

# A Study of the Impact of Executives' Equity Incentives on Corporate ESG Performance

Zijun Song\*

Business School, Xi'an International Studies University, Xi'an, 710128, China

\*Corresponding author

**Abstract:** ESG is a significant standard for the green transformation of corporations in the new era, and it is also an important helper for guiding green investment. Taking the data of A-share listed companies from 2010 to 2019 as a sample, the study explores the impact and mechanism of executive equity incentives on corporate ESG performance. It is observed that executive equity incentives play a significant role in promoting corporate ESG performance. Through the test of the mechanism of action, it is found that executive equity incentives improve corporate ESG performance by improving corporate innovation efficiency and alleviating financing constraints. In the heterogeneity analysis, it is found that corporate ESG enhancement is more significant in the samples of firms that are not heavy polluters, non-state-owned firms, and executives with green backgrounds. The findings provide richer suggestions for internal and external enterprises to achieve green and sustainable development of corporate economy.

**Keywords:** ESG, Equity Incentives, Innovation Efficiency, Financing Constraints

## 1. Introduction

The ESG thought used to be first proposed in 2004 in the *Who Cares Wins* report issued by means of the United Nations Global Compact (UNEPFI). ESG measures the comprehensive performance of businesses in the three aspects of environment, social responsibility and corporate governance, and is an extension and development of the traditional investment concept based on the indicators of corporate performance and social responsibility. ESG evaluation system provides an operable sustainable development assessment tool, which can give full play to the role of the capital market in ecological, green and low-carbon development. At the same time, the development of enterprises should consider the quality and efficiency of the environment, society and corporate governance, and the quality and efficiency of growth focusing on sustainable development has become the "main theme" of socio-economic development. However, because companies investing in ESG practices will seize limited resources in the short term, resulting in poor short-term business performance, executives tend to avoid ESG investments. Because executives' salaries and allowances are generally linked to short-term company performance, in order to maximize their personal interests, executives are more likely to continue "destructive" production and operation than ESG practices that have long-term investment value. This behavior runs counter to the vision of high-quality development that is strongly promoted in various countries.

Along with the rise and application of ESG, scholars have conducted extensive theoretical and empirical practices around it. Relevant studies on corporate ESG performance mechanisms have demonstrated that good corporate ESG performance enhances financial performance evaluated through accounting as well as market based measures ( Dalal, K. K., and Thaker, N. 2019)<sup>[1]</sup>. The ESG performance of an enterprise also affects the stakeholder relations, production operations and internal governance of the firm, and bettering the ESG performance, the higher the returns the firm receives (Ge and Huang, 2016)<sup>[2]</sup>. At the same time, despite the side effects of ESG that go against the theory of shareholder wealth maximization, ESG is still very cost-effective and affects all dimensions of the firm (Verheyden T et al., 2016; Amel-Zadeh A and Serafeim G, 2018)<sup>[3-4]</sup>, and is conducive to promoting corporate innovation and stabilizing the firm's stock price (Liu and Zhang, 2023)<sup>[5]</sup>. Moreover, based on signaling theory, it can alleviate problems such as financing constraints (Yang, 2021)<sup>[6]</sup>.

Equity incentives and ESG are very important for enterprise development. What is more, it is even more important to link the two to explore the relationship between them. Recent research on executive equity incentives mainly focuses on the study of the economic efficiency of the company, and less on the green and sustainable development of firms; the main research on executive equity incentives focuses on

the ESG's dimensions. Then, whether synthesizing three dimensions as ESG, can executive equity incentives provide corporate ESG performance or not, is the key to realize the green sustainable improvement of firms, which is also the focus of this paper.

