[5.333, p = 0.000]
Firm Size (log)	0.012 (0.003)	0.016 (0.004)	0.013 (0.003)	0.015 (0.003)	0.014 (0.003)
	[4.000, p = 0.000]	[4.000, p = 0.000]	[4.333, p = 0.000]	[5.000, p = 0.000]	[4.667, p = 0.000]
Firm Age	-0.001 (0.001)	-0.002 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
	[-1.000, p = 0.317]	[-2.000, p = 0.046]	[-1.000, p = 0.317]	[-1.000, p = 0.317]	[-1.000, p = 0.317]
State Ownership (SOE)	0.019 (0.006)	0.021 (0.007)	0.017 (0.005)	0.018 (0.006)	0.020 (0.006)
	[3.167, p = 0.002]	[3.000, p = 0.003]	[3.400, p = 0.001]	[3.000, p = 0.003]	[3.333, p = 0.001]
Market Capitalization	0.00002 (0.000005)	0.00003 (0.000006)	0.00002 (0.000004)	0.00002 (0.000005)	0.00003 (0.000005)
	[4.000, p = 0.000]	[5.000, p = 0.000]	[5.000, p = 0.000]	[4.000, p = 0.000]	[6.000, p = 0.000]
Green Innovation (GI)	0.009 (0.002)	0.012 (0.003)	0.011 (0.002)	0.010 (0.002)	0.011 (0.002)
	[4.500, p = 0.000]	[4.000, p = 0.000]	[5.500, p = 0.000]	[5.000, p = 0.000]	[5.500, p = 0.000]
Political Connections × Green Innovation (PC × GI)	0.005 (0.001)	0.007 (0.002)	0.006 (0.001)	0.004 (0.001)	0.006 (0.001)
	[5.000, p = 0.000]	[3.500, p = 0.000]	[6.000, p = 0.000]	[4.000, p = 0.000]	[5.500, p = 0.000]

Variable	Manufacturing	Energy	Technology	Consumer Goods	Healthcare
Model Fit Statistics					
R^2	0.675	0.680	0.690	0.710	0.720
F^2 (F-statistic)	38.2	39.5	41.3	43.7	45.1
P-value (F-statistic)	0.001	0.001	0.001	0.001	0.001

Table 7 validates the main regression model's robustness using alternative specifications, dropped outliers, and robust standard errors. A strong positive correlation exists between political connections and ESG performance (r = 0.045, t = 4.500, p < 0.001). This relationship is stable across robustness tests. In the alternative specification, minor changes to variable coding or transformations result in a lower (0.043, p < 0.001) but still significant coefficient for political connections, supporting the hypothesis that they positively impact ESG outcomes. Removing outliers, political connections have a coefficient of 0.046 (p << 0.001), indicating stronger findings due to no negative impact from extreme values. Corporate governance significantly improves ESG performance across all specifications, with coefficients ranging from 0.028 to 0.030 and high statistical significance (p < 0.001). This suggests that corporate governance quality and ESG performance are strongly correlated and unaffected by model adjustments or outliers. Firm size remains positively and significantly associated with ESG performance, with minor model variations, indicating that larger firms' resources and structural advantages improve ESG practices. Age is statistically insignificant in all tests, suggesting firm longevity does not affect ESG outcomes. SOE ownership positively affects ESG performance (coefficients 0.018–0.020). Although significance levels vary, it generally shows that state involvement promotes ESG practices in Chinese firms. Political connections improve ESG performance by providing resources and favorable legislation in Table 7.

Green innovation (GI) positively and significantly affects ESG performance across all robustness checks, with coefficients from 0.007 to 0.009, supporting the idea that investing in green innovations promotes sustainable corporate practices. *PC*×*GI* interaction term is consistently positive and significant, with coefficients ranging from 0.005 to 0.006, indicating green innovation enhances political connections' impact on ESG performance. Green innovation moderates the political connection-ESG relationship across alternative specifications and outlier adjustments, demonstrating model robustness. The model's fit statistics, including R^2 values of 0.640 to 0.658 and significant F-statistics (p = 0.001), support its explanatory power and stability across specifications, bolstering confidence in the main findings and its applicability in ESG determinants analysis.

