

A Study on the Relationship Between Corporate ESG Performance and Overall Corporate Performance: An Analysis of the Mediating Effect of Information Transparency

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Abstract. This paper aims to explore the impact of ESG (Environmental, Social, and Governance) information transparency on corporate performance, with a particular focus on its mediating effect in corporate governance and the fulfillment of social responsibilities. Through an in-depth analysis, this study seeks to reveal how ESG information transparency enhances corporate governance and social responsibility, ultimately influencing financial performance and market value. A quantitative research approach is adopted, selecting several listed companies as samples and collecting their ESG reports and financial data. By constructing a model, the relationships between ESG information transparency, corporate governance, social responsibility fulfillment, and overall corporate performance are analyzed. Data sources include corporate annual reports, ESG reports, and relevant databases. Path analysis and mediation effect tests are employed to ensure the reliability and validity of the research results. This study not only examines the mediating effect of ESG information transparency on corporate performance but also delves into the moderating roles of corporate governance and social responsibility fulfillment. The findings provide essential theoretical support for companies formulating ESG strategies and offer substantial references for policymakers and investors.

Keywords: environmental, social, governance, information, overall corporate performance, stakeholders, corporate risk

1. Introduction

Environmental, Social, and Governance (ESG) factors have increasingly become key elements influencing the long-term development of enterprises on a global scale. An increasing number of investors and stakeholders are paying attention to corporate ESG performance to mitigate investment risks and achieve sustainable development. Since the 14th Five-Year Plan proposed the concepts of “innovation, coordination, green development, openness, and sharing,” ESG has become an essential criterion for investors when evaluating a company's capacity for sustainable development and long-term value. Many studies have shown that companies with strong ESG performance demonstrate greater resilience in market fluctuations and are capable of attracting more long-term investments. However, current research on the impact of ESG information transparency on corporate performance is still insufficient, particularly regarding the analysis of its mediating effects.

By disclosing ESG information, companies can demonstrate their commitments and achievements in environmental protection, social responsibility, and corporate governance to stakeholders. Transparent ESG information helps strengthen trust between companies and stakeholders, enhancing corporate reputation and brand value. Furthermore, ESG information transparency can promote internal management improvements and risk control, helping companies identify and respond to potential environmental and social risks. Nevertheless, in practice, companies often face challenges in disclosing ESG information, including the complexity of data collection, the lack of standardized criteria, and the costs associated with disclosure.

Therefore, exploring the impact of ESG information transparency on corporate performance holds significant practical value. In particular, an in-depth analysis of how ESG information transparency indirectly influences corporate performance through corporate governance and social responsibility fulfillment can help enterprises better understand and enhance their ESG management, ultimately achieving sustainable development goals. This also provides important theoretical support for policymakers and investors, promoting greater societal attention and action on ESG issues.

2. Theoretical Foundation and Research Hypothesis

2.1. Analysis of the Impact of ESG Information Disclosure on Overall Corporate Performance

ESG information disclosure refers to the public disclosure of specific information and performance related to environmental, social, and governance aspects of a company. This includes, but is not limited to, the disclosure of information on corporate carbon emissions, employee rights, corporate governance structures, and other relevant aspects such as wastewater management, energy control, employee relations, community volunteering, board structure adjustments, and corporate governance practices. The ESG framework is rooted in several theoretical foundations, including stakeholder theory, agency theory, and signaling theory.

First, according to stakeholder theory, a company's excellent performance in ESG demonstrates its commitment to environmental protection, social responsibility, and corporate governance to external parties. Such demonstrations not only enhance the trust of various stakeholders in the company but also help the company attract funding from creditors and investors at a lower cost, as well as secure vital resources like government subsidies [1-2]. This series of positive effects assists companies in strengthening cash flow and reducing the likelihood of debt defaults caused by insufficient funding.

