Research on the Present Situation of Equity Incentive and Performance Evaluation

*Zenghai Wu [1, a], Ruige Qi [b, *], Mingyan Zhao [c], Xinke Wu [d], Yinchuan Zhou [e]
*Corresponding author: [a] wuzenghai@snnu.edu.cn

*Corresponding author: [b] 1450223719@qq.com

mail box: [c] 1842345915@qq.com

mail box: [d] 15521176413@qq.com

mail box: [e] 1139333973@qq.com

International Business School, Shaanxi Normal University, Shaanxi

Abstract. As an important means to solve the principal-agent problem, equity incentive has been paid attention by scholars and enterprise owners. This paper takes the domestic and foreign literatures related to equity incentive research as samples, and finds that the foothold of the current equity incentive research mainly lies in the scheme design and performance evaluation. Based on the principal-agent theory, human capital theory, interest convergence hypothesis and trench effect hypothesis, this paper explores how enterprises can reasonably select equity incentive schemes, set reasonable incentive intensity and design appropriate exercise conditions according to their own specific conditions, and how to evaluate equity incentive plans from the perspective of financial performance, innovation performance and human capital performance, so as to provide reference for future equity incentive research.

Keywords: equity incentive; contract characteristics; financial performance; innovation performance human capital performance

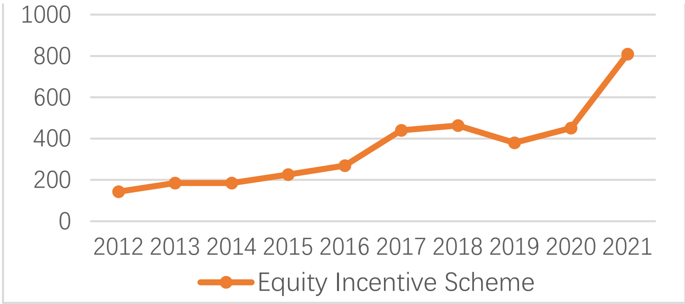
1. Introduction

With the development of modern company system, for the sake of the operating efficiency of the company, the owners of the company are more inclined to hire professional managers as the operators of the company. What follows is the widespread principal-agent problem between the manager and the owner due to the lack of information and supervision. At the same time, in the current production and operation activities of the company, the long-term development of the enterprise depends on the exertion of human capital value. How to motivate and retain talents and maximize the human capital value of the company are also issues that the company needs to pay attention to when making relevant decisions. As a medium and long-term salary incentive system for managers and employees in the daily business activities of enterprises, equity incentive began in the United States in the 1950s. China's equity incentive started in the state-owned enterprises at the end of last century. With the completion of the state shareholding reform, China's capital market has gradually improved. On December 31, 2005, China Securities Regulatory Commission promulgated the administrative measures for equity incentive of listed

BDEIM 2022, December 02-03, Zhengzhou, People's Republic of China

DOI 10.4108/eai.2-12-2022.2332272

companies (for Trial Implementation), which provides policy guidance for listed companies to formulate equity incentive plans. The company law of the People's Republic of China is published in October 2018. This provides a legal guarantee for the implementation of equity incentive plans in our enterprises. According to the manual collation of data from Reis database, A total of 707 a-share companies implemented 769 equity incentive plans in the 2021 year, and equity incentive schemes have become a commonly used incentive method for enterprises. The number of equity incentive plans in the past decade is shown in Figure 1.



Figures 1 Number of equity incentive plans issued in the last decade

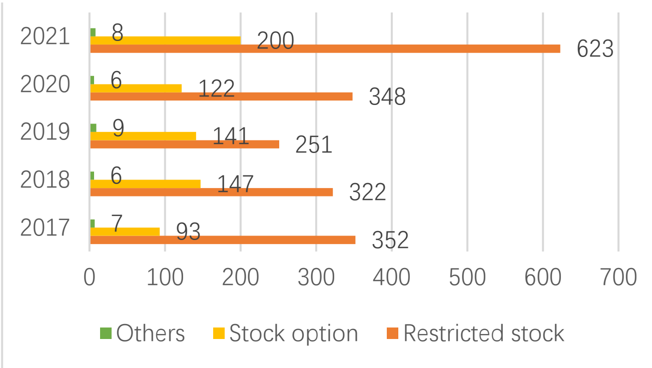
From the perspective of equity incentive design and performance evaluation, this paper analyzes the impact of the scheme type and incentive intensity on the rationality of the scheme design, and explores the relationship between equity incentive and enterprise financial performance, innovation performance and human capital performance, so as to make full play use of equity incentive as a "golden handcuff".