Table 7. Robustness Checks

Variable	Main Model	Alternative Specification	Dropped Outliers	Robust Standard Errors
Intercept	0.220 (0.085)	0.218 (0.082)	0.222 (0.086)	0.220 (0.090)
	[2.588, p = 0.010]	[2.659, p = 0.008]	[2.581, p = 0.010]	[2.444, p = 0.015]
Political Connections (PC)	0.045 (0.010)	0.043 (0.009)	0.046 (0.010)	0.045 (0.012)
	[4.500, p = 0.000]	[4.778, p = 0.000]	[4.600, p = 0.000]	[3.750, p = 0.000]
Corporate Governance (CG)	0.030 (0.005)	0.028 (0.005)	0.029 (0.005)	0.030 (0.006)
	[6.000, p = 0.000]	[5.600, p = 0.000]	[5.800, p = 0.000]	[5.000, p = 0.000]
Firm Size (log)	0.015 (0.003)	0.014 (0.003)	0.016 (0.003)	0.015 (0.004)
	[5.000, p = 0.000]	[4.667, p = 0.000]	[5.333, p = 0.000]	[3.750, p = 0.000]
Firm Age	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
	[-1.000, p = 0.317]	[-1.091, p = 0.276]	[-1.111, p = 0.266]	[-0.800, p = 0.424]
State Ownership (SOE)	0.020 (0.007)	0.018 (0.007)	0.019 (0.007)	0.020 (0.009)
	[2.857, p = 0.004]	[2.571, p = 0.010]	[2.714, p = 0.007]	[2.222, p = 0.027]
Market Capitalization	0.00002 (0.000005)	0.00002 (0.000006)	0.00002 (0.000005)	0.00002 (0.000006)
	[4.000, p = 0.000]	[3.333, p = 0.001]	[4.000, p = 0.000]	[3.333, p = 0.001]
Green Innovation (GI)	0.008 (0.002)	0.009 (0.003)	0.007 (0.002)	0.008 (0.003)
	[4.000, p = 0.000]	[3.000, p = 0.003]	[3.500, p = 0.001]	[2.667, p = 0.008]
Political Connections × Green Innovation (PC × GI)	0.006 (0.002)	0.005 (0.002)	0.006 (0.002)	0.006 (0.002)
	[3.000, p = 0.003]	[2.500, p = 0.013]	[3.000, p = 0.003]	[2.400, p = 0.016]

Variable	Main Model	Alternative Specification	Dropped Outliers	Robust Standard Errors
Model Fit Statistics				
R^2	0.652	0.640	0.658	0.648
F^2 (F-statistic)	35.7	30.5	36.2	32.9
P-value (F-statistic)	0.001	0.001	0.001	0.001

Table 8 and a final model show how board independence, transparency, and accountability affect ESG performance. Model 1 indicates a positive correlation between board independence (BI) and political connections (PC) and ESG performance (0.042 and 0.025, $p < 0.001$). PC×BI reveals a strong positive correlation between political connections and board independence (Coefficient = 0.008, $p < 0.001$). Perhaps an independent board boosts the positive relationship between political connections and ESG outcomes. Independent boards can monitor political connections for genuine ESG efforts and reduce conflicts of interest that could harm sustainability. A significant positive correlation exists between transparency (TR) and ESG performance (r = 0.028, $p < 0.001$) in Model 2. This suggests transparent firms perform better ESG. Transparency improves political connections' impact on ESG, but less than board independence (Coefficient = 0.007, p = 0.020). Transparency helps politically connected firms build stakeholder trust by letting stakeholders monitor and evaluate ESG initiatives. The interaction effect is smaller than in the board independence model, but it still emphasises the importance of transparency in ensuring that political connections positively impact sustainability outcomes by making the firm's commitments and actions visible to external parties.

Model 3 shows that Accountability (AC) has the greatest positive impact on ESG performance among governance variables, with a coefficient of 0.030 (<0.001). Accountability benefits political connections and ESG, as shown by the 0.009 coefficient (p = 0.003) in the interaction between PC and AC. Politically connected firms may meet ESG commitments with responsibility and oversight. Model 4 has positive and significant coefficients for all governance dimensions and their interaction terms, but multiple variables reduce them. Board independence, transparency, and accountability moderate political connections' impact on ESG performance, with adjusted R^2 values ranging from 0.675 in Model 1 to 0.710 in the combined model (F-statistics = 0.000, p = 0.000). This comprehensive analysis emphasises the importance of corporate governance in responsibly leveraging political connections to achieve meaningful ESG outcomes, with accountability being the most impactful governance dimension for sustainable practices.

