The Impact of Corporate ESG Performance on Employee Employment: An Empirical Study Based on the Two-way Fixed Effects Model

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Abstract. Amid China's coordinated advancement of high-quality and sustainable development, how environmental, social, and governance (ESG) performance influences corporate labor hiring decisions has become a key topic in employment stability research. Using panel data of A-share listed firms from 2009 to 2024, this study employs a two-way fixed-effects model to systematically examine the impact of ESG performance on the number employees (EN) and its heterogeneous characteristics. Findings reveal that ESG performance significantly promotes employment growth, and this conclusion remains robust after controlling for firm-specific and time-specific fixed effects. This confirms that ESG practices positively drive corporate employment scale by alleviating financing constraints, enhancing production efficiency, and increasing talent attractiveness. Accordingly, this paper proposes improving ESG disclosure and incentive systems that take employment effects into account, establishing linkage mechanisms between ESG, green finance, and industry access, and strengthening market-based incentives for ESG employer branding to build a long-term mechanism fostering a virtuous cycle between sustainable governance and employment stability.

Keywords: ESG Performance, Number of employees, Two-way Fixed Effects Model; Human Resource.

1 Introduction

Employment is a fundamental aspect of people's livelihoods and serves as a crucial foundation for economic development, social stability, and common prosperity. As China's economy transitions to a phase of high-quality development, "stabilizing employment" has become a key bottom-line objective of macroeconomic regulation. The report of the 20th National Congress of the Communist Party of China explicitly states: "Implement an employment-first strategy, strengthen employment-first policies, and improve the public employment service system." However, due to multiple factors such as sluggish global economic recovery, industrial restructuring, and technological trans-

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formation, China's job market still faces significant structural challenges, and employment pressures for key groups persist. Against this backdrop, identifying the key factors influencing corporate employment levels holds significant practical importance for improving long-term mechanisms to stabilize employment and promoting high-quality, full employment.

Enterprises are the primary micro-level entities for employment absorption, and the number of employees (EN) directly reflects a company's actual labor practices in production and operations, resource allocation, and adjustments to development expectations. From the perspective of corporate decision-making logic, the scale of employment is not only influenced by factors such as market demand, operational performance, and capital constraints but is also closely related to corporate governance capabilities, strategic orientation, and stakeholder relations. As China's economic development model accelerates its transition toward green, low-carbon, and high-quality growth, the mechanisms determining corporate labor demand are undergoing profound changes. Therefore, it is necessary to re-examine the key factors influencing changes in employee headcount from the perspective of sustainable corporate governance.

In recent years, Environmental, Social, and Governance (ESG) performance has become a key dimension for measuring a company's comprehensive value. In May 2022, the State-owned Assets Supervision and Administration Commission (SASAC) issued the "Work Plan for Improving the Quality of Listed Companies Controlled by Central State-Owned Enterprises," explicitly proposing to "explore the establishment and improvement of an ESG system"; In April 2024, the three major stock exchanges—Shanghai, Shenzhen, and Beijing—formally released "Self-Regulatory Guidance No. 14 for Listed Companies—Sustainability Reports (Trial)," marking a new phase of standardization in China's ESG disclosure. These institutional developments indicate that ESG has gradually shifted from voluntary corporate practices to institutionalized advancement. As a key manifestation of sustainable corporate governance, ESG not only relates to the efficiency of corporate resource allocation and long-term value creation but may also influence corporate labor and employment decisions through channels such as financing constraints, production efficiency, and talent attraction, thereby affecting the EN. Therefore, against the backdrop of the coordinated advancement of stable employment and sustainable development, systematically examining the impact of ESG levels on the number of corporate employees holds significant theoretical value and practical significance.

ESG practices profoundly influence corporate hiring decisions by affecting corporate financing capabilities, production efficiency, and talent attraction, thereby exerting a significant impact on EN. However, what is the mechanism through which ESG performance affects EN? Does this impact vary depending on industry characteristics or the level of competition? Through which channels do ESG practices influence hiring decisions? Overall, existing research has not adequately addressed these questions. Against the dual backdrop of China's vigorous promotion of high-quality employment and sustainable development, clarifying the intrinsic link between ESG performance and employment levels holds significant policy implications for refining the long-term mechanisms for "stabilizing employment" and evaluating the employment effects of ESG policies. Consequently, this paper comprehensively assesses the impact of ESG

levels on corporate employment using a two-way fixed-effects model based on panel data from listed companies.