2. Design of Equity Incentive

Equity incentive can be regarded as a kind of contract between enterprise owners, enterprise managers and core employees. The contractual terms of the equity incentive include factors such as the exercise price, performance appraisal criteria, exercise period, waiting period, reserved shares and share grant ratio. According to the optimal contract theory, the optimal incentive contract is to link the manager's salary with the enterprise's performance, and form the benefit consistency between the employees and the shareholders. The purpose of equity incentive is to give managers and core employees the right to claim the Surplus value of the enterprise, and to form a benefit link between the enterprise and the senior managers and employees, so as to improve the performance of the company to the greatest extent. This paper mainly discusses the choice of equity incentive scheme type and incentive intensity, and studies the application of different designs.

2.1 Type of Equity Incentive Scheme

The choice of equity incentive model is an important content of equity incentive plan, which directly affects the implementation effect of equity incentive, and is also the starting point of analyzing the impact of equity incentive on enterprises. According to the use of a-share incentive types in the past 5 years, this paper mainly analyzes and discusses the two schemes of restricted stock and stock option.



Figures 2 Types of equity incentives in the last five years

A stock option is the right granted by a listed company to an incentive recipient to purchase a certain number of shares of the company at an agreed price and conditions for a specified period of time in the future. The holders of stock options only enjoy the benefits, and do not need to bear the risk of potential losses. Yang (2017) found that in high-tech enterprises, stock options can be better to promote enterprise performance.[1] This may be because compared with other enterprises, the market has higher expectations for the future of the stock price of high-tech enterprises, and stock options can bring great economic benefits to the holders; Moreover, due to the high-risk characteristics of high-tech enterprises, the management and core employees of the enterprises may not be willing to spend cash to purchase restricted stocks.

Restricted stock refers to a company that a listed company grants a certain amount of company shares to the incentive object at a discount according to the conditions determined in advance. After the incentive object reaches certain performance conditions, it can sell the stock it has obtained to obtain income. Li Bo (2017) believes that because restricted shares need to be paid in cash when they are granted, and if the performance appraisal indicators cannot meet the standards, they will not be unlocked. Therefore, compared with options, the incentive effect of restricted stock is more direct. [2] Compared with stock option, restricted stock belongs to the incentive mode of equal risk and return, which means that the risk and final benefit of the incentive object are closely related to the enterprise performance, which makes the restricted stock both incentive and punitive. The management and core employees of the enterprise will work hard no matter from the perspective of preserving expenditure or obtaining income. However, in fact, the implementation of restricted stock incentive plan in enterprises with large management power is a kind of benefit transmission and the managements are seeking "welfare" for themselves. The enterprise management can use earnings management and other means to control the enterprise performance and stock price before the start of the incentive plan, thus making the original performance target meaningless.

Some scholars believe that the type of equity incentive scheme depends on the development stage of the enterprise and the purpose of equity incentive. Chen (2021) put forward the idea that there is an adaptive match between the equity incentive mode and the enterprise life cycle. It is believed that enterprises at different stages of development have heterogeneous preference for equity incentive. Enterprises in growth and recession are more inclined to use stock options, and enterprises in mature period are more inclined to use restricted stocks. [3] When the enterprise is in the growth period or the recession period, the operating risk is high. If the enterprise chooses the restricted stock at this time, it will be unable to achieve the expected incentive effect because of the risk-averse psychology of the manager; But for the mature enterprise, the development tends to be stable, the stock price will not appear too big fluctuation, the stock option incentive mode can not bring the high income to the person who is encouraged.