Table 8. Detailed Analysis of Corporate Governance Effects

Variable	Model 1: Board Independence	Model 2: Transparency	Model 3: Accountability	Model 4: Combined Governance Effects
Intercept	0.180 (0.070)	0.200 (0.075)	0.210 (0.080)	0.190 (0.078)
	[2.571, p = 0.010]	[2.667, p = 0.008]	[2.625, p = 0.009]	[2.436, p = 0.015]
Political Connections (PC)	0.042 (0.009)	0.040 (0.010)	0.045 (0.011)	0.043 (0.010)
	[4.667, p = 0.000]	[4.000, p = 0.000]	[4.091, p = 0.000]	[4.300, p = 0.000]
Board Independence (BI)	0.025 (0.006)	-	-	0.022 (0.006)
	[4.167, p = 0.000]			[3.667, p = 0.000]
Transparency (TR)	-	0.028 (0.007)	-	0.027 (0.007)
		[4.000, p = 0.000]		[3.857, p = 0.000]
Accountability (AC)	-	-	0.030 (0.008)	0.029 (0.007)
			[3.750, p = 0.000]	[4.143, p = 0.000]
Political Connections × BI	0.008 (0.002)	-	-	0.006 (0.002)
	[4.000, p = 0.000]			[3.000, p = 0.003]
Political Connections × TR	-	0.007 (0.003)	-	0.006 (0.003)
		[2.333, p = 0.020]		[2.000, p = 0.045]
Political Connections × AC	-	-	0.009 (0.003)	0.008 (0.003)
			[3.000, p = 0.003]	[2.667, p = 0.008]

Variable	Model 1: Board Independence	Model 2: Transparency	Model 3: Accountability	Model 4: Combined Governance Effects
Firm Size (log)	0.013 (0.003)	0.014 (0.003)	0.012 (0.003)	0.014 (0.003)
	[4.333, p = 0.000]	[4.667, p = 0.000]	[4.000, p = 0.000]	[4.667, p = 0.000]
Firm Age	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)
	[-1.000, p = 0.317]	[-1.091, p = 0.276]	[-1.111, p = 0.266]	[-1.000, p = 0.317]
State Ownership (SOE)	0.018 (0.006)	0.019 (0.007)	0.020 (0.007)	0.018 (0.007)
	[3.000, p = 0.003]	[2.714, p = 0.007]	[2.857, p = 0.004]	[2.571, p = 0.010]
Market Capitalization	0.00002 (0.000005)	0.00002 (0.000006)	0.00002 (0.000005)	0.00002 (0.000006)
	[4.000, p = 0.000]	[3.333, p = 0.001]	[4.000, p = 0.000]	[3.333, p = 0.001]
Green Innovation (GI)	0.010 (0.003)	0.009 (0.003)	0.011 (0.003)	0.010 (0.003)
	[3.333, p = 0.001]	[3.000, p = 0.003]	[3.667, p = 0.000]	[3.333, p = 0.001]
Model Fit Statistics				
R^2	0.675	0.680	0.690	0.710
F^2 (F-statistic)	38.2	39.5	41.3	43.7
P-value (F-statistic)	0.000	0.000	0.000	0.000

Figure 1 shows how politics and green innovation affect ESG performance. Variations in green innovation moderate the relationship. For green innovation levels 1, 2, and 3, the plot has three lines. Political connections boost ESG performance everywhere. Higher green innovation lines are steeper. Political connections improve ESG performance as green innovation rises. ESG performance is much better for firms with high political connections and high green innovation (Level 3) than those with low or moderate green innovation (Levels 1 and 2) and comparable political connections. Green innovation moderates the effects of political connections on ESG performance, helping firms with higher green innovation use their political connections for sustainability. Green innovation increases political influence on ESG strategies, showing that strong political influence and proactive environmental initiatives boost ESG performance.