With reference to domestic and international research methods, this paper intends to explore the relationship between executive equity incentives and firms' ESG performance, and at the same time explore the transmission mechanism of innovation efficiency and financing constraints in it. The major contributions of this paper are as follows. What comes first is that it shifts equity incentives from focusing on the firm performance level to the ESG level, which enriches and supplements the literature on executive equity incentives and firms' ESG performance. Secondly, there are fewer studies in the current literature on the affect of executive equity incentives on firms' ESG, and this paper no longer only expands the lookup perspective of ESG, but also helps the discovery of new factors contributing to the firms' ESG performance, and further investigates the mediating transmission mechanisms of innovation efficiency and financing constraints. Factors and further explore the mediating transmission mechanism of innovation efficiency and financing constraints; and finally, by analyzing the influence mechanism, role path and heterogeneity of executive equity incentives and corporate ESG performance, this paper provides richer suggestions for enterprises, market investors and the government.

The overall structure of the study takes the form of six chapters. The first section provides the background that supports the arguments put forward in this research. The second part puts forward the vision hypothesis. And next, the paper describe the data sample and the empirical model. Then in the fourth part, the whole process of empirical analysis and results are shown and discussed. The last two sections presents the conclusions and suggestions respectively.

## 2. Theoretical analysis and hypothesis formulation

In the principal-agent theory, the executives act as agents of the enterprise, when the enterprise provides equity incentives to the executives, so that they can become the owner of part of the enterprise's residual value rights in the capacity of shareholders, which can not only reduce the agency cost of the enterprise, but also strengthen the executives' sense of belonging and loyalty in the enterprise. This is due to the fact that the essence of equity incentives is to make the pursuit of the objectives of the executives in the enterprise and the shareholders converge, so that the executives will more emphasis on the long-term interests of the enterprise and social reputation, and to promote the enterprise's green sustainable development, so as to increase the performance of the enterprise's ESG.

Accordingly, Hypothesis 1: Executive equity incentives improve enterprise ESG performance.

Executive equity incentives, as one of the important means to promote corporate development, affect corporate ESG performance in two main ways.

The first avenue is corporate innovation efficiency. Enterprises promote corporate R&D and innovation through executive equity incentives to improve innovation efficiency, thus improving corporate ESG performance. The higher the intensity of equity incentives, the more enterprises are willing to invest more resources in R&D and innovation, which further promotes the willingness of R&D and innovation, also mobilizes the enthusiasm of executives, so that the executives will be on the same interest front with shareholders (Miller et al., 2002)<sup>[7]</sup>. In addition, an empirical study on Chinese firms found that executive equity incentives could noticeably promote the enhancement of corporate innovation efficiency (Zhu and Zhou, 2016)<sup>[8]</sup>. Therefore, executive equity incentives are able to improve firm innovation efficiency.

Enterprise R & D innovation is associated to the future development of the enterprise's prosperity, the enterprise operation and production mode to have a leading effect at the same time, the enterprise R & D innovation concept of transmission and enterprise products a change in the past high energy consumption and high pollution image, will subconsciously affect the social and regional environment. Based on scholars' research on natural resource-based theories, it is found that the environmental performance of enterprises is further improved through energy and carbon emissions as the path of R&D and innovation investment (Samsul et al., 2018)<sup>[9]</sup>. The company's increased investment in green innovation makes the enterprise operation and production mode green, forming a sustainable cycle of processes, promoting the formation of the enterprise green production mode, but also promoting the enhancement of the firm's sustainable development ability. Besides, a good image of green development in society, attracting capital, and promoting the construction of society. Companies with high R&D investment are more capable of collecting and screening existing information, and the integration of

knowledge and systematization within the enterprise is smoother, so they can better integrate and utilize existing resources to achieve better ESG performance (Cheng and Liu, 2021)<sup>[10]</sup>.

Accordingly, Hypothesis 2 is proposed: executive equity incentives can improve firms' ESG performance by increasing firms' innovation efficiency.

The second route is financing constraints. Firms mitigate the degree of corporate financing constraints through executive equity incentives, which in turn improves enterprise ESG performance. The implementation of executive equity incentive programs not only leads to a decrease in corporate agency costs, but also helps to alleviate the degree of company financing constraints and the negative effects caused by information asymmetry (A.S R., 1977; Gong and Li, 2013)<sup>[11]</sup>. The implementation of executive equity incentive plan helps to unify the objectives between managers and owners of the company, reduce agency costs, while reducing the chances of negative role events occurring due to agency problems, improve the space of corporate financing, and provide a certain guarantee for the flexibility of corporate funding, i.e., the degree of corporate financing constraints become smaller (Huang and Tang, 2020)<sup>[12]</sup>. Therefore, executive equity incentives can alleviate corporate financing constraints.

