

Article

Transformational Leadership, Organizational Innovation, and ESG Performance: Evidence from SMEs in China

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Abstract: ESG is a sustainable development concept that integrates environmental, social, and corporate governance. Most studies on ESG have been conducted based on secondary data from listed companies and have not used questionnaires as a method for analysis. Given this research gap, this paper examines whether transformational leadership influences ESG performance in SMEs, whether organizational innovation mediates the relationship between transformational leadership and ESG performance, and the moderating effect of external social capital on transformational leadership and organizational innovation. Based on higher-order theory, resource-based theory, stakeholder theory, etc., we tested this hypothesis by conducting a regression analysis with a questionnaire collected from SMEs in China. After controlling for firm ownership, firm size, firm industry, and years in business, the results of the study indicate that transformational leadership has a positive effect on ESG performance and that organizational innovation partially mediates the relationship between transformational leadership and corporate ESG performance. Furthermore, external social capital moderates the direct relationship between transformational leadership and organizational innovation and moderates the role of organizational innovation as a mediator between transformational leadership and ESG performance. This study adds to our further understanding of the relationship between transformational leadership and ESG performance in SMEs, expanding the antecedent research on ESG performance and providing a basis for sustainable SME development.

Keywords: transformational leadership; external social capital; ESG performance; organizational innovation



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1. Introduction

Through economic, societal, and scientific and technological development, humans have accomplished great things [1,2]. The public's demand for environmental, social, and ethical responsibility of business has increased due to severe climate changes, depleting natural resources, harsh work conditions, and the proliferation of corporate scandals. More investors and consumers are focusing on corporate social responsibility and sustainability. Moreover, they expect companies to align their operating philosophies with social values [3]. In response to the emergence of these issues, the United Nations Commission on Environment and Development issued the "Brundtland Report" [4], and the concept of sustainable development was proposed. The ESG value concept is founded on sustainable development, and enterprises, as the fundamental units and organization of human economic and social operation, play a central role in sustainable development [5,6]. Therefore, for businesses to achieve sustainable economic and social development, the ESG value concept must be implemented.

ESG values can be traced back to the concept of socially responsible investment in the 1960s. It was not until 2004, when the United Nations Global Compact released its report [7], that ESG was introduced to the public as a holistic concept. ESG is an acronym for environmental, social, and governance. It provides a comprehensive framework for enterprises

and investors to integrate environmental, social, and corporate governance concerns [8]. It conveys the development concept of pursuing integrated economic and social benefits, a sustainable development concept that has recently emerged in corporate management and financial investment. Environmental concerns include pollution control, renewable energy use, greenhouse gas emissions, and other factors, as well as the resulting environmental impact [9]. The social dimension refers to a company's responsibility to its employees, consumers, communities, suppliers, and other stakeholders while maximizing profits within the confines of the law [10]. Governance refers to business ethics, anti-competitive behavior, and protecting shareholders' rights. It is the internal mechanism established by the company to achieve self-management, effective decision-making, compliance with laws and regulations, and the satisfaction of external stakeholders' needs [11]. The core concept of ESG is that enterprises should pursue economic benefits in economic and social activities and pay attention to environmental resource protection, corporate social responsibility, and corporate governance effectiveness to achieve balanced development across multiple dimensions [12]. As a new value concept, ESG can promote corporate transformation from "profit maximization" to "sustainable development". It has a significant effect on how companies manage their strategies and integrate their resources [13]. It is also an important tool for promoting high-quality economic growth and sustainable development [14]. Amid economic globalization, enterprises can only stand out in the increasingly fierce market competition if they can comprehensively address environmental, social, and corporate governance issues [15].

At the same time, investors at the international or regional level in developed countries take ESG investments seriously. According to KPMG, the global ESG disclosure rate for N100 companies was 76% in 2022, while 96% of G250 companies published ESG reports, indicating that ESG reporting has become an important management and investment concept for companies and financial institutions. In addition, the importance of ESG disclosure is being recognized by increasing numbers of regulators, stock exchanges, and investors. Moreover, many stock exchanges worldwide have begun to provide ESG disclosure requirements or guidelines for listed companies in countries such as the USA, the UK, Brazil, Canada, India, Malaysia, Norway, South Africa, France, Germany, the Philippines, Italy, and Singapore [16]. In the past few years, ESG has become one of the focal points of China's economic development activities. Although ESG development in China is still in its infancy, ESG investment in China is improving as ESG becomes more common in the international market and corporate managers, consumers, investors, and regulators are becoming increasingly aware of the importance of ESG concepts [17]. Furthermore, the Chinese market has seen rapid developments in the areas of environmental, social, and governance reporting [18]. To encourage Chinese companies in the active practice of ESG responsibilities as well as to help balance economic growth and environmental sustainability, the CDFI released the 2018 Report on the ESG Rating System for Chinese Listed Companies and the Green Investment Guidelines (Trial), which require listed companies to become carbon-neutral by 2060. In addition, the "double carbon" target manifests China's green development philosophy; to achieve this goal, China has to accelerate the construction of an ESG system to enhance its voice in the global sustainable development agenda [19]. On a global scale, after the COVID-19 pandemic shocked the global economy in 2020, systemic risks such as pandemics and climate change showed the need for sustainable development and green economies again, leading many countries to incorporate sustainability goals into their post-pandemic recovery plans [20].

With the emphasis on the ESG value concept in corporate strategic management, numerous theoretical and empirical studies on ESG have been conducted at home and abroad. Most studies examine the relationship between ESG evaluation systems or ESG investment and corporate performance; however, the research results are highly contentious and present two contradictory views. On the one hand, neoclassical economic theory suggests that a firm's mission is to maximize profits, ESG has strong negative externalities, and managers may use it as a self-interest tool, so firms' investment in ESG will lead to

a waste of corporate resources and higher costs, resulting in a decline in corporate performance [21–24]. On the other hand, based on resource stakeholder theory and stakeholder theory, ESG disclosure helps increase a company's transparency. In addition, investing in ESG can help companies develop internal resources to increase intrinsic earnings by enhancing corporate reputation [25–27]. The realization of corporate value is not limited to shareholders; environmental, social, and corporate governance factors should also be considered [20,28]. Financial factors significantly impact a company's ESG rating [6]. Companies whose environmental, social, and corporate governance work is sound and whose relationships with stakeholders are strengthened can achieve good performance [16,29]. During the COVID-19 pandemic, portfolios with high ESG scores showed a higher risk tolerance. Furthermore, share prices of companies with good ESG performance were less volatile, thus demonstrating their investors' confidence [14]. In other words, better ESG performance guarantees the anti-risk ability and long-term competitiveness of an enterprise. Apparently, the ESG investment concept can help align capital allocations with the goals of sustainable economic development [15]. Therefore, it is necessary to study the factors that influence corporate ESG in the context of the ESG investment concepts being promoted.