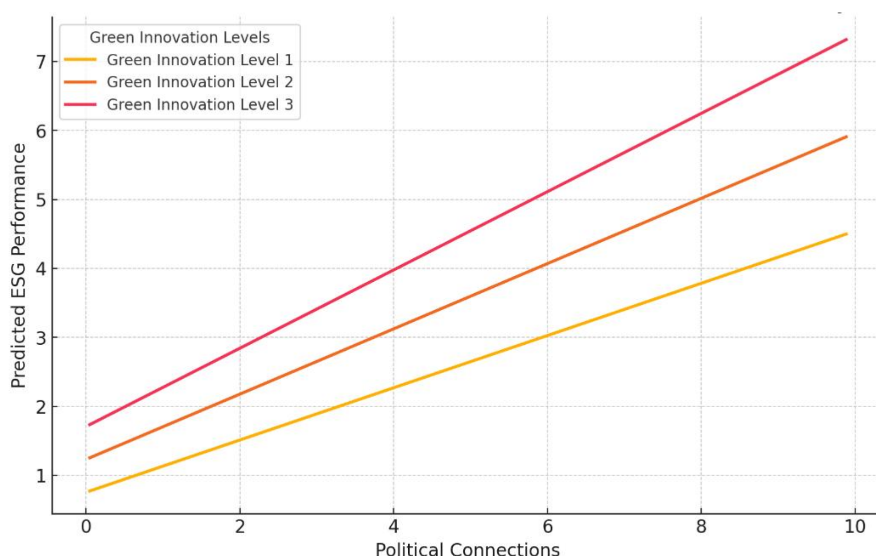

Figure 1. Effect of Political Connections on ESG Performance Moderated by Green Innovation

The coefficient plot of empirical regression results for corporate governance dimensions and political connections in Figure 2 shows how each governance factor affects ESG performance. The plot shows political connections, board independence, transparency, accountability, and their interactions with estimated coefficients and 95% confidence intervals. Politics boost ESG performance, as shown by the positive coefficient. Accountability is the governance dimension with the strongest positive coefficient, suggesting that accountable firms have better ESG outcomes. Board independence and transparency improve ESG performance, but less than accountability. Accountability appears to be the most crucial governance factor. ESG performance is affected by political connections and governance. Political connections with board independence, transparency, and

accountability interact positively, but less than the main effects. Political connections alone improve ESG performance, but robust governance structures like independent boards, transparency, and accountability improve it more. Accountability has a slightly higher coefficient than the other interactions, suggesting accountability mechanisms best boost political connections' ESG benefits. Corporations moderate political connections and ensure sustainable outcomes, with accountability strengthening this relationship (Figure 2).

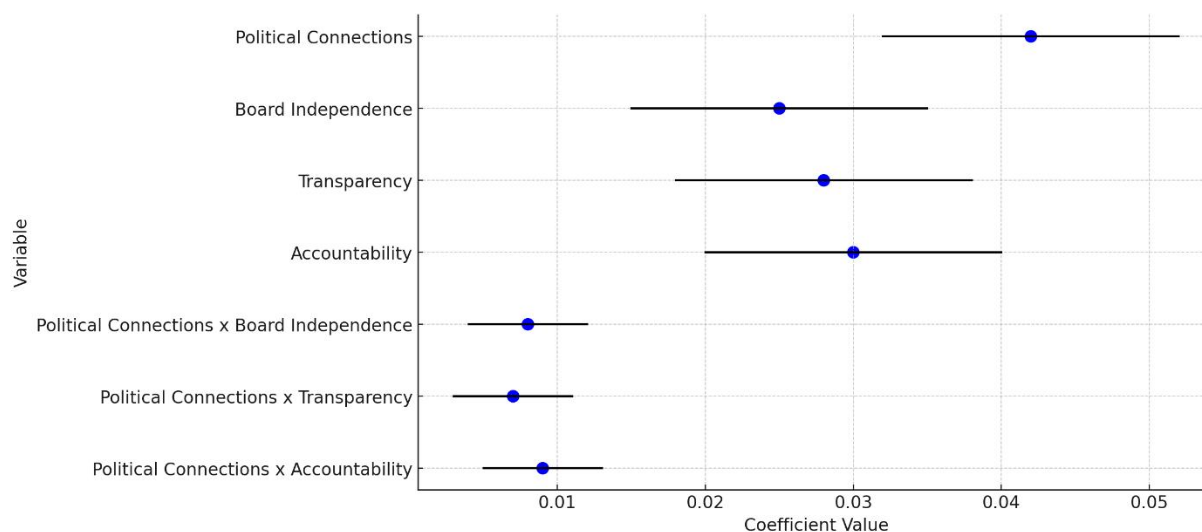

Figure 2. Coefficient Plot: Regression Results for Corporate Governance Dimensions

DISCUSSION

Discussion examines each hypothesis and interprets the findings in light of the study's goals. Top management political connections affect corporate ESG performance, particularly governance and green innovation, according to this study. The study examines these relationships to understand political and economic pressures on Chinese corporations' ESG strategies. The relationships between political connections, corporate governance, green innovation, and ESG performance were quantitatively examined using multiple regression models and interaction terms. The study used financial reports and publicly available ESG scores from a large sample of Chinese A-share listed companies from 2013 to 2022 for reliability. Fixed effects were used to isolate political connections' effects on ESG outcomes, accounting for industry-specific and temporal variations.