2.2 Equity Incentive Intensity

The intensity of an enterprise's equity incentive refers to the proportion of the share granted by the equity incentive plan to the total share capital of the enterprise. Some scholars believe that the more equity shares granted, the better the enterprise performance. Cheng Guo (2020) concluded that equity incentive has significantly improved the company's performance through the analysis of propensity score matching method. It indicated that the higher the intensity of equity incentive, the more obvious the performance improvement. [4] However, there are some scholars believe that the effect of equity incentive intensity on equity incentive effect is not a simple linear relationship, and the incentive intensity should be kept within a reasonable range. Chen et al. (2016) found that there was an inverted "U" relationship between incentive strength and enterprise performance. When the total equity share granted to incentive objects accounted for 18.6% of the company's total equity, the enterprise performance reached the best. [5] This is because when the incentive intensity is too low, employees can only obtain quantitative low income even if they make the most efforts. The correlation between personal income and enterprise performance is small, and equity incentive cannot play the expected incentive role. At this time, increasing the incentive intensity can promote the improvement of incentive effect; However, when the incentive intensity is too high, the employees, especially the top managers, have higher decision-making power because of their large holdings, and the supervisory ability of the board of directors to the company will be weakened.

There are also scholars who study how to divide the share of equity incentive at the individual level, mainly based on the evaluation of the value of individual human capital to allocate the amount of equity. Yang et al. (2011) introduced the value of human resources into the design method of equity incentive system. The value of human resources entities determines the share of equity that employees should have, which can make the equity distribution of enterprises more scientific and reasonable. [6] The share of equity granted to individuals should match the value of human capital that individuals can provide enterprises with capital to meet the needs of human resources, give the owners of human capital property rights benefits, and better play an incentive role. The value of human capital can be determined by the method of Cobb-Douglas function. Y is the output of the business and can be measured by net profit. K is the material capital investment, mainly the financial capital invested in the production and operation of the enterprise. L is human capital investment. In the empirical study, the logarithm is usually used. MPL stands for marginal output. H is the contribution rate of human capital. On this basis, different human capital weights are designed to determine the value of individual human capital.

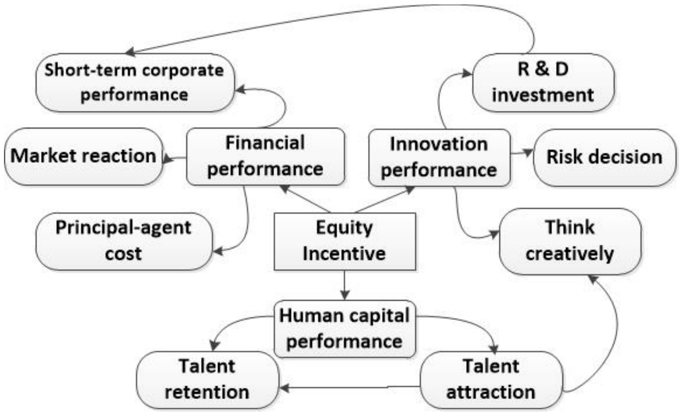
$$Y=AK^{\alpha}L^{\beta} \tag{1}$$

$$LnY=LnA+\alpha LnK+\beta LnL \tag{2}$$

$$H=\frac{L*MPL}{L*MPL+K*MPL}=\frac{\alpha}{\alpha+\beta} \tag{3}$$

3. The Relationship Between Equity Incentive and Enterprise Performance

The relationship between equity incentive and enterprise performance has always been the focus of scholars. As an important basis for evaluating the implementation effect of equity performance, the previous research focus has been on the financial performance of enterprises. However, with the increasing popularity of equity incentive system, more and more scholars began to study from the aspects of enterprise innovation and development, capital structure adjustment, personnel retention and so on. The relationship between equity incentives and firm performance is shown in Figure 3. Common indicators used to measure performance are shown in Table 1.