The marginal contributions of this study is systematically analyzes how ESG performance influences corporate labor hiring decisions, thereby expanding the research frontier of ESG's economic consequences and broadening the scope of studies on factors affecting corporate employment levels. Consequently, the findings provide important policy implications for the government to optimize the design of ESG regulatory policies and formulate tailored employment promotion strategies, thereby better supporting enterprises in stabilizing employment and advancing the achievement of the "employment stability" objective.

2 Literature Review

The economic implications of ESG performance have been a hot topic of research in recent years. Most scholars believe that strong ESG performance helps improve corporate operations and enhance sustainability capabilities. Li Jinglin et al. argue that ESG performance can significantly boost corporate performance and promote innovation[1]; Song Cheng and Li Jigang contend that strong ESG performance can alleviate financing constraints and reduce corporate risk[2]. However, some scholars hold differing views. Li Sihui and Zheng Sulan suggest that ESG investments may generate a certain "cost effect," diverting corporate operational resources in the short term[3]; Shangguan Zeming and Zhang Yuanyuan point out that, in the absence of adequate external regulation or sufficient information disclosure, ESG practices may even induce "greenwashing" behavior[4]. Furthermore, Wu Yongxia and Shan Fei found that fulfilling ESG responsibilities can enhance corporate value by promoting green innovation, and this effect is more pronounced in non-state-owned enterprises and in central and eastern regions[5].

Existing literature has also preliminarily confirmed the positive impact of ESG levels on corporate employment. Mao Qilin and Wang Yueqing found that ESG advantages can significantly increase corporate employment levels, with this effect primarily realized through three channels: expansion of production scale, alleviation of financing constraints, and attraction of labor[6]. Li Jigang and Song Cheng, adopting a dual perspective on employment scale and structure, found that ESG performance not only promotes the hiring of high- and medium-skilled workers but also exerts a certain inhibitory effect on the hiring of low-skilled workers; specifically, the employment absorption effect is more pronounced in state-owned enterprises and large firms, while the employment structure optimization effect is primarily evident in non-state-owned enterprises and large firms[7]. After examining both the willingness to disclose ESG information and performance evaluations, Kim Jiyeon et al. noted that both factors have an employment expansion effect, with the probability of default playing a mediating role in this process[8]. Wu Shan et al. found that the positive impact of ESG levels on employment is primarily driven by the social responsibility dimension, and that digital transformation can further amplify this effect[9]. At the same time, some studies have examined the relationship between ESG levels and employment from a reverse perspective. Tian Yajuan pointed out that ESG rating divergence can suppress corporate

labor hiring by increasing financing constraints and operational risks and damaging corporate reputation[10]. Zhang Zhenan et al., however, found that ESG performance helps improve the efficiency of corporate labor investment, a role primarily achieved by alleviating financing constraints and enhancing employee innovation[11].

In summary, the impact of ESG levels on corporate employment has garnered significant attention in the academic community. Overall, while existing research is relatively extensive, there remains room for further exploration. Clarifying the transmission mechanisms through which ESG affects firm employment levels is particularly important, yet systematic analysis of these pathways in existing research remains inadequate. In light of this, this paper employs a two-way fixed-effects model based on panel data of listed companies to conduct an in-depth examination of the aforementioned issues.

3 Theoretical Analysis and Research Hypotheses

The impact of ESG performance on a company's workforce size can be achieved through three channels: alleviating financing constraints, improving production efficiency, and enhancing talent attraction. From a financing perspective, companies with higher ESG ratings have greater access to low-cost financing resources such as green loans, social responsibility bonds, and ESG-themed funds; increased capital availability supports companies in expanding their production scale and increasing their demand for labor. From the production perspective, ESG practices drive companies to adopt green technologies and digital management tools, thereby advancing the upgrading of production systems and the optimization of processes. As total factor productivity improves, companies gain the capacity to expand production capacity and will correspondingly increase their workforce. Companies with strong ESG performance are more inclined to view employees as key stakeholders. By improving the work environment, refining training mechanisms, and establishing clear career development paths, they enhance employee engagement, thereby expanding their workforce to support long-term corporate development strategies. From the labor market perspective, companies with outstanding ESG performance cultivate a differentiated employer brand, conveying positive messages to potential job seekers that the company values employee development and offers stable employment prospects. This helps reduce the costs of talent search and matching while expanding the scope of the labor supply accessible to the company. Additionally, ESG practices can stabilize and expand the company's workforce by increasing employee satisfaction and reducing turnover rates.