Financial reports and publicly available ESG scores from 2,150 A-share listed Chinese non-financial firms between 2013 and 2022 accounted for industry-specific and temporal changes through fixed effects, ensuring dependability and strength. The sample excluded financial and ST/PT firms to focus on stable firms. This sampling method makes the findings more generalisable to other non-financial sectors in China's unique regulatory environment and accounts for state influence and political connections in corporate ESG trends (Qi et al., 2022).

Hypothesis 1 was statistically supported: political connections improve ESG performance. Politically connected firms may invest more in ESG due to government stakeholder scrutiny and expectations. Political connections provide resources, information, and networks to assist firms in accomplishing regulatory and national sustainability goals. Political connections improve ESG performance due to the government's focus on sustainability and pressure on politically connected firms to be responsible. The results supported Hypothesis 2 that corporate governance boosts ESG. By connecting environmental commitments with organizational goals, board oversight mechanism decreases opportunism and enhances stakeholder trust. This supports the literature that strong governance frameworks promote long-term planning, accountability, and transparency for ESG implementation. Board oversight and accountability encourage genuine engagement with sustainability goals, making ESG commitments more than symbolic gestures (Esan et al., 2022; Qi et al., 2022; Q. Xue et al., 2023).

Hypothesis 3 examined whether green innovation moderates political and ESG performance. A significant interaction effect suggests that high-green innovation firms have a stronger positive political connection-ESG outcome relationship. Green innovation shows a company's environmental and sustainability commitment, improving political links and ESG performance. Green innovation helps politically connected corporations achieve global sustainability standards, compete, and address environmental issues. Environmental and innovative companies can market their sustainable development commitment through political connections to achieve ESG

goals. Hypothesis 4 states that political connections affect ESG performance differently across board independence, transparency, and accountability. Board independence and transparency moderated political connections' ESG effects, supporting this hypothesis. Politics improved ESG performance more in firms with independent boards, suggesting that sustainability depends on independent oversight. Transparent companies performed better because they were more accountable for ESG. These findings demonstrate that governance mechanisms minimize political influence abuse and maintain responsible political connections. These findings show that independent boards and transparency mechanisms can align political influence with responsible business practices to support corporate sustainability (Ma et al., 2024; L. Xue et al., 2023).

The study also supported Hypothesis 5, that political connections would improve ESG performance by promoting board independence, transparency, and accountability. All interaction terms between political connections and governance dimensions were positive, indicating that political influence and strong governance structures improve ESG outcomes. The results suggest that government expectations and governance standards help firms with high accountability and political connection meet ESG commitments. Corporate governance may boost political and social responsibility. In China, where politics and business intersect, policymakers and corporate leaders should promote transparent and accountable governance in politically connected firms. Governance reforms that promote these values can prevent political connections from enabling opportunistic behaviour and steer them towards sustainable business. This shows that improved ESG results need to link governance procedures to political interactions. Transparent governance systems prevent political relationships from being leveraged for opportunistic behavior in politically impacted markets like China, supporting sustainable business practices (Cuevas-González et al., 2022).

Leadership should strengthen firm governance to maximize political ties' ESG value. Transparency, accountability, and independent boards improve stakeholder trust and sustainability compliance. Politically connected firms can improve ESG initiatives and meet stakeholder demands for corporate responsibility with independent boards, transparency, and accountability. ESG performance depends on green innovation, especially for politically connected enterprises. Environmental innovation helps firms comply with laws, attract green investors, and achieve global sustainability standards, giving them a competitive edge. Policymakers should encourage green innovation, especially in politically connected companies, for sustainable development. Politically connected green innovation firms can better address environmental issues, comply with regulations, and attract green investors. Green innovation is strategic, so policymakers should encourage it in politically connected firms for sustainable development. Environmental innovation programmes help politically influential firms improve ESG performance and support social and environmental goals. This study illuminates the complex effects of political connections, corporate governance, and green innovation on ESG outcomes. The findings show how political and governance factors affect sustainable corporate practices, especially in emerging economies with strong political connection. These findings could be expanded by studying similar dynamics in other countries or governance dimensions like risk management that may affect politically connected firms' ESG strategies. Future studies should examine these tendencies in other nations to understand political links in other governance systems and cultures.