Second, based on reputation theory, companies accumulate reputation capital and moral capital through fulfilling ESG responsibilities. In the face of adverse impacts, these forms of capital provide protection, mitigate economic losses, and reduce the risk of debt defaults [2-3].

By disclosing ESG information, companies can enhance stakeholder support and trust, while also improving social reputation and market competitiveness. Following the advocacy of new development concepts — “innovation, coordination, green development, openness, and sharing”—under the 14th Five-Year Plan, the concept of ESG has gained more attention. It not only promotes multidimensional development of enterprises but also encourages them to assume more responsibilities under the new requirements of the modern era, ensuring the organic integration of sustainable corporate development and corporate social responsibility. ESG information disclosure helps eliminate information asymmetry, alleviating agency problems and reducing agency costs when there is a separation of ownership and management. Additionally, it serves as an implicit evaluation metric for the management's capabilities and the company's long-term development potential, having a profound impact on overall corporate performance.

Overall corporate performance is not limited to the financial statements publicly disclosed by companies; investors are generally concerned with the multidimensional overall performance of a company. It is a comprehensive metric for assessing a company's business value and sustainable earnings. Important indicators include financial performance, social performance, and environmental performance.

Financial performance measures the company's profitability, growth potential, and financial stability, directly influencing the current returns and future investments of stakeholders and investors. Although ESG disclosures primarily focus on non-financial indicators, positive ESG information disclosures have an implicit positive impact on the company's brand value and market competitiveness, which in turn may improve long-term financial performance and reduce overall corporate risk [4].

Social performance primarily evaluates a company's commitment to social responsibilities, assessing its contributions to social responsibility, employee welfare, and community relations. A strong corporate reputation can enhance social cohesion and customer loyalty, better enabling a company's future sustainable development and building investor confidence. Good ESG disclosures reflect positive social and governance performance, improving employee satisfaction and loyalty, increasing productivity and innovation capability. Comprehensive and transparent ESG disclosures showcase a company's commitment to social responsibility, enhancing trust and cooperation with employees, customers, and the community, thus increasing support.

Environmental performance assesses a company's efficiency and effectiveness in environmental protection and resource management. Strong environmental performance not only reflects the company's proactive stance and capabilities in environmental protection but also improves resource utilization, optimizes operational capabilities, reduces operational costs, and increases long-term profitability, enhancing the company's sustainable development capacity and market competitiveness. ESG information disclosures can prompt companies to optimize their environmental management and operational capabilities, proactively reducing environmental burdens and operational costs, attracting more green investments and customers.

In summary, high-quality and transparent ESG information disclosures can strengthen consumer trust and investor confidence, thereby improving financial performance. Comprehensive and transparent ESG disclosures can demonstrate a company's positive engagement and effective outcomes in social responsibility, enhancing employee, customer, and community recognition and support, thus improving social performance. Systematic and comprehensive ESG disclosures can improve efficiency in environmental management and resource utilization, enhancing the company's sustainable development capabilities, and thereby improving environmental performance. Therefore, Hypothesis 1 is proposed:

H1: High-quality ESG information disclosure significantly enhances overall corporate performance.

2.2. Analysis of the Impact of ESG Performance on Information Transparency

ESG performance refers to a company's actual measures or achievements in environmental protection, social responsibility, and corporate governance. It is primarily divided into three distinct areas—environmental, social, and governance—to separately

evaluate a company's overall performance and sustainable development capabilities. The application of ESG strategies in ESG performance is categorized into internal and external aspects. Internally, the implementation and management of ESG strategies occur through managing environmental protection, social responsibility, and corporate governance. Companies establish and implement management policies to maximize resource utilization efficiency, improve employee benefits, increase the diversity and independence of corporate structures, and implement effective internal control and risk management.