Although ESG theories have proliferated in recent years, however, most studies focus on developed markets [30], and very few studies investigate emerging markets [31,32]. China is on a high-quality development path but is still in the early stages of ESG development. Investors and companies still do not have a clear understanding of what ESG performance means in terms of corporate sustainability, or of the mechanisms underlying the role of leadership in corporate ESG performance. This paper uses higher-order behavior theory, social network theory, resource-based theory, and stakeholder theory as a foundation to investigate the effect of transformational leadership through organizational innovation on ESG performance of SMEs in China by distributing questionnaires to leaders and employees as a sample, as well as the moderating role of external social capital in transformational leadership and organizational innovation. The result indicates that transformational leadership has a positive impact on the ESG performance of SMEs. Organizational innovation partially mediates the relationship between transformational leadership and corporate ESG performance. Furthermore, the role of transformational leadership in organizational innovation is stronger when firms have higher levels of external social capital.

This study will offer three original contributions. First, it will enrich the research on the ESG performance of SMEs in developed countries. Most studies on ESG performance are based on secondary data from capital markets or listed companies in developed countries; there are no empirical studies based on primary data. To bridge this gap in the literature, this paper will distribute questionnaires to Chinese SMEs, which is an unexplored approach to ESG performance research. Second, it will enrich knowledge of the antecedents of ESG performance in SMEs. Most studies focus on the impact of ESG indicators or ESG investment on corporate financial performance but do not focus on ESG performance as a dependent variable, which means this study's approach is a useful supplement to previous studies. Third, this study helps policymakers, stakeholders, regulators, and scholars improve their understanding of corporate sustainability. It also provides key theoretical and practical values for promoting corporate sustainability. This paper is organized as follows: first, a literature review based on pertinent theories and the establishment of research hypotheses; second, measurement of relevant variables and empirical analysis based on data and elaboration of research results; and third, a discussion of research findings, management insights, research limitations, and suggestions for future research.

2. Theoretical Background and Research Hypothesis

2.1. Transformational Leadership and ESG Performance

Higher-order theory is derived from Hambrick and Mason [33]. The theory is that executives are the subjects of strategic decision-making within an organization. They make limited rational decisions based on their psychological characteristics and highly

individualized interpretations and decisions regarding the organizational situations they encounter. Senior managers participate in strategy formulation and play important roles such as control, coordination, and leadership in the process of strategy implementation. The top leaders who hold the decision-making power in the company have the strongest influence on the formation and adjustment of corporate behavior [34]. Therefore, strong leadership is required to formulate forward-looking corporate strategies and implement necessary organizational changes [35].

Transformational leadership theory was developed by Bass [36]. Transformational leaders possess four dimensions: idealized influence or charisma, inspirational motivation, intellectual stimulation, and individualized consideration [37]. In addition, transformational leaders have a solid sense of intrinsic value and a conceptual system. They provide a clear vision for their subordinates, stimulate their high-level needs by making them aware of the importance of the tasks they undertake, build a climate of mutual trust, motivate them to sacrifice their self-interest for the good of the organization, and ultimately achieve performance beyond expectations [38,39].

Researchers have looked into transformational leadership from various perspectives, including psychological factors such as personality, mindset, and cognition of business leaders, as well as environments that affect transformational leadership behaviors [40–42]. For example, transformational leaders influence their followers by the following means: (a) setting examples of appropriate behaviors; (b) projecting a view of the future that shows employees what to strive for and where to go; (c) taking an active interest in the lives and work of their employees; and (d) fostering independence and active participation in tasks to increase their employees' job satisfaction, organizational commitment, organizational identity, etc., and thus enhance job performance [43–46].

Transformational leaders communicate a clear and consistent vision regarding environmental responsibility by disseminating environmental information to demonstrate environmental commitment and values for action and discussing sustainability's significance [47,48]. Moreover, transformational leaders can inspire a shared organizational vision, demonstrate the value and significance of environmental stewardship, and provide cohesive and information-sharing rallying points, thereby integrating environmental performance into corporate strategic planning [49,50]. According to social identity theory, individuals' attitudes and behaviors can influence their group membership in CSR [51]. The humanistic perspective of transformational leaders, which is based on altruism, justice, and the greater good, effectively creates a collective identity based on appealing values, which may include catering to the more significant needs of stakeholder groups and the social good and are in line with corporate social responsibility [52,53]. Thus, followers will associate their organization's identity with the greater social good and be motivated to engage in CSR [54,55].

In 1963, the Stanford Research Institute introduced stakeholder theory, which emphasizes the mutual influence between a firm and its stakeholders. Stakeholders are individuals or groups, such as investors and employees, who are dependent on the firm to achieve their goals and who the firm depends on for its development [56]. Based on previous research, Freeman and Mcvea [57] defines stakeholders as "individuals or groups of individuals who can influence or are influenced by the achievement of a firm's organizational goals". This definition considers the individuals and groups that influence the goals of the company as stakeholders, also considers the individuals and groups that are affected by the achievement of the company's goals as stakeholders, and formally includes entities such as communities, governments, and environmental protection organizations in the study of stakeholders, all of which greatly expand the connotation of "stakeholders [58]". At the level of corporate governance, transformational leaders begin with the organization's shared vision and consider not only the interests of shareholders but also those of other stakeholders, such as small- and medium-sized shareholders, external investors, creditors, employees, and the government [59]. They also improve the transparency of corporate

information and develop a sound corporate governance system [60,61]. Based on the initial assertion, we propose the following hypothesis:

Hypothesis 1 (H1). *Transformational leadership has a positive impact on ESG performance.*

2.2. Transformational Leadership and Organizational Innovation

Organizational innovation can be a new product or service, a new production process technology, a new structure or management system, or a new program or project involving organizational members [62]. OCED [63] distinguishes four types of innovation: product innovation, process innovation, marketing innovation, and management innovation. Innovation within an organization generates the most valuable, organizational, and difficult-to-replicate strategic assets that lead to enhanced business performance [64]. According to resource-based theory, a resource is anything in an organization that demonstrates the organization's core competencies, both in the form of tangible assets and intangible assets [65]. A company's competitive advantage and performance depend on how it uses its strategic resources, which are valuable, rare, and difficult for market rivals to imitate [66]. Therefore, organizational innovation is a direct source of competitive advantage and one of the essential sources of sustained competitiveness for modern businesses [67].