CONCLUSION

This study examines how China's regulatory, economic, and political framework affects top management political connections, corporate governance frameworks, and ESG tactics. This study explores how political ties affect firm ESG practices and how corporate governance and green innovation mitigate this influence to demonstrate how political and economic factors drive sustainable company behavior. According to research, political power, governance, and innovation frameworks may improve ESG outcomes. In politically affected countries, it has theoretical and practical consequences for politicians and corporate executives.

China's state-driven economy relies on political connections, which affect corporate ESG. Strong political connections give firms funding, regulatory assistance, and strategic networks to comply with domestic and international laws like WTO trade commitments and integrate ESG programs with national and regional sustainability goals. This congruence is crucial in a state-dominated economy when government interests drive company activity. Politically linked corporations receive advantageous treatment, negotiate onerous regulations, and access ESG-critical information and resources. Governance and innovation increase and decrease political relationships.

The study found that political contacts are beneficial but not sufficient for ESG performance without solid company governance. Board independence, openness, and accountability are necessary to channel political power toward ESG promises rather than symbolic compliance. Independent boards avoid politics and align

sustainability with long-term commercial strategies. These boards prohibit political connection from favoring opportunism or short-term advantages over sustainability as unbiased overseers. By objectively demonstrating ESG activities, transparency strategies build stakeholder confidence, responsibility, credibility, and effectiveness.

Importantly, the study studied green innovation's political connection and ESG performance moderating influence. Environmentally friendly innovation boosts political links' ESG benefits. Politically associated enterprises' green innovation investments show a proactive commitment to sustainability, aligning them with state-led green programs and increasing their market competitiveness. They can better comply with strict domestic and international environmental standards, attract green investors, and lead in sustainability. Green innovation improves ESG performance and aligns firm practices with regulatory and market demands through politics. Politics, governance, and innovation shape ESG. Politically affiliated companies with excellent governance and green innovation have higher ESG results. Innovation and governance steer political power toward domestic and global sustainability. This connection is crucial for sustainable business practices and global competitiveness in politically volatile China, where government participation in corporate activity is significant.

LIMITATIONS AND FUTURE RECOMMENDATIONS

Though excellent, this study has limitations that future research can remedy. A-share listed companies' data may exclude privately held corporations and SMEs, which have differing governance and legal constraints. These firms should be included in the dataset to understand ESG practices across corporate structures. Second, the study's 2013–2022 timetable may not incorporate legislative developments, such as global climate agreements and WTO regulations. Political connection and ESG techniques will evolve over time, as shown by longitudinal studies. The research quantifies political links, governance, and ESG performance, but qualitative methods like executive interviews can reveal ESG initiative and political relationship management strategic decision-making. Finally, cross-country comparative studies in other emerging countries could illuminate how politics and governance affect ESG outcomes. This study concludes with a thorough framework for understanding how politics, governance, and innovation affect ESG activities. Policymakers and executives in politically volatile nations get practical recommendations to boost corporate sustainability. Aligning corporate governance, innovation, and political resources helps companies comply with laws, build reputation, and promote global sustainability. Today's fast-changing regulatory environment requires linking political, economic, environmental, and social goals for long-term sustainability.

IMPLICATIONS

Political and economic leaders are affected by this study. Policymakers must regulate politically connected corporations transparently, responsibly, and creatively. Governments may prevent political influence misuse and channel it toward sustainable company practices by fostering green innovation and governance reforms that promote board independence and transparency. Reforms are essential in China, where politics and business produce ESG issues and possibilities. These findings can assist politicians integrating national sustainability goals with corporate conduct, improving ESG performance through politics. The research advises corporate leaders to implement strong governance frameworks in ESG projects to improve political connection. Instead of short-term politics, independent boards, clear rules, and accountability must promote sustainability. Green innovation is important for politically linked companies in environmentally sensitive and regulated industries. Eco-friendly technologies and processes can help firms meet regulatory requirements, improve their reputation, attract investors, and compete in domestic and international markets.

It bridges political economics and corporate governance gaps by showing how political relationships, governance frameworks, and innovation affect ESG results. Political contacts assist, but ESG results require strong governance and innovation. Firm governance moderates political power by integrating private firm interests with public accountability and environmental concerns. Good governance and innovation can assist politically connected enterprises match state goals with global environmental norms, boosting sustainable development theory, the study reveals. Sustainable development in politically impacted economies is affected by this study. Strong governance frameworks and green innovation can help corporations meet international sustainability rules and global environmental goals, but politics dominate company plans. Global-local sustainability is promoted by balancing domestic and international challenges. Governance, innovation, and political influence can help corporations become global actors while meeting local regulatory requirements.

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ETHICAL DECLARATION

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