The company by giving equity incentives to the creators of the company's value, such as research and development employees with strong knowledge expertise and managers with excellent professional skills, etc., so that they themselves have a strong bargaining power, access to the company's allocation of more residual profits, to a certain extent, interpretation of the enterprise income pooling allocation to the enterprise's value creators, which allows the company to achieve the maximization of the interests of the company. In addition, equity incentives are complementary to and improve the corporate governance structure, and can have an influence on the credit decisions of financial institutions. Managerial shareholding can convey favorable information about the company's development potential and prospects to investors in the capital market, which is conducive to attracting investors' capital investment. After corporate financing constraints are eased, there can be sufficient funds to invest in corporate ESG development, providing an important guarantee for ESG (Zhang and Deng, 2022)<sup>[13]</sup>. Therefore, executive equity incentives can enhance company ESG overall performance with the aid of assuaging company financing constraints.

Accordingly, Hypothesis 3 is proposed: executive equity incentives can improve corporate ESG performance by alleviating corporate financing constraints.

In summary, executive equity incentives can improve corporate ESG performance by improving corporate innovation efficiency and alleviating corporate financing constraints.

### **3. Data and model**

#### **3.1 Data Sources**

The data source of this paper has two main parts, which are the third-party rating agency CSI ESG rating data and the Cathay Pacific (CSMAR) database. In addition, the paper chosen Chinese A-share listed companies as the lookup sample from 2010 to 2019, and the statistics are screened as follows: the paper selected Chinese A-share listed companies as the research sample from 2010 to 2019, and the data are screened as follows. (1) Financial and insurance industry samples are excluded from the sample due to the special characteristics of the industry; (2) due to the fact that ST, \* ST listed companies may have operational or financial crises and the real reliability of the data is lower, therefore, ST, \* ST and data missing samples are excluded from the sample. ST, \* ST and missing data samples.

#### **3.2 Variable Settings**

##### **(1) Explained variables**

The explained variable is ESG performance. ESG scores refer to the CSI ESG Report, derived from the average of the three sub-ratings of environment, society, and governance, on the basis of which, referring to Wang Bo et al. (2022)<sup>[14]</sup>, the annual ESG performance of listed companies is assigned a value of C as 1, CC as 2, CCC as 3, B as 4, BB as 5, BBB as 6, A as 7, AA as 8, and AAA as 9. The individual assignments were then tested by taking logarithms.

##### **(2) Explanatory variables**

Regarding the measure of the level of equity incentives, drawing on Yu, Qianlong (2019)<sup>[15]</sup>, the

number of shares involved in equity incentives as a percentage of the total share capital is used as a proxy variable for the intensity of equity incentives for executives, denoted as Incen.

(3) Control variables

According to previous related literature (Haifang Wang, 2023)<sup>[16]</sup>, the control variables in this paper are commonly used for listed firms, for example, firm size (Size), operating net cash flow (Cashflow), sales growth rate (Growth), gearing ratio (Lev), percentage of independent directors (Indep), and size of board of directors (Board).

(4) Summary of variables

Summarize the variables above as shown in Table 1.

Table 1: Variable definition

Type	Variables	Abbreviation	Definition
Explained variables	ESG ratings	ESG	Environmental, social and governance composite score
Explanatory variables	Equity Incentive	Incen	Executive equity incentive shares as a percentage of total shares
Explanatory variables	Enterprise scale	Size	The natural log of total assets per year
	Sales growth rate	Growth	Current year sales/Previous year sales-1
	Return on assets	ROA	Net profit/Average total assets
	Operational cash flow	Cashflow	Operating cash flow /Total assets
	Asset-liability ratio	Lev	Liabilities divided by assets
	Independent directors ratio	Indep	Independent directors divided by the number of directors
	Board size	Board	The natural logarithm of the total number of board members
	Tobin's Q ratio	TobinQ	(Market value of outstanding shares + number of non-outstanding shares × net assets per share + book value of liabilities)/Total assets