The impact of leadership style on organizational innovation has been the subject of extensive research. Most studies conclude that different leadership styles affect organizational innovation [68,69]. For example, transformational leadership, ethical leadership, servant leadership, and responsible leadership have a positive impact on organizational innovation [70,71], but authoritarian leadership has a negative impact on organizational innovation [72]. In addition, absorptive capacity, knowledge integration, organizational culture, and knowledge sharing at the organizational level also have a positive impact on organizational innovation [73–76]. Transformational leadership articulates the significant vision and mission of the organization. It enhances the significance of employees' interest in the organization by stimulating their high-level needs for self-actualization, enabling employees to identify with and be motivated by intrinsic motivation to achieve their goals and assisting them in achieving organizational goals [77]. Transformational leadership also fosters dedication to long-term goals, mission, and vision by demonstrating high expectations and confidence in employees' abilities and providing intellectual stimulation that encourages employees to think creatively and adopt innovative work practices [78]. The resulting increase in employee motivation and self-esteem will boost organizational innovation [79]. Based on the initial assertion, we propose the following hypothesis:

Hypothesis 2 (H2). *Transformational leadership has a positive impact on organizational innovation.*

2.3. Organizational Innovation and ESG Performance

Hellström [80] formulated the theory of responsible innovation. In 2011, the European Commission published the report [81], in which the concept of "responsible innovation" was included for the first time as a vital element of the EU's development strategy. Meanwhile, the report "Addressing Ethical and Regulatory Challenges in Research Policy at the Global Level" outlined the fundamental elements of responsible innovation as social interest, moral and ethical acceptability, and risk management. According to the theory, responsible innovation requires innovative understanding and practice characterized by methodological features such as respect and preservation of human rights, the promotion of social well-being, and the full and active assumption of responsibilities [82]. To manage innovation practices in a way that seeks to improve innovations for society, it is also characterized by more elements being included in the responsibility system, greater consideration of human rights, and the pursuit of green and inclusive innovation outcomes [83]. Introducing this concept provides an operational path for businesses to realize sustainable development, which is a result of the deepening development of the global concept of "sustainable development" at present [84]. Therefore, businesses should consider the

interests of both direct and indirect stakeholders in the innovation process and the ethical, ecological, and social dimensions in addition to the economic dimension [85,86].

The impact of organizational innovation on the economic performance and innovation performance of businesses has been the subject of numerous studies. Most academics believe that the influence of organizational innovation on enterprises includes reducing management or transaction costs to improve the performance of enterprises; increasing labor productivity by improving workplace satisfaction; acquiring assets that cannot be traded directly, such as non-coding knowledge or reduced supply costs; and flattening the inter-organizational or intra-organizational structure, which means employees and stakeholders are promoted to carry out potential innovation activities [87,88]. However, research on organizational innovation and ESG performance is scant. Legitimacy theory views legitimacy as an overarching concept or presumption in which organizations seek to establish coherence between the social values associated with or implied by their activities and the norms of acceptable behavior in the more extensive social system to which they belong [89]. Companies should consciously comply with social norms and contracts, actively fulfill their environmental responsibilities, and act to promote environmental protection to protect their interests [90]. Therefore, to achieve sustainable long-term business development as an ultimate business goal, innovation with only economic benefits can no longer meet the needs of enterprise development, which now requires strength in both economic and environmental performance [91]. By incorporating green concepts into organizational innovation, businesses can increase the environmental consciousness of their employees, which can lead to environmentally responsible actions [92]. On the other hand, innovation based on production process improvement can help reduce pollution emissions, reduce production costs, and improve the performance of the company's products, thereby satisfying the environmental ethics requirements of stakeholders and enhancing competitive advantage [93].

Porter [94] formally introduced the theory of competitive advantage. The theory states that a firm's competitive advantage refers to its ability to outperform other competitors in the process of providing consumers with products or services of a specific value in an effective "contestable market" and to create market dominance or profitability that is higher than the average of the industry in which it is located for a certain period [95]. A firm has a competitive advantage when it implements a value-creation strategy that is not implemented by any current or potential competitor. Innovation, according to Zeng et al. [96], is an efficient method for organizations to acquire and transform resources and shape resource differentiation, which can result in scarce, unique, and irreplaceable core competencies. Innovation influences CSR in a great variety of ways, such as by increasing the productivity of businesses to improve their ability to fulfill economic responsibility, by increasing the size of businesses to improve their ability to fulfill product responsibility, and by increasing the size of businesses to improve their ability to fulfill philanthropic responsibility [97]. Product innovation can result in product quality enhancement and product structure optimization, which better fulfill product responsibility; the development of enterprises enables them to engage in social charity and enhance their capacity to feed society [98]. The innovation drive also encourages businesses to fulfill their social responsibilities more effectively, enhancing their reputation and fostering a favorable external environment for future development [99].

The traditional principal-agent theory argued that the separation of ownership and control of modern companies is a significant source of governance issues and that in the principal-agent relationship, the principal and the agent pursue different goals. Agents seek to improve their social standing, income, and other concerns. With the separation of the two powers, corporate managers have more power and are likely to sacrifice the interests of corporate owners for their interests, resulting in moral hazard in the principal-agent relationship [100]. However, theory-based stakeholder co-governance was proposed as people began to question the unidirectional governance model of shareholders [101]. This model holds that businesses operate in an open market environment and that all stake-

holders, including employees, suppliers, creditors, and investors, participate in corporate governance. Through a network of mutual interaction and influence, stakeholders create value and share risk [102].

Studies have examined the impact of corporate governance on technological innovation, considering factors such as equity concentration, board size, the number of independent directors, and executive incentives [103–106]. However, organizational innovation also impacts corporate governance effectiveness to some extent. For businesses to maintain their competitive advantage and achieve significant market expansion, continuous innovation is required [94]. New management techniques can reduce transaction costs and protect shareholders' and other stakeholders' interests [107]. In addition, organizational innovation can better motivate employees, make them realize they are the company's owners, and increase their participation in the business's day-to-day operations [108]. Therefore, organizational innovation influences corporate governance positively. Based on the initial assertion, we propose the following hypothesis:

Hypothesis 3 (H3). *Organizational innovation has a positive impact on ESG performance.*

Based on the above theoretical development, this study argues that the impact of transformational leadership on ESG performance may vary depending on the role of organizational innovation mechanisms as mediators. Transformational leadership increases employees' intrinsic motivation and work motivation through their organizational commitment, thereby fostering organizational innovation and enhancing ESG performance. Based on the statement above, the mediating-role hypothesis is proposed.