Figures 3 Equity Incentive and enterprise performance

Table 1 Common evaluation indicators

Type	Commonly used indicators
Financial performance	Return on total assets (ROA)
	Return on equity (ROE)
	Operating net profit margin
	Earnings per share
Innovation performance	Number of patents/new products
	R&D investment intensity
Human capital performance	Number of employees
	Education structure of employees

3.1 Equity incentive and enterprise financial performance

Scholars who study equity incentive and financial performance can be divided into two schools: effective incentive theory and ineffective incentive theory. Scholars who support the incentive efficiency theory believe that the cost of deviating from value maximization will decrease with the rise of managerial ownership. [7] Managerial ownership can make the personal interests of the management and the interests of the enterprise consistent. It is conducive to alleviating the short-termism tendency of managers, enhancing the effectiveness of the internal control of the enterprise, promoting the operation and development of the enterprise and improving the value of the enterprise. Sheng et al. (2016) found that the equity incentive intensity of executives was significantly positively correlated with the speed of capital structure adjustment; And when the capital structure is adjusted downward, the equity incentive will play a greater role in promoting the dynamic adjustment speed of the capital structure.[8] Capital structure decisions are the embodiment of various financial activities of enterprises. Enterprises can send a positive signal to the labor market through equity incentives, so as to reduce the cost of capital structure of enterprises with low financing costs, and thus it has a positive affect on the financial performance of enterprises.

Scholars who support the theory of incentive ineffectiveness often argue that equity incentive has nothing to do with enterprise financial performance from two aspects: the trench effect hypothesis and the "manager defense" hypothesis. The trench effect hypothesis can also be called the management rent-seeking theory. It believes that equity incentive expands the power of managers, enhances the ability of executives to resist external pressure, exacerbates the agency problem, and makes executives have greater motivation to pursue personal interests when using enterprise resources. [9] Equity incentive may become a rent-seeking tool for managers and lead to new agency costs, so it can not promote the improvement of enterprise performance. According to the "manager defense" hypothesis, the increase in the proportion of managers' shares weakens the ability of enterprise owners to supervise the management, makes it easier for them to use the power of managers to implement "tunnel behavior" to consolidate the interests of managers.It deviates from the goal of maximizing the wealth of owners, and is not conducive to the improvement of enterprise performance. [10] Lv Changjiang et al. (2011) believe that when the power of managers is large and the supervision mechanism is not perfect, equity incentive is for the purpose of "welfare", and thus becomes a tool for managers to seek rent. [11] Under the principal-agent system, the daily decision-making of the enterprise is controlled by the management, and due to the information asymmetry between the management and the owner, the management can realize their own interests by means of information disclosure and earnings management, so that the equity incentive loses its incentive role and exacerbates the principal-agent problem.

3.2 Equity incentive and enterprise innovation performance

As a high-risk and uncertainty strategic activity, enterprise innovation usually needs a long period to obtain investment return, which has potential conflict with the risk avoidance tendency of enterprise management. In the actual decision-making, the enterprise manager may have the tendency to reduce the venture capital, including innovation, for the sake of avoiding risks and protecting their own interests. Equity incentive policy can effectively solve this problem. According to the hypothesis of interest convergence effect, the interests of the management will tend to be consistent with the interests of the enterprise owners after the acquisition of equity.

Equity incentive can encourage the executives to consider long-term interests and increase R&D investment when making enterprise decisions. Lui et al (2016) explored the impact of enterprise competitive strategy on innovation and found that compared with traditional salary performance, high-intensity restricted stock incentive can promote managers' innovation enthusiasm. [12] After the implementation of equity incentive, the management's attention will shift from the perspective of short-term financial performance to the core competitiveness of the enterprise. In order to obtain long-term economic benefits, the management will take a positive attitude in the innovation decision-making of the enterprise. It will promote the innovation of the enterprise and be helpful for the long-term development of the enterprise by increasing R&D investment and giving play to the role of personal creative thinking.