3.3 Model setup

1) Basic regression model

Based on the preceding theoretical analysis, the function of executive equity incentives played for company ESG performance is established through the following model:

$$ESG_{i,t} = \alpha_0 + \alpha_1 Share_{i,t} + \sum Control_{i,t} + Industry_i + Year_t + \varepsilon_{i,t} \tag{1}$$

Where *i* and *t* denote industry and year respectively,  $ESG_{i,t}$  is ESG score,  $Share_{i,t}$  is the level of equity incentives,  $Control_{i,t}$  represents control variables,  $Industry_i$  controls for industry fixed effects,  $Year_t$  controls for year fixed effects, and  $\varepsilon_{i,t}$  is a random disturbance term.

2) Mechanism analysis - mediated effects modeling

$$Mediator_{i,t,n} = \beta_0 + \beta_1 Share_{i,t} + \sum Control_{i,t} + Industry_i + Year_t + \varepsilon_{i,t} \tag{2}$$

$$ESG_{i,t} = \delta_0 + \delta_1 Share_{i,t} + \delta_2 Mediator_{i,t,n} + \sum Control_{i,t} + Industry_i + Year_t + \varepsilon_{i,t} \tag{3}$$

Where *i* and *t* denote industry and year respectively,  $ESG_{i,t}$  is ESG score,  $Share_{i,t}$  is the level of equity incentives,  $Control_{i,t}$  represents control variables,  $Industry_i$  controls for industry fixed effects,  $Year_t$  controls for year fixed effects, and  $\varepsilon_{i,t}$  is a random disturbance term.

4. Empirical findings

4.1 Descriptive statistics

As shown in Table 2, Among the main variables, the mean value of ESG is 4.275, demonstrating that the average level of fulfillment of corporate ESG responsibilities is low; the minimum value is 1 and the maximum value is 8, demonstrating that there is a massive gap in ESG ratings among different companies. The mean value of executive equity incentives (Incen) is 0.047, demonstrating that the average level of executive equity incentives in different enterprises is low. The minimum value is 0, and the maximum value is 0.641, showing that the level of executive equity incentives in different enterprises is uneven. What is more, some enterprises have not even set up equity incentive policies.

Table 2: Descriptive statistics

Variable	Observation	Mean	Std. Dev	Min	Max
ESG	9086	4.275	1.047	1	8
incen	9086	0.047	0.046	0	0.614
Size	9086	22.217	1.213	19.653	26.238
Growth	9086	0.331	0.74	-0.703	6.951
ROA	9086	0.048	0.066	-0.279	0.206
Cashflow	9086	0.173	0.122	0.009	0.596
Lev	9086	0.396	0.186	0.057	0.95
Indep	9086	0.381	0.055	0.308	0.571
Board	9086	2.209	0.171	1.792	2.773
TobinQ	9086	2.244	1.385	0.847	9.03

4.2 Basic regression

Table 3: Basic regression

	(1)	(2)	(3)	(4)	(5)
	ESG	ESG	ESG	ESG	ESG
incen	0.917***	0.959***	0.838***	0.964***	0.839***
	(0.266)	(0.264)	(0.263)	(0.266)	(0.265)
Size		0.202***	0.371***	0.219***	0.366***
		(0.021)	(0.032)	(0.023)	(0.034)
Growth		-0.022	-0.009	-0.014	0
		(0.018)	(0.018)	(0.018)	(0.018)
ROA		0.045	-0.199	-0.125	-0.305
		(0.195)	(0.199)	(0.197)	(0.2)
Cashflow		0.388***	0.2	0.334***	0.18
		(0.123)	(0.127)	(0.127)	(0.13)
Lev		-0.993***	-1.067***	-0.938***	-1.005***
		(0.124)	(0.123)	(0.126)	(0.125)
Indep		1.828***	1.711***	1.784***	1.675***
		(0.384)	(0.382)	(0.391)	(0.388)
Board		0.244*	0.154	0.153	0.081
		(0.139)	(0.139)	(0.141)	(0.141)
TobinQ		-0.045***	-0.002	-0.041***	0
		(0.01)	(0.011)	(0.01)	(0.011)
cons	4.232***	-1.065*	-4.002***	-1.746	-0.151
	(0.015)	(0.615)	(0.767)	(1.178)	(1.682)
Year	NO	NO	YES	NO	YES
Indusrry	NO	NO	NO	YES	YES
Observations	9086	9086	9086	9086	9086
R-squared	0.002	0.031	0.05	0.069	0.087

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ , same as below.