Hypothesis 4 (H4). *Transformational leaders have a positive impact on ESG performance through organizational innovation.*

2.4. The Moderating Role of External Social Capital

According to social network theory, organizations have social utility. People in social situations think and act in similar ways because of the bonds they share. Social networks represent not only two interrelated actors but an aggregate of polyglot indirect relationships and paths that encompass all actors in society [109]. Moreover, the network relationships created bring opportunities and challenges to organizations [110]. Furthermore, the social capital of enterprises consists of the resources that are embedded in the social network and acquired and mobilized through purposeful actions [111]. It has been noted that, in a trust-based relationship network, the ability to borrow resources through the relationship network and the enterprise assets created and accumulated by the economic or non-economic actions taken to achieve an enterprise's goals constitute actual or potential resource aggregation, and the assets are considered important capital, in addition to material capital, human capital, and cultural capital [112]. According to the theory of resource dependence, the business activities of enterprises require resources [113]. Enterprise development depends on internal and external information and resource exchanges [114]. As the "collection of actual or potential resources" of an enterprise, social capital is one of the key business resources that affect or even determine the acquisition of other enterprise resources, such as capital and human resources, information resources, and legal support [115].

The external social capital of a company refers to the positive network ties that a company maintains through its customers, suppliers, financial institutions, government agencies, and other organizations to maintain mutually viable relationships [116]. Mainly, external social capital reflects the resource acquisition capability embedded in an organization's external social network and emphasizes the organization's diverse external social relationships and the network's relationship quality [117]. Most researchers on external social capital believe that external social capital is conducive to an enterprise's access to various types of information, reduces the cost of information search, and brings

information diversification to businesses [118]. Moreover, social capital promotes resource exchange and integration between enterprises, enhances cooperation between enterprises, reduces transaction costs [119], and promotes knowledge sharing and cooperation between organizations, which is conducive to the generation of new ideas and innovations in enterprises [120]. First, enterprises are in the same industrial chain as their suppliers and customers, and customers and suppliers are both the closest business partners in the production and operation of enterprises as well as the primary providers of important product information to these enterprises [121]. Furthermore, establishing good relationships with companies with low external social capital can enable leaders to access useful information and feedback, which will have an important impact on the innovation activities of enterprises [122]. Second, firms maintain good relationships with their business partners to help form complementary resource models with other entities over time. Moreover, firms share resources to master complex technologies, promote resource integration and knowledge exchange, and acquire valuable external knowledge, thus helping leaders reduce search and information costs, negotiation and decision costs, and regulatory and enforcement costs, thus enhancing organizational innovation capabilities [123]. Finally, government agencies have jurisdiction over regulations, R&D funding, standard settings, procurement, and other functions that shape the innovation capabilities of firms. They also hold more innovative and strategic resources and intervene more in the economy [124]. Establishing and maintaining good relationships with the government also helps business leaders gain access to a variety of scarce innovative resources controlled by the government [125]. Based on this, the following hypotheses are proposed:

Hypothesis 5 (H5). *External social capital can positively moderate the relationship between transformational leadership and organizational innovation.*

Integrating H4 and H5, this study proposes a mediating-role model moderated with the following hypothesis:

Hypothesis 6 (H6). *External social capital positively moderates the mediating role of organizational innovation in the relationship between transformational leadership and ESG performance.*

The research framework is shown in Figure 1.

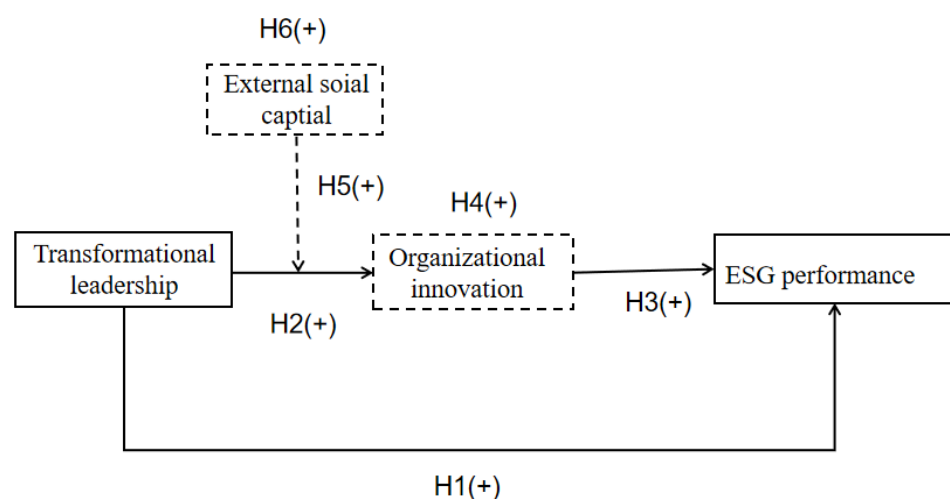


Figure 1. Research Framework.

3. Methodology

3.1. Data and Samples

This study employed a questionnaire survey to collect data. In July 2022, 500 questionnaires were distributed twice to Chinese managers and employees of enterprises; company

employees evaluated transformational leaders, and leaders reported basic company information. In total, 370 questionnaires were collected in October 2022, and the questionnaire recovery rate was approximately 74%. After eliminating invalid questionnaires, we finally obtained 350 valid questionnaires. The valid questionnaire recovery rate was 70%. From the recovered samples, 47% were male and 53% were female; 76.3% had a bachelor's degree or higher. Years in business was concentrated in less than 5 years category, which accounted for 34.86%. There were 87 state-owned enterprises, which accounted for 24.86%; 82 private enterprises, which accounted for 23.43%; 98 foreign enterprises, which accounted for 28.00%; and other businesses, which accounted for 29%. The finance and insurance industry employed 21 individuals, which accounted for 6%; the education industry employed 32 individuals, which accounted for 9.14%; and the transportation industry employed 26 individuals, which accounted for 7.43%. The manufacturing industry employed 41 individuals, which accounted for 11.71%, and services and 7 other industries accounted for 65.72%. Enterprises with 0–50 employees represented 23.14%, those with 50–200 employees represented 20.57%, those with 200–500 employees represented 32.86%, and those with more than 500 employees represented 23.43%. The demographic characteristics of the investigated respondents are shown in Table 1.

Table 1. Participants' demographic profiles.