Information transparency reflects the comprehensiveness, accuracy, and timeliness demonstrated by a company in its information disclosure process. The goal of information transparency is to reduce inequality and incompleteness in the exchange of information in the market, thereby mitigating information asymmetry and increasing the market's understanding and trust in the company. The theories related to information transparency primarily include the theory of information asymmetry and the Efficient Market Hypothesis (EMH). The theory of information asymmetry suggests that a natural information barrier exists between companies and their transaction counterparts, and the higher the level of information asymmetry, the higher the transaction costs for the company, which significantly restricts the company's ability to acquire resources and inhibits the formation of competitive advantages [5].

By actively engaging in ESG practices, companies enhance positive interactions with stakeholders [6], communicate information about their environmental, social, and governance activities to the external world, and reduce the degree of information asymmetry, thereby improving transparency. Good corporate governance practices effectively monitor and restrain managerial behavior, preventing managers from engaging in self-serving actions that could harm the company and its stakeholders [7]. Strong ESG performance not only improves operational efficiency [8], enhances legitimacy, strengthens risk management, and promotes healthy operations, but also creates a favorable information environment and increases the efficiency of information transmission [9]. Suppliers and other business partners can promptly access information about the company's operational status, profitability, debt repayment capacity, future cash flow, and development prospects, reducing information risk faced by suppliers [10]. This allows suppliers to comprehensively evaluate the company's strength and determine whether, and to what extent, to provide trade credit financing. Additionally, all available information can be promptly and efficiently reflected in the securities market, enhancing market efficiency and fairness.

Previous analyses on the relationship between ESG performance and information transparency indicate that ESG performance primarily affects a company's information transparency through three aspects: comprehensiveness, accuracy [4], and timeliness [11].

In summary, because ESG performance encompasses key non-financial information about a company's operations, it can reduce information asymmetry, enhance corporate reputation, and enable investors to more accurately assess the company's long-term value and potential risks. This improves the company's market position and competitiveness, providing crucial reference value for investor decision-making and significantly enhancing the company's information transparency. Thus, Hypothesis 2 is proposed:

H2: ESG performance has a significant positive impact on a company's information transparency.

2.3. Analysis of the Mediating Effect of Information Transparency on Corporate Performance

Information transparency refers to the extent to which a company discloses its operational, financial, and governance information to the public. High information transparency indicates that a company is able to provide such information openly, promptly, and accurately, allowing investors, consumers, and other stakeholders to gain a clear understanding of its operations. An increase in information transparency can enhance a company's credibility, reduce information asymmetry, and improve market efficiency. High information transparency helps reduce information asymmetry, enhances corporate reputation, and promotes market competition. When a company openly discloses its operational and financial information, investors and other stakeholders can better assess the risks and returns associated with the company, leading to more informed decision-making. Transparent disclosures increase a company's credibility and market reputation, strengthening stakeholder trust in the company. Moreover, transparency enables fair competition among companies in the market, driving overall industry progress.

Overall corporate performance typically refers to a company's performance across multiple dimensions, including financial, operational, and social responsibility aspects. The metrics for measuring overall corporate performance include, but are not limited to, financial performance (e.g., revenue, profit, shareholder return), market performance (e.g., market share, brand value), and social performance (e.g., environmental protection, employee welfare, community contributions). Improving overall corporate performance not only brings direct economic benefits but also enhances a company's market competitiveness and social influence. The factors influencing overall corporate performance primarily include financial management, operational efficiency, market strategy, and social responsibility.

In the process of ESG performance impacting overall corporate performance, information transparency is considered a bridge that connects ESG performance and corporate performance, enhancing a company's market competitiveness [12]. By improving information transparency, companies can reduce information asymmetry, strengthening stakeholder trust and support. This trust and support can translate into increased market competitiveness and improved overall performance for the company. Moreover, transparent information disclosure can enhance market efficiency, allowing resources to be more efficiently allocated to companies with potential and value, thus boosting their overall performance.

Increased information transparency can also promote the standardization of corporate governance, reducing internal corruption and resource wastage, thereby improving operational efficiency and overall performance. Through transparent disclosures, companies can enhance their awareness of social responsibility and their corresponding actions, thus improving their social performance.