Table 3 Column (1) is the result without control variables, time and industry, and (2) is the result of adding control variables to (1). Column (3) is the result of controlling for additional year fixed effects from (2). Column (4) is the result of controlling more for industry effects on top of (2). Column (5) is

the result of controlling more for time and industry effects on top of Column (2). In summary, the coefficients of incen from columns (1) to (5) are significant and positive at the 1% level, which indicates that executive equity incentives have a significant positive contribution to corporate ESG performance, and verifies Hypothesis 1: Executive equity incentives can improve corporate ESG performance. The reason may be that the higher the level of executive equity incentives, the more it can improve the sense of belonging and loyalty of executives in the enterprise, so that they emphasize more on the development of long-sightedness interests of the companies and social prestige, and further promote the green and sustainable improvement of the firm, thus improving enterprise ESG performance.

In terms of control variables, combined with Table.3, the coefficient of enterprise size is significant and positive at the 1% level, demonstrating enterprise size has a significant positive contribution to corporate ESG performance. The coefficient of gearing ratio is significant and negative at the 1% level, which indicates enterprise size has a significant negative contribution to corporate ESG performance; the proportion of independent directors is significant and positive at the 1% level. What is more, the proportion of independent directors is significant and positive at the 1% level. The coefficient of asset-liability ratio is significant and negative at the 1% level, which demonstrates company size has a significant negative influence on enterprise ESG performance.

**4.3 Mechanism of action tests**

(1) Mediating role of innovation efficiency

The paper refers to the method of Fang Xianming et al. (2023)<sup>[17]</sup>. It takes the natural logarithm of the sum of the number of patents of invention, utility model and design applied independently by listed companies plus one (Patent) as a measure of corporate innovation efficiency. Table.4 column (1) incen plays a negative and significant role in 5% level for Patent, indicating that executive equity incentives help to enhance corporate innovation efficiency; Column (2) incen plays a positive and significant role in 1% level for ESG, indicating that there is a part of the mediation effect of innovation efficiency, which means that it proves that That is to say, it proves the realization of the path of "executive equity incentives - innovation efficiency - corporate ESG performance", which verifies hypothesis 2: executive equity incentives can improve corporate ESG performance by improving corporate innovation efficiency.

(2) Intermediation of financing constraints

The study by JU et al. (2013)<sup>[18]</sup> argues that the SA index is used to measure firms' financing constraints for the three reasons. What comes first is that, the SA index does not contain financing variables that are characterized by endogeneity. Secondly, the SA index is easy to calculate. Thirdly, the SA index is relatively robust, and the corporate financing constraints classified accordingly are consistent with the results of using the WW index and cash flow sensitivity. In order to avoid endogeneity interference, they construct the SA index relating to only two variables, company size and company age, which do not have strong exogeneity.

$$SA = -0.737Size + 0.043Size^2 - 0.04Age \tag{4}$$

Table 4: Mechanism of action tests

	(1)	(2)	(3)	(4)
	Innovation Efficiency		Financing Constraints	
	Patent	ESG	SA	ESG
incen	0.033** (0.015)	0.801*** (0.263)	-0.009** (0.004)	0.802*** (0.263)
Patent		1.035*** (0.212)		
SA				-3.725*** (0.762)
_cons	-3.202*** (0.044)	-0.665 (1.022)	1.153*** (0.012)	0.344 (1.167)
Control	YES	YES	YES	YES
Year	YES	YES	YES	YES
Industry	YES	YES	YES	YES
N	9074	9074	9066	9066
R <sup>2</sup>	0.842	0.054	0.829	0.054