Characteristic	Options	No.	Percentage
Gender	Male	165	47.14
	Female	185	52.86
Age	20–30 years old	90	25.71
	30–40 years old	103	29.43
	40–50 years old	97	27.71
	Over 50 years old	60	17.14
Education	High school	83	23.71
	College degree	107	30.57
	Bachelor's degree	78	22.29
	Master's degree or above	82	23.43
Years in business	Less than 5 years	122	34.86
	5–10 years	31	8.86
	10–20 years	110	31.43
	More than 20 years	87	24.86
Firm ownership	State-owned enterprise	87	24.86
	Private enterprise	82	23.43
	Foreign enterprise	98	28.00
	Others	83	23.71
Firm industry	Manufacturing industry	41	11.71
	Finance and insurance industry	21	6.00
	Culture, sports, and entertainment industry	25	7.14
	Wholesale, retail, and service industry	29	8.29
	Real estate industry	35	10.00
	Information transportation, computer services, and software industry	41	11.71
	Scientific research, technical services, geological prospecting, and energy industry	38	10.86
	Health and social security industry	33	9.43
	Transportation industry	26	7.43
	Education industry	32	9.14
Others	29	8.29	
Firm size	0–50 people	81	23.14
	50–200 people	72	20.57
	200–500 people	115	32.86
	More than 500 people	82	23.43
	Total	350	100.0

3.2. Variable Measurement

The variables measured in this study were selected from established domestic and international scales, and the items were modified and adapted based on the actual situation. All scales were measured using a 5-point Likert scale, with 5 representing “strongly agree” and 1 representing “strongly disagree”.

Transformational leadership: This study measures transformational leadership using a scale developed by scholars including Alrowwad and Chen [126,127]. The eight-item scale has demonstrated high levels of reliability and validity in previous research. Representative items on the scale include “the leader shows determination in accomplishing goals” and “the leader portrays an inspiring future”. In this study, Cronbach’s alpha coefficient for the scale is 0.895.

Organizational innovation: This study measures organizational innovation using a scale developed by scholars including Jansen and Zhou [128,129]. Previous research has demonstrated the reliability and validity of the five-item scale. Representative items on the scale include “the company introduces a new management system” and “the company introduces a new approach to planning and budgeting”.

External social capital: This study measures external social capital using a scale developed by academics including Bornay-Barrachina et al. [130,131]. Previous research has demonstrated the reliability and validity of the six-item scale. Representative items on the scale include “The company maintains good relationships with government departments” and “The company maintains good cooperative relationships with its suppliers”.

ESG performance: This study measures ESG performance using a scale developed by scholars such as De Roeck and Li [132,133], as well as data from databases such as Thomson Reuters. Environmental performance, corporate social responsibility, and corporate governance are the three dimensions of the scale. The environmental performance consists of six measures, such as “the company reduces environmentally harmful behaviors” and “the company uses clean energy and fuels”. Corporate social responsibility consists of twelve measures, such as “the company values the welfare of its employees” and “the company participates in long-term social welfare activities”. Finally, corporate governance consists of six measures, such as “the company has a good information disclosure mechanism” and “the company has good business ethics”.

Control variables: Based on prior research, years in business, firm ownership, industry, and size were utilized as control variables. The number of employees determines the size of a company: 1 represents 0 to 50 employees, 2 represents 50 to 200 employees, 3 represents 200 to 500 employees, and 4 represents more than 500 employees. There are four types of firm ownership: state-owned enterprises, private enterprises, enterprises funded by foreign investors, and others. In addition, the firm industries are the financial industry, the real estate industry, and the service industry, among others. Construct and items are shown in Appendix A.

3.3. Reliability and Validity Test

Reliability test: The reliability test of the survey questionnaire is referred to as the reliability test. The alpha coefficient of Cronbach is primarily used for reliability tests. If Cronbach’s alpha coefficient is greater than 0.7, each questionnaire item has a high degree of reliability. For example, in this study, Cronbach’s alpha coefficients for transformational leadership, organizational innovation, external social capital, and corporate ESG performance are 0.895, 0.834, 0.882, and 0.880, respectively, all greater than 0.7, indicating that the questionnaire items for each variable have good reliability.

Validity test: Validity refers to the design and content accuracy of the questionnaire. As shown in Table 2, the variance explained and factor loading are used to test the validity of the questionnaire in this study. All KMO values exceed 0.8, indicating that the scale is appropriate for factor analysis. All variables in this study can be distinguished with precision. All the factor loadings of the questionnaire questions were greater than 0.7. This indicates that the questionnaire’s convergent validity is high.

Table 2. Confirmatory factor analysis, reliability, and validity of measurement model.

Construct	Items	Factor Loading	Variance Explained	Cronbach's Alpha	KMO Value
Transformational Leadership (TL)	TL1	0.863	0.576	0.895	0.932
	TL2	0.746			
	TL3	0.737			
	TL4	0.731			
	TL5	0.724			
	TL6	0.755			
	TL7	0.772			
	TL8	0.739			
Organizational innovation (OL)	OI1	0.866	0.601	0.834	0.845
	OI2	0.777			
	OI3	0.748			
	OI4	0.754			
	OI5	0.723			
External social capital (SC)	SC1	0.868	0.631	0.882	0.903
	SC2	0.821			
	SC3	0.799			
	SC4	0.785			
	SC5	0.705			
	SC6	0.777			
Environmental performance (EP)	EP1	0.911	0.633	0.884	0.893
	EP2	0.771			
	EP3	0.765			
	EP4	0.796			
	EP5	0.772			
	EP6	0.751			
Corporate social responsibility (CR)	CSR1	0.903	0.603	0.940	0.917
	CSR2	0.753			
	CSR3	0.773			
	CSR4	0.761			
	CSR5	0.752			
	CSR6	0.757			
	CSR7	0.809			
	CSR8	0.769			
	CSR9	0.774			
	CSR10	0.753			
	CSR11	0.741			
	CSR12	0.763			
Corporate governance (CG)	CG1	0.905	0.651	0.892	0.901
	CG2	0.811			
	CG3	0.777			
	CG4	0.771			
	CG5	0.777			
	CG6	0.791			

3.4. Confirmatory Factor Analysis

We validated the primary variables of the study (transformational leadership, organizational innovation, external social capital, and ESG performance). According to the theoretical dimensions designed by the variable scale, ESG performance includes three first-order factors (corresponding to environmental performance, corporate social responsibility, and corporate governance, respectively). As shown in Table 3, the six-factor model assumed in this study has the best-fit index relative to other models, indicating that the six variables have good discriminant validity and correspond to six distinct constructs. The values of their χ^2/df , TLI, CFI, RMR, and RMSEA were 1.380, 0.960, 0.962, 0.069, and 0.033, respectively, which were superior to those of the five-factor, four-factor, three-factor, two-factor, and one-factor models, indicating that the variables designed for this study had superior discriminant validity. As shown in Table 4, each construct's composite reliability (CR) was high, with the lowest value being 0.838, indicating that the constructs have good convergent validity. The study used AVE values for discriminant validity testing, and Table 4 shows that the AVE values of all variables are higher than 0.5, so it can be concluded that the variables have good discriminant validity.

