

Party Organization Participation in Governance, Executive On-the-job Spending, and Corporate Innovation Performance

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Abstract. The organic embedding of party organizations in the corporate governance system through two-way entry and cross-appointment is where the institutional strength of Chinese enterprises lies and is a crucial element of corporate governance modernization. To clarify the specific impact of party organization participation in governance on the transformation of technological achievements, the article examines the impact of party organization participation in governance on the innovation level of enterprises and its mechanism of action based on the data of A-share listed companies in China from 2013 to 2021. This study found that: (1) the decision-making of managers with the attributes of "economic man" and "political man" has a positive effect on corporate innovation; (2) the on-the-job consumption of executives inhibits the driving effect of party organization participation in governance on innovation; (3) the effect of party organization participation in governance on innovation level is more evident in low media attention and non-high-tech enterprises. The findings enrich the study of party organization participation in governance and provide a theoretical basis and empirical reference for the transformation of enterprises to achieve high-quality development.

Keywords: Party Organization Participation in Governance; On-the-job Consumption; Innovation Performance.

1. Introduction

Technological innovation is the fundamental driving force and important source of enterprises' high-quality development and an essential guarantee of profit growth. According to the Global Innovation Index 2022 recently released by the World Intellectual Property Organization, China ranks 11th in terms of overall innovation capacity, jumping 23 places from 2012. China's global innovation ranking is improving yearly, but there still needs to be a gap compared with developed countries. In the context of China's deepening economic system reform and accelerating the implementation of an innovation-driven development strategy, the intensity of R&D investment is increasing, and the innovation output situation is receiving more and more attention from scholars' research. The existing literature has studied from the perspectives of system, mechanism, knowledge management and risk management, and found that the participation of party organizations in governance is one of the essential factors of innovation performance.

The participation of party organizations in corporate governance, i.e., members of party organizations enter the board of directors, supervisory board, and management of enterprises through two-way entry and cross-appointment, is different from the corporate governance system in Western countries and is a unique political governance mechanism in China, which is an essential feature of corporate governance in China. The participation of party organizations in governance is politically central in the governance of enterprises, which is oriented to the strategic decisions of enterprises (Shen & Lin, 2020) [1] and plays a crucial role in the development of enterprises, and this political governance feature has been strengthened in recent years. In October 2004, Public essay first proposed that "Party organizations should participate in decision-making on major issues of enterprises, and should adhere to and improve the enterprise leadership system of 'two-way entry and cross-appointment.'" The report of the 19th Party Congress points out that the Party's overall leadership should be adhered to and strengthened, the Party should be managed and governed strictly, and the Party's construction should be strengthened, including political, institutional, and ideological construction. In the context of this policy and system, there are clearer requirements for members of

the party organization to be embedded in the corporate governance system as a "political core." The participation of party organizations in decision-making on corporate affairs has been effective in corporate governance with strong support, playing an active role in curbing the tendency of corporate disclosure irregularities, improving the quality of information disclosure and promoting the improvement of the quality of internal control information, as well as reducing internal income disparity, enhancing corporate environmental performance, and leading to the improvement of private enterprises' governance mechanisms, etc., and of course also influence business decisions, including innovation activities, to lead the high-quality development of enterprises. Members of party organizations will be better aligned with the major strategic deployment of the "innovation-driven development strategy" proposed by the state, promote enterprise innovation decisions by publicizing relevant policies and creating an enterprise innovation culture, and promote enterprises to improve total factor productivity and make up for the shortcomings of crucial core technologies (Agarwal et al. 2017) [2], increase innovation output, and win the first opportunity with independent innovation thus occupying the leading position in the industry. In this context, the impact of party organization participation in governance on corporate innovation performance has received increasing attention and has become an essential topic of academic research.

Since embedding party organizations is already a policy requirement for corporate governance systems, can party organization participation in governance promote corporate innovation performance? Can party organizations affect firm innovation performance by discouraging executive on-the-job spending? Is there heterogeneity in the impact of the degree of external media attention and whether firms use subject technology on corporate innovation? Based on the above questions using the data of listed companies in China from 2013-2021 to examine the impact of party organization embedding on corporate innovation performance and the transmission mechanism to provide practical lessons for promoting corporate supply-side structural reform and high-quality development.

The marginal contributions of this paper are: (1) Unlike the existing literature on the research perspectives of corporate internal control and disclosure information quality, etc., this essay conducts a theoretical dissection and empirical test of the effectiveness of the party group's participation in governance from the perspective of its impact on corporate innovation performance, and conclude that the party organization's participation in governance promotes corporate innovation output, providing new empirical evidence and interpretative perspectives on this issue that is not clearly established in academia at present. (2) Considering the scarcity of corporate resources for corporate innovation and the inherent characteristics of high risk, long payoff cycle, and uncertainty of returns for innovation activities, corporate managers need to pay more attention to innovation output, while this paper focuses on the impact mechanism of party organization embedding from the perspective of innovation output in detail. (3) Some scholars have pointed out that institutional environment and social responsibility affect party organization participation in governance. And this paper further incorporates executive on-the-job consumption into the analytical framework of party organization participation in governance on corporate innovation performance, which enriches the literature related to the effect of governance under the political system of party organization participation in governance. (4) Heterogeneity analysis reveals that party organization participation in governance significantly affects innovation in non-high-tech firms with closer media attention.