Table.4 Column (3) incen plays a negative and significant role in SA at the 5% level, which indicates that executive equity incentives alleviate corporate financing constraints; Column (4) incen plays a positive and significant role in ESG at 1% level. It demonstrates that there is a partially mediated effect of financing constraints, i.e., it proves that the path of "executive equity incentives - financing constraints - corporate ESG performance" is realized, and it verifies hypothesis 3. That is to say, it proves the realization of the path of "executive equity incentives-financing constraints-enterprise ESG performance", which verifies the hypothesis 3: executive equity incentives can improve the ESG performance of enterprises by alleviating corporate financing constraints.

#### 4.4 Heterogeneity analysis

According to previous study, this paper further explores whether the nature of a firm's pollution, the nature of its property rights, and the environmental background of its executives affect causal relationship between executive equity incentives and an enterprise's ESG performance.

##### (1) Whether it is a heavily polluting enterprise

In the process of low-carbon transition, heavy polluters face greater abatement costs, and their pressure to fulfill their social duties is excessive and more challenging to fulfill. So the effect of executive equity incentives on the ESG performance enhancement of heavy polluters may be relatively poor. Based on this, this paper refers to the study of LU(2021)<sup>[19]</sup> and divides the sample into heavy polluting firms and non-heavy polluting firms. According to Table.5 column (1) and column (2), it is concluded that the coefficient of the group of heavy polluting firms is insignificant, while the coefficient of the group of non-heavy polluting firms is positive and significant at 1% level. It suggests that the influence of executive equity incentives on the enhancement of firms' ESG performance is mainly manifested in the non-heavy polluting firms, which is in line with the inference. Therefore, the impact of executive equity incentives on company ESG overall performance is greater pronounced in non-heavy polluting corporations than in closely polluting firms.

##### (2) Whether or not it is a state-owned enterprise

The different impacts of executive equity incentives are also constrained by specific institutional backgrounds, market environments and governance structures. Compared with the relatively mature capital market and corporate governance system in western developed countries, there are state-owned and non-state-owned listed companies in China. Different property rights and governance structures imply different types of agency problems, resulting in differences in equity incentive targets and incentive orientations, leading to the complexity of lookup on the impact of equity incentives on corporate ESG performance. Based on the findings, drawing on Wang Bin et al. (2015)<sup>[20]</sup>, SOEs and non-SOEs differentiated in accordance to the nature of equity are SOEs when the nature of property rights is state-owned, and vice versa for non-SOEs. According to Table.5 column (3), it is concluded that executive equity incentives do not appear to be significant on ESG, indicating that in SOEs, equity incentives for executives do not perform significantly on corporate ESG. According to Table.6 column (4), it is derived that executive equity incentives are more sensitive to the ESG overall performance of non-state-owned firms and passes the statistical significance level test of 5%. It shows that executive equity incentives make contributions appreciably to the ESG overall performance of firms when the firms are non-state-owned.

##### (3) Whether corporate executives have an environmental background

According to signaling theory, the appointment of executives with environmental background in listed companies can drive enterprises to increase environmental investment internally and obtain environmental subsidies from external governments, releasing strong signals that enterprises are engaged in environmental protection, which in turn attracts green investors to enter the company. In addition, green investors have a positive affect on the volume and quality of green innovation and ESG performance of enterprises, and also have an enormous effect on the economic overall performance of enterprises, which may cause differentiated equity incentives on the ESG performance of enterprises. Based on this, the sample is divided based on whether corporate executives have an environmental background or not. According to Table.5 column (5) and (6), it is concluded that the coefficient of the explanatory variables in the group of executives with environmental background is positive and significant at 5% level, meanwhile the coefficient of the explanatory variables in the group of executives with no environmental background is insignificant, which suggests that equity incentives for corporate executives with no environmental background do not work on corporate ESG performance. Consistent with the inference, it further suggests that corporate executive equity incentives for executives with

environmental background play a positive and significant role in corporate ESG performance.