Table 3. Results of confirmatory factor analysis.

Model	χ^2	df	χ^2/df	TLI	CFI	RMR	RMSEA
Six-factor TL, SC, OI, EP, CSR, GC	1166.300	845	1.380	0.960	0.962	0.069	0.033
Five-factor TL, SC + OI, EP, CSR, GC	1663.093	850	1.957	0.898	0.904	0.088	0.052
Four-factor TL + SC + OI, EP, CSR, GC	2390.761	854	2.799	0.809	0.819	0.096	0.072
Three-factor TL, SC + OI, EP + CSR + GC	3135.968	857	3.659	0.717	0.732	0.129	0.087
Two-factor TL + SC + OI, EP + CSR + GC	3863.568	859	4.498	0.628	0.647	0.134	0.100
One-factor TL + SC + OI + EP + CSR + GC	4362.877	860	5.073	0.567	0.588	0.132	0.108

Note: TL = transformational leadership, SC = external social capital, OI = organizational innovation, EP = environmental performance, CSR = corporate social responsibility, and GC = corporate governance. "+" indicates combined variables. Same applies below.

Table 4. Model AVE and CR indicator results.

Factor	Average Variance of Extracted AVE Values	CR Value of Combined Confidence
TL	0.520	0.896
SC	0.561	0.884
OI	0.509	0.838
EP	0.569	0.887
CSR	0.569	0.940
GC	0.588	0.895

3.5. Multicollinearity Analysis

To avoid serious correlations between variables, this study used the analysis of variance inflation factor (VIF) to determine if there is multicollinearity amongst the explanatory variables. An analysis of the results shown in Table 5 shows that the VIF values of each explanatory variable are below 5, with a tolerance greater than 0.1, indicating that there is no multicollinearity amongst the explanatory variables.

Table 5. Multicollinearity analysis.

Variable	VIF	1/VIF
EP	1.72	0.583
CSR	1.62	0.616
TL	1.56	0.640
CG	1.53	0.648
SC	1.49	0.673
OI	1.43	0.698
Mean VIF	1.56	

4. Research Results

The mean, standard deviation, and correlation coefficient of each variable are shown in Table 6. The results of the correlation analysis indicate a significant positive relationship between transformational leadership and ESG performance, with a correlation coefficient value of 0.593, which is greater than 0. In addition, there is a significant positive relationship between external social capital and organizational innovation, with a correlation coefficient value of 0.367, which is greater than 0. There is a positive relationship between transformational leadership and external social capital, with a correlation coefficient of 0.351, which is greater than 0. Finally, there is a significant positive relationship between organizational

innovation and ESG performance, with correlation coefficient values of 0.519, which is greater than 0.

Table 6. Means, standard deviations, and correlation coefficients of variables.

Variable	Mean	SD	1	2	3	4	5	6	7	8
Years in business	2.460	1.203	1							
Firm ownership	2.510	1.107	−0.049	1						
Firm industry	5.990	3.111	0.032	−0.004	1					
Firm size	2.570	1.087	−0.065	0.019	0.020	1				
TL	3.255	0.822	0.016	0.071	0.057	−0.030	1			
SC	3.254	0.892	0.030	−0.003	0.034	−0.040	0.351 **	1		
OI	3.280	0.841	0.026	0.036	0.071	0.026	0.377 **	0.367 **	1	
ESG	3.087	0.741	0.055	−0.008	0.043	−0.005	0.593 **	0.563 **	0.519 **	1

Note: N = 350, ** is $p < 0.01$, two-tailed test.

In order to test the proposed hypotheses, this study conducted a multiple linear regression of the variables of interest using SPSS 26.0 software to test the research model while controlling for years in business, firm ownership, firm industry, and firm size (see Table 7). Table 7 shows that control variables are not statistically significant for organizational innovation and ESG performance. Transformational leadership positively affects ESG performance ($b = 0.421, p < 0.001$), and H1 is supported. Transformational leadership has a significant positive effect on organizational innovation ($b = 0.288, p < 0.001$), indicating that H2 is supported. Organizational innovation has a significant positive effect on ESG performance ($b = 0.304, p < 0.001$); thus, H3 is supported. In addition, as shown in Table 8, the bootstrap test indicates that this mediating effect is statistically significant, with a mediating effect value of 0.116, 95% CI = [0.079, 0.157], excluding 0; thus, H4 is supported.

Table 7. Results of regression analysis.

Variable	ESG Performance				Organizational Innovation			
	β	SE	<i>t</i> -Value	<i>p</i> -Value	β	SE	<i>t</i> -Value	<i>p</i> -Value
Constant	2.123	0.176	12.074	0.000 **	3.143	0.181	16.901	0.000 **
TL	0.421	0.039	10.819	0.000 **	0.288	0.052	5.654	0.000 **
SC					0.258	0.048	5.440	0.000 **
TL * SC					0.215	0.057	3.755	0.000 **
Firm ownership	−0.035	0.027	−1.305	0.193	0.010	0.033	0.294	0.769
Firm industry	−0.002	0.010	−0.243	0.808	0.013	0.013	1.004	0.316
Firm size	0.001	0.027	0.029	0.977	0.030	0.037	0.824	0.410
Years in business	0.023	0.025	0.917	0.360	0.010	0.033	0.294	0.769
OI	0.304	0.038	8.009	0.000 **				
<i>R</i>			0.676				0.491	
<i>R</i> ²			0.457				0.241	
<i>F</i> -value			48.178				15.517	

Note: N = 350, ** is $p < 0.01$.

Table 8. Decomposition of the total, direct, and indirect effect (Bootstrap = 5000).

	Effect	SE	LLCI	ULCI
Total effect	0.537	0.039	0.460	0.614
Direct effect	0.421	0.039	0.344	0.497
Indirect effect	0.116	0.020	0.079	0.157

The results indicate that external social capital significantly positively affects organizational innovation ($b = 0.258, p < 0.001$). There is a significant impact of the interaction term between transformational leadership and external social capital on ESG performance ($b = 0.215, p < 0.001$). The slope of the simple analysis indicates (see Figure 2) that when external social capital is low, the effect of transformational leadership on ESG performance is insignificant ($b = 0.096, p = 0.184$). The effect of transformational leadership on ESG

performance is more significant when the external social capital is high ($b = 0.479, p < 0.001$), and H5 is supported.