2. Theoretical Analysis and Research Hypothesis

Innovation output is the realization form of innovation input. For enterprise innovation performance, innovation output has a higher status than input. According to the search, there is little literature on output, so this paper focuses on innovation output to study the effectiveness of party organization participation in governance. From the perspective of the motivation of participation in governance, members of party organizations have a "dual identity," and as party members with natural political functions, they are bound to implement the political philosophy and governance of

the ruling Party and actively promote the implementation of the innovation-driven development strategy of the company (Qi, I.D. and Shen, T.Y., 2023); as a member of the management of the company, they are obliged to lead the company to improve its innovation output capacity, break the technological barriers, enhance its core competitiveness to achieve year-on-year revenue growth, and promote the high-quality development of the company (Roh et al., 2021) [3].

From the perspective of participation in the governance path, the "cross-border behavior" of the party organization can enable the enterprise and the Party to have a close connection and access to more information resources (Shen & Lin, 2020) [4], to vigorously publicize the Party's policies promptly, to create an excellent corporate culture that innovation is the first force for development, and with the support of assessment and promotion incentive policies, it can effectively enhance the staff's ability to work and alleviate the problem of insufficient innovation.

From the perspective of the consequences of participation in governance, the high level of innovation output under the established inputs not only reflects the innovation ability of the enterprise, obtains the competitive advantage in the market, and realizes asset preservation and appreciation, but also sends the signal of good development expectation of the enterprise to the outside world, increases the confidence of investors in the financing, and increases the capital supply for the enterprise. Under the result-oriented approach, the party organization will increase its merit to stand out from the "scalar competition," and the innovation output brought by the correct innovation decision is the best way. Based on the above analysis, Hypothesis 1 is proposed.

H1: Party organization participation in governance positively affects corporate innovation performance.

On-the-job spending is a problem of agency costs arising from the firm's separation of ownership and control and the inability to agree on the different interests of the two parties positions, with managers using their rights to capture private gains. This implicit remuneration occupies corporate liquidity, leading to the inability to focus on many innovative activities and distorting the resource allocation of the enterprise. Enterprise managers with party membership be restrained by party discipline and law. They have higher self-discipline, which regulates their possible deviant thoughts, laterally combats the wind of extravagance and wastefulness and opportunistic behaviors pervading the enterprise. It avoids the generation of excessive on-the-job consumption at source, reduces the damage to enterprise value, and creates financial conditions for transforming scientific research results. Therefore, the hypothesis is proposed:

H2: On-the-job consumption negatively moderates the relationship between party organization participation in governance and innovation performance.

3. Study Design

3.1 Data Sources

This paper selects A-share listed enterprises in China's Shanghai and Shenzhen markets from 2013-2021 as the research subjects. In this paper, corporate-level financial and executive positions data are obtained from the CSMAR database. Patent data are obtained from the China Innovation Patent Research Database. Both are processed as follows: (1) Excluding the data of financial and real estate enterprises to reduce the impact of different capital composition and accounting standards between financial and real estate enterprises. (2) Excluding the data of ST enterprises and *ST enterprises with abnormal financial status samples. (3) Excluding samples with abnormal data and those with serious data deficiencies. (4) To avoid the adverse effects of extreme values on the regression analysis, the continuous variables in the model are Winsorized at the 1% and 99% quartiles. The final firm-annual unbalanced panel data set consisting of 23720 observations is obtained.

3.2 Definition and Description of Variables

1. explanatory variable - innovation performance (Patent2)

Referring to existing articles, this paper draws on the approach of Xiaofeng Quan and chooses the indicator of innovation output to measure innovation performance. Innovation output is further calculated based on the total number of corporate patent applications, which are further divided into invention patents representing substantive innovation and utility model patents and design patents representing strategic innovation. Considering the importance of the three types of patents, a subjective weight of 3:2:1 is assigned to them and the natural logarithm of the total number of applications for the three types of patents plus 1 is taken as Patent2. The number of patent applications can, to a certain extent, reflect the importance of innovation development and the strategic decision-making direction of the enterprise's senior management, including members of the party organization. And it can predict the future benefits of the enterprise and send positive signals to the outside world (Shu et al., 2022) [5]. The larger the value of this indicator, the better the innovation output benefit of the enterprise.