Table 5: Heterogeneity analysis

	(1)a	(2)a	a(3)	a(4)	a(5)	a(6)
	Heavily polluting enterprise	Non- heavily polluting enterprise	State- owned enterprise	Non-state- owned enterprises	Executives with an environmental background	Executives without an environmental background
	ESG	ESG	ESG	ESG	ESG	ESG
incen	0.535	0.973***	1.127	0.702**	1.23**	0.436
	(0.649)	(0.288)	(0.729)	(0.288)	(0.557)	(0.32)
cons	-8.739***	-3.275***	-5.773**	-3.943***	-6.115***	-3.437***
	(2.213)	(0.825)	(2.419)	(0.832)	(1.755)	(0.926)
Control	YES	YSE	YES	YES	YES	YSE
Year	YES	YES	YES	YES	YES	YSE
Industry	YES	YES	YES	YES	YES	YSE
N	1455	7631	1600	7486	2244	6345
R-squared	0.077	0.059	0.048	0.056	0.062	0.052

## 5. Conclusions

Chinese A-share listed companies are chosen from 2010 to 2019 as a research sample to discover whether executives' equity incentives can enhance company ESG performance. The empirical results are as follows. (1) Executives' equity incentives can improve corporate ESG performance, suggesting that executives' equity incentives can improve executives' sense of belonging and loyalty in the enterprise, make them emphasize more on developing the long-term interests of the enterprise and social prestige, and further promote the corporate's green development, thus improving the enterprise's ESG performance. (2) Mechanism tests exhibit that equity incentives for executives promote company ESG performance through improving corporate innovation effectivity and alleviating financing constraints. (3) Heterogeneity analysis reveals that the effect of executives' equity incentives on corporate ESG performance is more reported in non-polluting firms, non-state-owned firms, and corporations with executives with environmental background.

## 6. Recommendations

From the inside level, corporations want to emphasize the position of executive equity incentives in bettering company ESG performance. The results of paper show that equity incentives can enhance the motivation of the executive team for the sustainable development of the firm. Therefore, enterprises should firstly improve the accuracy and appropriateness of the design of equity incentives and motivate the management to reduce the short-sightedness of opportunistic behaviors, and formulate strategic decisions for the enterprise which are beneficial to the long-sightedness development of the enterprise. Secondly, in order to alleviate the economic stress on the organisation and broaden the management's investment decision-making perspective, the enterprise should optimize the management's equity incentive plan to convey the positive message of the enterprise's good operating condition to the outside world, reduce the blind pursuit of short-term speculative behavior, and provide incentives for the enterprise to improve its ESG performance. Finally, enterprises should also improve the evaluation indexes of the equity incentive plan, and incorporate ESG performance into the evaluation system of management's equity incentive, so as to draw management's attention to ESG performance.

In terms of the external level of firms, on the one hand, investors should be encouraged to more emphasize on non-financial indicators of firms. Through the empirical research process in this paper, it can display that the added cost that ESG overall performance brings to a firm is the motivation for executive equity incentives to engage in this behavior, so it is crucial to learn to observe executive equity incentives and firms' ESG performance. It is also important to learn to value the firm's innovation efficiency and financing constraints, as well as the nature of the firm's pollution, its property rights' nature, and the environmental background of its executives. Reinforce the importance of non-financial behaviors, and strengthen compliance with ESG behaviors. On the other hand, the government should enhance the ESG demonstration of firms through equity incentives of executive, further improve the reward and punishment standards, and increase the intensity of the regulatory system, so that enterprises



can strengthen the efficiency of innovation. Meanwhile, they are able to formulate relevant policies to promote the alleviation of corporate financing constraints. What comes first is that, the government should improve the evaluation system of ESG performance of enterprises, combining executive equity incentives with ESG performance to provide an important judgment standard for the capital market. Second, the government should guide non-heavily polluting enterprises to formulate reasonable executive equity incentive policies as a way to enhance corporate ESG performance. Third, the government needs to guide non-state-owned enterprises to improve the system of equity incentives of executive so that the ESG performance of firms can be significantly improved. Finally, the government can strengthen promotion of green awareness among executives to help more executives with environmental background.

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