In summary, information transparency plays a crucial mediating role in the impact of ESG performance on overall corporate performance. Based on this, Hypothesis 3 is proposed:

H3: Information transparency mediates the relationship between ESG performance and corporate performance.

3. Research Design

3.1. Sample Selection and Data Sources

This study selects A-share listed companies in China from 2016 to 2021 as the research sample. ESG performance data is sourced from the WIND database, while other data comes from the CNRDS database. To enhance the robustness of the research results, the data was processed as follows: (1) Excluding samples of ST and *ST listed companies; (2) Excluding samples of companies with missing data; (3) Excluding samples of financial and insurance companies.

3.2. Variable Definitions

3.2.1. Dependent Variable

In the literature available, corporate performance is primarily measured through indicators of corporate financial performance. In this study, the return on total assets (ROA) is used as the measure of financial performance.

3.2.2. Independent Variable

In China, the ESG evaluation system is still in its early stages, but several evaluation systems, including Bloomberg, China Securities Index (CSI), and SynTao Green Finance, are being widely adopted. In this study, we use the CSI ESG rating as the tool to measure corporate ESG performance. The ratings are quantified on a scale from “AAA” to “C,” with scores assigned from 9 to 1, respectively. The CSI ESG rating data is chosen because this database covers a wide range of sample companies and updates its data in a timely manner, helping improve the reliability and accuracy of empirical research results.

3.2.3. Mediating Variable

The mediating variable is information transparency. This study draws on the method used by Xin Qingquan et al. [18] and constructs a comprehensive indicator (TRANSS) to measure corporate information transparency. This indicator is the average percentile rank of the following five variables: earnings quality (DD), information disclosure assessment score (DSCORE), number of analysts following the company (ANALYST), accuracy of analyst earnings forecasts (ACCURACY), and whether the company hired one of the Big Four accounting firms for annual report auditing (BIG4). A higher average score indicates higher corporate information transparency.

3.2.4. Control Variables

Following relevant research by Qiu Muyuan et al. (2019), Dong Shulan et al. (2018), and Sun Dong et al. (2019), this study selects indicators such as firm size, leverage ratio, firm age, growth rate, and ownership concentration as control variables. The details of these variables are shown in Table 1.

Table 1. Main Variable Definitions:

Variable Type	Variable Name	Symbol	Explanation
Dependent Variable	Corporate Performance	Index	Net income / Total assets
Independent Variable	ESG Performance	ESG	CSI ESG rating
Mediating Variable	Information Transparency	TRANS	Average percentile rank of DD, DSCORE, ANALYST, ACCURACY, and BIG4
Control Variables	Firm Size	Size	Natural logarithm of total assets
	Leverage Ratio	Lev	Total liabilities / Total assets
	Cash Flow Ratio	ROA	Net cash flow from operating activities / Total assets

Table 1. Continued

Firm Age	Age	Natural logarithm of the difference between the current year and the founding year, plus 1
Growth Rate	Growth	Growth rate of total revenue (current year revenue - prior year revenue) / prior year revenue
Ownership Concentration	Shrcr	Shareholding ratio of the top ten shareholders
Year	Year	Year dummy variable
Industry	Industry	Industry dummy variable

3.3. Model Design

To test Hypothesis H1, Model (1) is constructed:

$$TRANS_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_i Control_{i,t} + \sum Year + \sum Industry + e_{i,t}$$

Where Control represents the control variables, i denotes different corporate entities, t denotes the research period, $\sum Year$ represents year fixed effects, $\sum Industry$ represents industry fixed effects, and $e_{i,t}$ is the random disturbance term.