Some scholars also analyze the relationship between equity incentive and enterprise innovation from the perspective of trench effect hypothesis and management defense hypothesis. Zhao et al (2020) integrated the benefit convergence effect hypothesis and the trench effect hypothesis in the agency theory, and considered that an appropriate proportion of equity incentive is an effective mechanism for enterprises to promote innovation and development. [13] Li et al (2021) studied the impact of managers on R&D innovation investment of enterprises from the perspective of management defense. The results show that equity incentive negatively regulates the relationship between managers' management defense and enterprises' R&D innovation investment, and is conducive to reducing their over investment behavior. [14] Management's management defense is generally out of the need to protect their own positions and pursue private interests. In order to preserve their own position, the managers may incline to innovation in the enterprise decision-making in order to cater to the innovation orientation of external policies and the capital market, thus resulting in excessive investment behavior. At this time, the interest bond between the management and the owners generated by equity incentive can alleviate the excessive investment behavior of managers.

3.3 Equity incentive and enterprise human capital performance

The human capital performance of an enterprise mainly includes employee attraction, employee retention, and the realization of employee human capital value. The human resources theory believes that equity incentive has the function of attracting and retaining outstanding talents. Outstanding employees stay in the enterprise for a long time in order to obtain the benefits of equity incentive, and at the same time, it sends a positive signal to the labor market, which is beneficial to the gathering of talents to the enterprise. He Jing and Nie Shasha (2022) studied the process of non-family of Midea Group and found that the equity incentive plan enhanced the sense of belonging of the incentive objects, retained more technical and management talents for Midea, and more outstanding people participated in the operation and management of the enterprise. [15] Equity incentive affirms the property right attribute of human capital by sharing the residual value of the enterprise with the employees of the enterprise. At the same time, employees need to consider the actual loss and opportunity cost caused by giving up the exercise of rights when they choose to resign, which increases the resignation cost, reduces the mobility of employees, and is conducive to the stability of the employee structure of the enterprise. And from the perspective of employees' psychology, equity incentive can create a kind of psychological ownership by giving employees the status of shareholders. The higher the psychological ownership generated by employees, they think that they are more closely connected with the organization. Under the influence of the high self-identity and work responsibility consciousness of the organization, they will maintain the organization and improve the performance of the organization from the emotional and behavioral aspects, and their willingness to stay is stronger.

Employees are the carrier and owner of human capital, and their human capital has subjective willingness. Some scholars have found that equity incentive is conducive to the transformation of employees' hidden human capital. Sui Guangjun and Cao Hongtao (2003) believe that equity incentive is the incentive for operators with hidden human capital. Giving restricted stock ownership or stock option to operators is essentially the process of operators' ownership of enterprises and the process of operators' hidden human capital. [16] Although the enterprise has the right to use human capital in the form of employment, the employees will not share all of their recessiveness with the enterprise for the sake of maintaining their status. Moreover, due to the characteristic that human capital "naturally belongs to individuals", the using effect depends on the subjective initiative of employees. The equity incentive encourages employees to link their personal interests with the interests of the enterprise by sharing ownership, and encourages employees to transform the hidden human capital into the explicit enterprise value enhancement, or enhance the overall human capital of the enterprise through knowledge sharing, thus realizing the dominance of enterprise human capital.

4. Summary

The stock right incentive has the positive promotion function to the enterprise performance promotion. The rational design of incentive contract can better play the role of equity incentives. The choice of schemes should be related to the risk characteristics of the industry in which the enterprise is located. Most enterprises prefer the method of restricted stock to reduce the cost of equity incentive, but for some high-risk industry enterprises, this can affect the enthusiasm of risk taking of management; The incentive share should match the contribution of human capital. The impact on enterprise performance should be considered in three aspects: finance, Innovation and human capital. Using reasonable equity incentive scheme to reduce the agency costs of enterprises to play a positive role in their financial performance; It can promote the R&D input of managers and play a creative thinking, so as to improve the performance of enterprise innovation; It can also promote the retention of good employees by sharing Surplus value with employees and increasing the cost of leaving the company. At the same time, through strengthening psychological ownership, it promotes the transformation of recessive employees' human capital to explicit enterprise value.