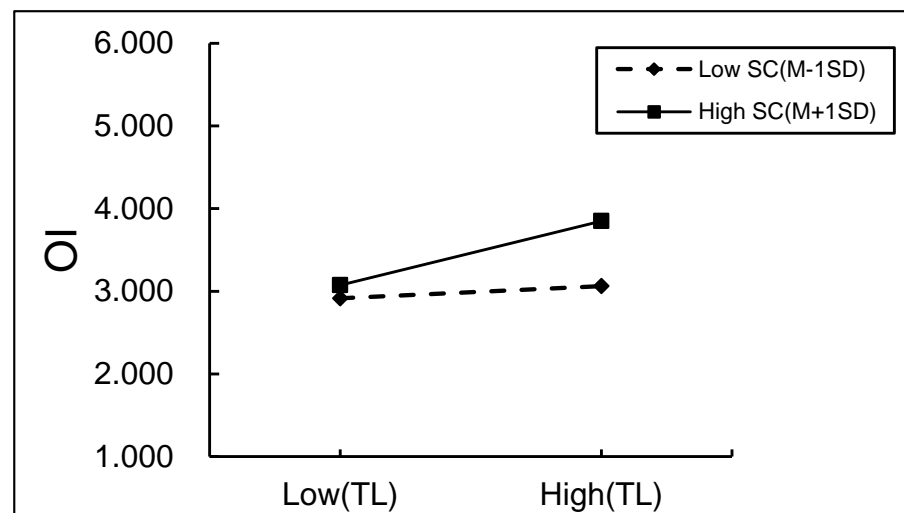


Figure 2. The moderating role of external social capital in the relationship between transformational leadership and organizational innovation.

According to Table 9, the analysis of moderated mediated effects reveals that when the external social capital is low, the indirect relationship between transformational leadership and ESG performance via organizational innovation is 0.029, 95% CI = [−0.018, 0.076]. When the external social capital is high, the indirect relationship between transformational leadership and ESG performance via organizational innovation is 0.146, 95% CI = [0.098, 0.200], and there is a significant difference in the indirect effect at both high and low levels, with a difference of 0.117, 95% CI = [0.028, 0.108]. Hence, H6 is supported.

Table 9. Results of bootstrap test for the moderated mediated-effects model.

SC	TL→OI→ESG			
	Effect	SE	LLCI	ULCI
Low group	0.029	0.024	−0.018	0.076
High group	0.146	0.027	0.098	0.200
Differences between groups	0.117	0.020	0.028	0.108

Note: Results for bootstrap = 5000. The test to distinguish between indirect and direct effects is based on the confidence interval of bootstrap estimates after bias correction.

5. Discussion

This study advances knowledge about how a firm's ESG performance can be enhanced by its transformational leadership style. While the existing literature has investigated consequences of ESG performance, empirical studies on the transformational leadership–ESG performance outcome link are lacking. This study explored the action mechanisms between transformational leadership and ESG performance of SMEs from a strategic perspective, using a combination of higher-order theory, a resource-based view, and stakeholder theory. A questionnaire was administered to SME employees and senior leaders in a Chinese context, with transformational leadership as the dependent variable, corporate ESG performance as the independent variable, organizational innovation as a mediating variable between transformational leadership and ESG performance, and external social capital as a moderating variable between transformational leadership and organizational innovation. The conclusions of the study follow:

First, transformational leadership positively affects ESG performance in SMEs. Transformational leadership is an inherent element that focuses on the personal development of employees and creates a positive environment for their development through visionary motivation and personalized care [134]. In short, it is a leadership style that creates a positive environment for employees to develop. Transformational leaders are well positioned to integrate corporate sustainability with ESG performance, leading by example and communicating to employees through vision statements so that the employees have a clear understanding of the importance of ESG performance to corporate sustainability.

Second, organizational innovation partially mediates the linkages between transformational leadership and corporate ESG performance. For instance, transformational leaders help employees acquire knowledge and skills to enhance innovation through intellectual stimulation and visionary motivation, adopt innovative approaches to effectively increase employee motivation, and continuously improve employee motivation levels so that employees internalize organizational innovation goals as their own valued goals [135], thus improving ESG performance.

Third, external social capital positively moderates the direct relationships between transformational leadership and organizational innovation. External social capital is the bridging capital that connects the entire social relationship network. At the same time, it can expand diversified knowledge-source channels for the firm [136]. When an organization has a lot of external social capital, transformational leaders can broaden information channels through problem identification, information search, and accessing external knowledge and resources. This helps the organization improve its capabilities for organizational innovation [127].

5.1. Theoretical Significance

First, this study reveals that transformational leadership is an essential factor that effectively contributes to ESG performance, which is a valuable addition to previous research. Contemporary leadership approaches, in terms of their uniqueness and importance, have been increasingly studied by both academics and practitioners. Prior research on specific contemporary theories of transformational leadership has generally been on the implementation of the theory and its relationship with organizational citizenship behavior or firm performance [137–139]. This study is considered a significant contributor to the present literature, since it provides a perspective on the effects of leadership theories on ESG performance, in an area of scarce empirical research [140].

Second, this study enriches knowledge of the antecedents of ESG performance in SMEs. Most existing studies examined ESG performance as an influencing factor and explored its effects on corporate financing costs and financial performance; this research focus highlights the importance of corporate ESG performance, but there is no focus on ESG performance as a dependent variable. However, this paper explores corporate ESG performance as a dependent variable and looks into ways to improve ESG management. In addition, most studies only focus on one aspect of environmental performance, corporate social responsibility, or corporate governance, rarely combining these three aspects to examine corporate performance. By doing so, this study provides new perspectives and valuable directions.

Third, this study explores the internal mechanisms of transformational leadership and ESG performance in SMEs, thus opening the black box concerning the connections between transformational leadership and ESG performance in SMEs. To more fully reveal how transformational leadership affects ESG performance in SMEs, this paper provides a new perspective and theoretical model for the study of corporate ESG performance, constructs a model of leadership traits–organizational mechanisms–corporate ESG performance, clarifies the role of transformational leadership in influencing corporate ESG performance, remedies the shortcomings of previous studies, and provides a new reference for enhancing corporate strategic management theory. In short, it provides a new referential basis for deepening the theory of corporate strategic management.