To test Hypothesis H2, Model (2) is constructed:

$$Index_{i,t} = \alpha_0 + \alpha_1 ESG_{i,t} + \alpha_i Control_{i,t} + \sum Year + \sum Industry + e_{i,t}$$

To test Hypothesis H3, Model (3) is constructed:

$$Index_{i,t} = g_0 + g_1 + ESG_{i,t} + g_2 TRANS_{i,t} + g_i Control_{i,t} + \sum Year + \sum Industry + e_{i,t}$$

4. Empirical Results and Analysis

4.1. Descriptive Statistical Analysis

Table 2. Descriptive Statistics

VarName	Obs	Mean	SD	Min	Median	Max
ROA	27699	0.039	0.067	-0.250	0.039	0.223
ESG	27699	4.079	0.875	2.000	4.000	6.000
TRANS	27699	3.042	0.624	1.000	3.000	4.000
Size	27699	22.178	1.257	19.953	21.987	26.152
Lev	27699	0.414	0.201	0.055	0.406	0.890
Cashflow	27699	0.048	0.067	-0.151	0.046	0.243
Firmage	27699	2.931	0.342	1.792	2.996	3.555
Growth	27699	0.163	0.371	-0.561	0.108	2.117

This study conducts a descriptive statistical analysis of the data obtained during the research process, as detailed in Table 2. From Table 2, it can be observed that the variable ROA, which measures corporate financial performance, has a maximum value of 0.223, a minimum value of -0.250, an average of 0.039, and a standard deviation of 0.067. This suggests that, due to industry differences, there is a disparity in the development levels of the companies in the sample, leading to noticeable differences in corporate performance. The ESG performance variable has a maximum value of 6.000, a minimum value of 2.000, an average of 4.079, and a standard deviation of 0.875, indicating significant variability in ESG performance across companies, with most companies generally scoring low in ESG performance. The variable representing information transparency (TRANS) has a maximum value of 4.000, a minimum value of 1.000, an average of 3.042, and a standard deviation of 0.624, indicating that the overall information transparency of the sample companies is relatively good. The descriptive statistics for other variables are omitted.

4.2. Correlation Analysis

Table 3. Correlation Analysis of Variables

	ROA	ESG	TRANS	Size	Lev	Cashflow	Firm age	Growth
ROA	1							
ESG	0.212** *	1						
TRANS	0.357** *	0.322** *	1					
Size	0.026** *	0.160** *	0.211***	1				
Lev	-0.353** *	-0.127** *	-0.108** *	0.490** *	1			
Cashflow	0.414** *	0.094** *	0.168** *	0.081** *	-0.164** *	1		
Firm age	-0.111** *	-0.044** *	-0.056** *	0.250** *	0.187** *	0.024** *	1	
Growth	0.289** *	0.081** 0.004 *		0.043** *	0.027** *	0.036** *	-0.096** *	1

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

Table 3 presents the results of the correlation analysis of the sample. The data shows a significant positive correlation between corporate financial performance, ESG performance, and information transparency. Specifically, the ESG performance (ESG) is significantly positively correlated with financial performance (ROA) at the 1% level, with a coefficient of 0.212. Similarly, ESG performance (ESG) is significantly positively correlated with information transparency (TRANS) at the 1% level, with a coefficient of 0.322. This preliminary result supports Hypotheses H1 and H2, indicating that the better the ESG performance of a company, the higher its information transparency and the better its corporate performance.

4.3. Regression Results

Table 4. Baseline Regression Results

	(1) ROA	(2) TRANS	(3) ROA
ESG	0.008*** (20.934)	0.180*** (43.332)	0.004*** (10.886)
TRANS			0.022*** (39.389)
Size	0.010*** (30.623)	0.139*** (40.074)	0.007*** (21.367)
Lev		-0.130***-0.573*** (-65.111) (-26.981)	-0.117*** (-59.740)
Cashflow	0.328*** (66.010)	0.860*** (16.245)	0.309*** (63.685)
Firm Age		-0.004***-0.076*** (-3.574) (-6.388)	-0.002** (-2.158)
Growth	0.049*** (55.370)	0.103*** (10.970)	0.046*** (54.185)
_Cons	-0.173*** (-24.078)	-0.365*** (-4.753)	-0.165*** (-23.609)
Year	Control	Control	Control
Industry	Control	Control	Control
N	27699	27699	27699
R2	0.393	0.192	0.425