In summary, ESG performance exerts a significant influence on EN through three channels: alleviating financing constraints, enhancing productivity, and increasing talent attractiveness. Consequently, the following research hypotheses are proposed for testing:

H: A firm's ESG level has a significant positive impact on its EN.

4 Empirical Analysis

4.1 Empirical Model

To empirically test the impact of ESG levels on a firm's EN, drawing on the research by Mao Qilin et al.[12], this study constructs the following two-way fixed-effects model:

$$Labor_{it}=\alpha+\beta ESG_{it}+Year_t+Firm_i+\varepsilon_{it} \quad (1)$$

Where $Labor_{it}$ represents the number of employees at firm i in year t. ESG_{it} represents the ESG performance level of firm i in year t. The β coefficient measures the extent to which ESG levels influence EN at a firm; if β is significantly positive, it indicates that ESG performance promotes an increase in EN. Additionally, $Year_t$ is the time fixed effect, used to control for macroeconomic fluctuations and industry cycle shocks that vary over time; $Firm_i$is the firm-specific fixed effect, used to account for firm-specific heterogeneity that does not change over time; ε_{it} is the random error term.

4.2 Relevant Variables Empirical Model

Dependent Variable Number of employees (Labor): Drawing on the research by Ye Yongwei et al.[13], this study uses the natural logarithm of the number of employees to measure firm employment. This indicator provides a relatively direct reflection of the absolute scale of a firm's labor force.

Core Explanatory Variable Corporate ESG performance (ESG) is measured using the annual composite score from the Huazheng ESG rating system. This score systematically evaluates a firm's level of sustainable development across three dimensions—environmental, social, and governance—with a higher score indicating superior ESG performance.

Data Sources Given the limitations of ESG rating data and employee employment information, this study selected companies listed from 2009 to 2024 as the research sample. Employee employment data was sourced from the CSMAR database. Huazheng ESG data was obtained from the Wind Financial Information Terminal, while all other firm-level financial data was sourced from the CSMAR database. Table 1 presents the descriptive statistics for the main variables.

Table 1. Descriptive Statistics.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	N	mean	sd	min	p50	max
Labor	39,925	7.6149	1.2307	4.1589	7.5099	11.1625
esg	39,058	73.6451	5.2058	36.6200	73.7500	100.0000

5 Analysis of Benchmark Results

5.1 Benchmark Regression Results

The baseline estimates of the impact of ESG performance on firm employment are presented in Table 2. As shown in the three models in Table 2, the coefficients for ESG are all significantly positive. This indicates that ESG performance effectively promotes an increase in firm employment, confirming research hypothesis H.

Table 2. Baseline Regression Results.

	(1)	(2)	(3)
	Labor	Labor	Labor
esg	0.0455***	0.0072***	0.0085***
	(36.2544)	(12.2309)	(15.2695)
_cons	4.2787***	7.0992***	7.0050***
	(46.5251)	(163.3246)	(170.8559)
Individual fixed effects	No	Yes	Yes
Time-fixed effect	No	No	No
N	38952	38860	38860
r2	0.0367	0.9018	0.9169

t statistics in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

6 Conclusions and Policy Recommendations

Based on panel data from A-share listed companies from 2009 to 2024, this study employs a two-way fixed-effects model to comprehensively assess the impact of ESG performance on firm employment levels. The results indicate that firms' ESG performance significantly increases employment levels, and this conclusion holds even after controlling for firm-specific and time-specific fixed effects. This study has important policy implications: Efforts should be accelerated to improve the ESG disclosure and evaluation system, incorporating contributions to employment as a key dimension of ESG governance. Regulatory authorities should further refine ESG disclosure guidelines for listed companies, encouraging firms to proactively disclose key information in their ESG reports—such as employee rights protection, investments in vocational training, and employment generation outcomes—to guide enterprises in internalizing employment stability as a core component of their ESG practices and fully leveraging the positive spillover effects of ESG performance on the labor market.

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