Finally, this study introduces external social capital into the model, explores the impact and conditions of transformational leadership on organizational innovation, and establishes a mediating-effect model that is moderated to reveal the positive interaction effects of transformational leadership and external social capital on corporate ESG performance, thus changing the single model used in previous studies on factors affecting organizational innovation.

5.2. Practical Significance

First, businesses should prioritize the development of transformational leadership characteristics. For businesses to gain a competitive advantage, it is essential to identify and cultivate exceptional transformational leaders or even leadership teams [141]. Organizations can properly cultivate transformational leadership styles. For instance, a company can establish a leadership style analysis group, develop a transformational leadership training and evaluation system based on the dimensions of transformational leadership and the company's characteristics, and conduct regular audits and training on the transformational leadership styles of its leaders. According to the evaluation results, the leader can be provided with suggestions for improving his or her leadership style.

Second, organizational enterprise innovation should be strengthened. Organizational innovation is a key measure for enterprises to enhance their competitive advantages [142]. Enterprises should optimize workflow, adjust staff tasks and functions, revise management rules and regulations, and explore more efficient management methods and novel management techniques to better adapt to external environmental changes, enhance enterprise resilience, and promote enterprise development through organizational innovation [143]. In addition, managers should establish innovative work models for their employees; provide them with intellectual stimulation, inspirational motivation, and personalized care; help them establish high-level innovation goals; develop innovative ways of thinking; and enrich their innovation skills [144].

Third, businesses should consider ESG performance. When formulating strategies and implementing decisions, enterprises should consider their development and stakeholder demands, comprehensively analyze the impact on society and the environment, and maximize the total value [145]. By bolstering environmental responsibility and ethics, businesses integrate environmentally responsible behavior and executive ethical commitment with corporate strategy, enhancing their competitive advantage [146]. Responsible management can be practiced in numerous facets of R&D, design, manufacturing, and product sales [147]. At the same time, enterprises should integrate the practice of social responsibility into supply chain management, systematically manage the suppliers' and partners' compliance, safety, environmental protection, and operation transparency and realize the joint fulfillment of corporate social responsibility. In addition, enterprises should strengthen their daily information disclosure efforts and maintain immediate communication with various stakeholders to gain the community's understanding and support through extensive use of traditional and new media.

Fourth, firms should focus on establishing social capital and strengthening the cultivation and maintenance of external social capital. Firstly, in terms of the relationship network of market competition, firms should establish a positive corporate image, strengthen their communication and cooperation channels with other enterprises, and learn advanced management modes and service concepts to build a stable relationship network [148]. Secondly, businesses should focus on and maintain their relationship networks with governments, strengthen the cooperation between government and enterprises by building a good relationship with the government, broaden information channels, and obtain the heterogeneous resources needed for the development and growth of enterprises.

5.3. Prospects and Limitations

Although this study has made progress in terms of its theoretical and practical implications, it still contains shortcomings that can be addressed in future research. First, in this

paper, only firm type, firm size, years in business, and firm industry are selected as control variables; other control variables, such as the market value of equity, earnings per share, and return on asset may be selected in future research. Second, this paper only selects organizational innovation as the mediating variable between transformational leadership and ESG performance; in the future, other mediating variables, such as technological innovation, may be selected to investigate the mechanism underlying the relationship between transformational leadership and ESG performance. Third, this paper conducts empirical research using only a questionnaire and no qualitative research. Enterprises can be used as case studies for qualitative research in the future. In addition, future studies could include secondary data to make the study more rigorous and comprehensive. Fourth, this study only examines the impact of transformational leadership on corporate ESG performance, and it does not examine it from other leadership perspectives. In the future, the impact of different leadership styles on corporate ESG performance, such as ethical leadership and responsible leadership, can be studied.

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Appendix A

Table A1. Study's construct and items.

Construct	Items	Statement
Transformational leadership (TL)	TL1	The leader shows determination in accomplishing goals.
	TL2	The leader is respected by all for the way they handle things.
	TL3	The leader does not care about personal gain or loss for the sake of the team or collective good.
	TL4	The leader demonstrates competent, driven and confident traits.
	TL5	The leader is very focused on the interests of the organization.
	TL6	The leader expresses expectations for high performance to their subordinates.
	TL7	The leader portrays an inspiring future to everyone.
	TL8	The leader conveys a sense of mission to everyone.
Organizational innovation (OL)	OL1	The company introduced a new management system.
	OL2	The company introduces new practices of organizational improvement (process reengineering, quality management, etc.).
	OL3	The company introduces new management processes (new work manual, new recruitment and assessment system).
	OL4	The company introduces a new approach to planning and budgeting.
	OL5	The company actively implements new policies to improve organizational performance.
External social capital (sc)	SC1	The company maintains good relationships with government departments.
	SC2	The company can get support and resources from the government.
	SC3	The company establishes good relationships with its partners.
	SC4	The company regularly conducts technical exchanges with its partners.
	SC5	The company establishes good relationships with financial institutions.
	SC6	The company maintains good cooperative relationships with its suppliers.

Table A1. Cont.

Construct	Items	Statement
Environmental performance (EP)	EP1	The company takes the initiative to use low-carbon energy-saving products and equipment.
	EP2	The company uses clean energy and fuels.
	EP3	The company has a comprehensive energy-saving system and measures for energy conservation, comprehensive recycling of resources, green office, etc., and has implemented them effectively.
	EP4	The company has built a perfect environmental protection organization management system and environmental management system.
	EP5	The company reduces environmentally harmful behaviors.
	EP6	The company actively participates in various social environmental causes and environmental protection acts such as ecological protection.
Corporate social responsibility (CSR)	CSR1	The company encourages employees to develop their skills and careers.
	CSR2	The company pays attention to the needs of employees.
	CSR3	The company attaches great importance to the training of employees.
	CSR4	The company values the welfare of its employees.
	CSR5	The company focuses on the improvement of employees' production and operation conditions.
	CSR6	The company supports the assistance of community personnel (vulnerable groups).
	CSR7	The company's operations will not have a negative impact on the community.
	CSR8	The Company participates in various charitable activities.
	CSR9	The company participates in long-term social welfare activities.
	CSR10	The company attaches great importance to customer satisfaction.
	CSR11	The company provides customers with comprehensive and accurate information about the products it sells.
	CSR12	The company respects the protection of consumer rights.
Corporate governance (CG)	CG1	The company has a good information disclosure mechanism.
	CG2	The company fully considers the interests of shareholders and other stakeholders.
	CG3	The company has a good anti-risk response mechanism.
	CG4	The company has good business ethics.
	CG5	The company has a good anti-bribery mechanism to eliminate corruption.
	CG6	The company operates legally and compliantly.

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