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

Table 4 presents the baseline regression analysis results, showing the impact of different independent variables on the dependent variable (ROA, representing return on assets) and the mediating variable (TRANS, representing information transparency). Column (1) of Table 3 shows the results of the multivariate regression with ROA as the dependent variable and ESG performance (ESG) as the independent variable. Column (2) shows the results with TRANS (information transparency) as the dependent variable and ESG performance (ESG) as the independent variable. Column (3) shows the results when TRANS (information transparency) serves as a mediating variable for ROA.

The data in the table indicates that, across all three models, ESG passes the 1% significance level test and has a significant positive effect on both ROA and TRANS, indicating that improvements in a company's ESG score significantly enhance its return on assets and information transparency. In Model (3), the effect of TRANS on ROA is significant and positive, demonstrating that higher information transparency contributes to improved return on assets, supporting the mediating role of TRANS in the relationship between ESG and ROA. The results confirm that improved ESG performance significantly enhances a company's return on assets and information transparency. Firm size, cash flow, and growth rate have positive effects on both corporate performance and information transparency, while high leverage and older firms show poorer performance in these two aspects. Model (3) further illustrates that TRANS plays a mediating role in the impact of ESG on ROA.

4.4. Robustness Test

To verify the robustness of the regression results, the study conducted two robustness tests:

Table 5. Robustness Test—Restricting the Sample to Pre-2019 (Considering Outliers from COVID-19's Impact on Corporate Performance)

	(1) ROA	(2) TRANS	(3) ROA
ESG	0.008*** (17.790)	0.149*** (30.047)	0.004*** (10.059)
TRANS			0.023*** (35.045)
size	0.009*** (21.668)	0.136*** (28.438)	0.006*** (14.433)
Lev	-0.123*** (-49.332)	-0.638*** (-22.896)	-0.109*** (-44.239)
Cashflow	0.294*** (48.112)	0.992*** (14.578)	0.271*** (45.612)
Firmage	-0.002 (-1.441)	-0.079*** (-5.351)	-0.000 (-0.050)
Growth	0.042*** (39.416)	0.088*** (7.358)	0.040*** (38.776)
_Cons	-0.161*** (-17.303)	-0.127 (-1.225)	-0.158*** (-17.589)
Year	Control	Control	Control
Industry	Control	Control	Control
N	16935	16935	16935
R2	0.357	0.168	0.401

Table 6. Robustness Test—Substituting the Dependent Variable with ROE

	(1) ROE	(2) TRANS	(3) ROE
ESG	0.019*** (4.672)	0.180*** (43.332)	0.009** (2.127)
TRANS			0.056*** (9.544)
Size	0.039*** (11.531)	0.139*** (40.074)	0.032*** (9.004)
Lev	-0.363*** (-17.293)	-0.573*** (-26.981)	-0.331*** (-15.592)
Cashflow	0.579***	0.860***	0.531***

Table 6. Continued

	(11.118)	(16.245)	(10.157)
Firmage	-0.010	-0.076***	-0.005
	(-0.822)	(-6.388)	(-0.458)
Growth	0.120***	0.103***	0.114***
	(12.991)	(10.970)	(12.360)
_Cons	-0.769***	-0.365***	-0.749***
	(-10.185)	(-4.753)	(-9.931)
Year	Control	Control	Control
Industry	Control	Control	Control
N	27671	27699	27671
R2	0.032	0.192	0.035

4.5. Table 5 (Restricting Sample to Pre-2019):

Even after excluding the impact of COVID-19, ESG continues to have a significant positive impact on both ROA and TRANS, indicating that ESG performance positively influences corporate performance and information transparency regardless of the pandemic's effects. The directions and significance levels of other variables remain consistent with the main regression results, demonstrating the robustness of the findings.