In the follow-up study, we can consider the division of equity incentive intensity at the individual level, fully consider the property rights characteristics of human capital, and study the valuation of specific human capital, so that the management and employees can get the incentive shares that match with their value, so as to avoid the problem of insufficient and excessive incentives caused by unreasonable allocation of shares and affect the realization of incentive effect; At the same time, as the current selection of equity incentive objects focuses on the research of senior management teams, few articles involve the research of special R&D team equity incentive. With the intensification of market competition, enterprises pay more attention to the cultivation of core competitiveness in order to maintain their market position. As the main body of R&D innovation activities, the reasonable incentive to the R&D team is important for enterprises to improve their innovation ability and competitiveness.

Acknowledgments

This work was supported in part by the Late Support of the National Social Science Foundation of China under Grant 19FGLB059, in part by the National Natural Science Foundation of China under Grant 51678479, and in part by the Shaanxi Normal University through the Innovation Team Project under Grant TD2020007Y.

References

[1] Yang Li, Zhu Yanqiu. Influence of equity incentive mode on equity incentive effect -- Empirical Evidence Based on A-share market [J]. Shandong Social Sciences, 2017 (03): 102-108.

[2] Li Bo. Analysis of stock incentive and employee stock ownership plan of Shenzhen Stock Exchange in 2016 [J]. Securities market guide, 2017 (1 2): 45-50 + 56.

[3] Chen Wenqiang, Wang Chengfang. Research on adaptive matching between equity incentive mode and enterprise life cycle [J]. Accounting research, 2021(06): 76-90.

[4] Cheng Guo. Real earnings management of equity incentive and its incentive effect [J]. Systems engineering, 2020.38 (01): 120-130.

[5] Chen Shengjun, LV Siying, Bai Ge. Research on the influencing factors of the implementation effect of equity incentive scheme of Listed Companies [J]. Journal of Central University of Finance and economics, 2016(12): 121-128.

[6] Yang Fengrui, Dou Houxi, Zheng Qianqian. Design of virtual equity incentive scheme based on human resource value [J]. Business times, 2011(18): 87-88.

[7] Jensenmc;Mecklingwh.Theory of the firm: managerial behavior, agency costs and ownership structure[J].Journal of Financial Economics, 1976, 3(4):305-360.

[8] Sheng Mingquan, Zhang chunqiang, Wang Ye. Executive equity incentive and dynamic adjustment of capital structure [J] Accounting research, 2016 (02): 44-50 + 95.

[9] Benmelech, E; Kandel, E; Veronesi, P.Stock-based compensation and CEO (DIS) incentives [J]. Quarterly Journal of Economics, 2010,125(4):1769-1820.

[10] Fama E.F; Jensen M.C.Separation of ownership and control[J].Journal of law and economics, 1983,26:301-326.

[11] LV Changjiang, Yan Mingzhu, Zheng Huilian, Xu Jingjing. Why do listed companies choose equity incentive plans? [J]. Accounting research, 2011 (01): 68-75 + 96.

[12] Lui,AKH;Ngai,EWT;Lo,CKY.Disruptive information technology innovations and the cost of equity capital: The moderating effect of CEO incentives and institutional pressures [J].INFORMATION & MANAGEMENT,2016,53(3):345-354.

[13] Zhao Shifang, Jiang Xu, Ying Qianwei, Huo Da. Can equity incentive restrain the tendency of executives to seek quick success and instant benefits -- Based on the perspective of enterprise innovation [J]. Nankai management review, 2020,23 (06): 76-87。

[14] Li Bingxiang, Lei Yijin. Does equity incentive affect managers' decisions on R & D innovation investment—— From the perspective of management defense [J]. Science and technology management research, 2021,41 (20): 114-123。

[15] He Jing, Nie Shasha. Research on equity incentive scheme and effect under the background of "de familiarization" -- Taking Midea Group as an example [J].Accounting communication, 2022 (02): 116-119.

[16] Sui Guangjun, Cao Hongtao. Economic analysis of hidden human capital and equity incentive of operators [J]. Exploration of economic problems, 2003 (08): 24-27.