4.6. Table 6 (Substituting Dependent Variable with ROE):

The impact of ESG on ROE and TRANS remains significant and positive, indicating that, across different performance metrics, ESG performance positively affects corporate performance and information transparency. The effect of TRANS on ROE is also significant and positive, further supporting the mediating role of TRANS. The directions and significance levels of other variables are consistent with the main regression results, providing further evidence of the robustness of the findings.

5. Conclusion and Recommendations

Based on the sample data of A-share listed companies in China from 2016 to 2021, this study deeply explores the impact of ESG information transparency on corporate performance and its mediating effects. The research reveals the following key conclusions: 1. Good corporate ESG performance can significantly enhance overall corporate performance. 2. Corporate ESG performance can significantly improve information transparency. 3. Information transparency plays a mediating role in the relationship between ESG performance and corporate performance. Specifically, the better the corporate ESG performance, the higher the information transparency, which in turn leads to better corporate performance.

Based on these conclusions, the following comprehensive recommendations are provided for various stakeholders: 1. Deepening ESG Practices at the Corporate Level: Companies should integrate ESG concepts into their core strategies by regularly publishing ESG reports to showcase their specific actions and achievements in environmental protection, social responsibility, and excellent governance. This not only helps improve transparency but also enhances public trust, thereby establishing a positive brand image in the market. Companies need to increase investment in research and development (R&D) and innovation, particularly in green technologies and sustainable products, to improve environmental performance, using this as a key pathway to enhance competitiveness and market share. 2. Continuous Optimization of Corporate Governance Structures: Companies should review and improve their governance structures to ensure fairness, transparency, and accountability in decision-making processes. This includes, but is not limited to, increasing the proportion of independent directors, optimizing board operations, and enhancing shareholder participation. Strengthening internal controls and risk management is crucial to ensure that while pursuing economic benefits, companies can also effectively manage potential risks, ensuring long-term stable development. 3. Comprehensive Fulfillment of Social Responsibilities: Companies should go beyond the traditional goal of profit maximization and actively engage in social welfare activities, such as providing employment opportunities, supporting education and training, and participating in community development initiatives, to generate positive externalities for society. During product design and production, companies should prioritize consumer rights protection by providing safe and high-quality products, thereby enhancing consumer trust and loyalty towards the corporate brand. 4. Proactive Assumption of Environmental Responsibilities: Companies should actively respond to national environmental policies and take effective measures to reduce pollutant emissions and improve resource utilization efficiency, such as adopting clean energy and implementing energy-saving and emission-reduction projects. Through green supply chain management, companies can encourage upstream and downstream enterprises to participate in environmental protection, forming a green development model across the entire industrial chain. 5. Policy Support and Guidance from Policymakers: Governments should introduce more incentive measures, such as tax breaks, financial subsidies, and green credit, to reduce the financial burden on companies implementing ESG practices and encourage more enterprises to participate in

sustainable development. Strengthening regulations and standards for ESG information disclosure ensures that the information disclosed by companies is truthful, accurate, and complete, enhancing market transparency and providing investors with reliable decision-making references. 6. Promotion of ESG Investment Concepts among Investors: Investors should incorporate ESG standards into their investment decision-making processes by using strategies such as ESG screening, negative screening, or active shareholder engagement to encourage companies they invest in to improve ESG performance. Investors can participate in shareholder meetings to propose or demand improvements in ESG practices, promoting continuous advancement in companies' ESG efforts. 7. In-Depth Research and Knowledge Dissemination by Academia: Academia should continue to research various aspects of ESG, including its impact on corporate financial and non-financial performance, best practices, and challenges in ESG implementation, to provide scientific guidance and advice for companies. Increasing investment in ESG education is essential to cultivate business leaders and professionals with a sustainability mindset, contributing to a high-quality workforce equipped with ESG principles.

Authors' Contributions

The two authors contribute equally to this work.

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