Table 1. Definition of variables

Variable type		Variable name	Variable symbol	Variable description
explanatory variable		Innovation performance	Patent2	The total number of invention, utility model and design patent applications plus the natural logarithm of 1. The weights of the three types of patents are taken according to 3:2:1
Explanatory variable		Party organization participation in governance	partyC	Number of overlap between members of party organizations and executives/total number of executives
Reconciling variables		Executive on-the-job spending	lnPerks	Administrative expenses - Total remuneration to directors, officers and supervisors - Provision for bad debts - Provision for the decline in value of inventories - Amortization of intangible assets for the year
Control variables	Financial characteristics	Company size	Size	Natural logarithm of total assets for the year
		Gearing ratio	Lev	Total liabilities at the end of the year/total assets at the end of the year
		Return on net assets	ROA	Net profit / average balance of total assets
		Cashflow ratio	Cashflow	Net cash flow from operating activities/total assets
		The growth rate of operating income	Growth	Operating income for the year / Operating income for the previous year - 1
	Corporate governance	The shareholding ratio of the first largest shareholder	Top1	Number of shares held by the largest shareholder/total shares
		Management shareholding	Mshare	Management shareholding data / total share capital
		Number of directors	Board	Natural logarithm of the number of board members
	Others	Year dummy variables	Year	Dummy variables for the year based on the study interval span
		Industry dummy variables	Industry	Dummy variables are set according to the company's industry

2. Explanatory variable - party organization participation in governance (partyC)

In this paper, we use "two-way entry" to indicate the participation of party organizations in the corporate governance of enterprises, which is denoted as partyC. The meaning of the "two-way entry"

indicator (partyC) is the ratio of the number of members of party organizations to the total number of executives. The greater the value of this indicator, the greater the number of party members at the executive level and the higher the degree of party organization participation in corporate governance.

3. Control variables

In terms of control variables, the following control variables were selected from financial characteristics, corporate governance and others: company size (Size), gearing ratio (Lev), return on net assets (ROA), cashflow ratio (Cashflow), the growth rate of operating income (Growth), the shareholding ratio of the first largest shareholder (Top1), management shareholding (Mshare), number of directors (Board), and also control for year and industry fixed effects.

Detailed descriptions of all the above variables are summarized in Table 1.

3.3 Model Setting

To test H1, model (1) is set:

$$\text{Patent2}_{i,t} = \alpha_0 + \alpha_1 \text{partyC}_{i,t} + \sum_k \gamma_k \text{Control}_{k,i,t} + \text{Year, Industry fixed effects} + \varepsilon_{i,t} \quad (1)$$

If the model (1) holds, the regression coefficient α_1 is significantly positive.

To test H2, model (2) is set:

$$\text{Patent2}_{i,t} = \beta_0 + \beta_1 \text{partyC}_{i,t} + \beta_2 \text{partyC}_{i,t} \times \ln \text{Perks}_{i,t} + \beta_3 \ln \text{Perks}_{i,t} + \sum_k \gamma_k \text{Control}_{k,i,t} + \text{Year, Industry fixed effects} + \varepsilon_{i,t} \quad (2)$$

If the model (2) holds, the regression coefficient β_2 is significantly negative.

Where $\text{Patent2}_{i,t}$ represents firm i's innovation performance in year t, $\text{partyC}_{i,t}$ represents firm i's party organization participation in governance in year t, α_0, β_0 are constant terms, $\alpha_1, \beta_1, \beta_2, \beta_3$ are regression coefficients, $\text{Control}_{k,i,t}$ represents the control variables, γ is the regression coefficient of each control variable, and $\varepsilon_{i,t}$ is the random error term.

4. Empirical Results and Analysis

4.1 Descriptive Statistics

Table 2 below shows the descriptive statistics of the regression sample, which shows that the mean value of innovation level is 3.368, the maximum value is 8.106, and the minimum value is 0.000, indicating that the innovation output level of the sample enterprises needs to be improved and the difference between them is noticeable, and the enterprises still need to take practical actions to promote corporate innovation. The mean value of "two-way entry" of the party organization is 0.056, indicating that 5.6% of the companies have both party organization and senior management, with a maximum value of 0.667 and a minimum value of 0.000. Overall, the median value of the control variables is similar to the mean value, with slight differences and no significant skewed distribution.

Table 2. Descriptive statistics of the variables

variable	N	mean	sd	min	p50	max
Patent2	23720	3.368	1.970	0	3.689	8.106
partyC	23720	0.0560	0.124	0	0	0.667
lnPerks	23720	-3.435	0.770	-8.918	-3.362	-1.547
Size	23720	22.29	1.281	19.52	22.10	26.43
Lev	23720	0.424	0.202	0.0460	0.415	0.925
ROA	23720	0.0390	0.0660	-0.398	0.0380	0.254
Cashflow	23720	0.0480	0.0670	-0.196	0.0470	0.257
Growth	23720	0.174	0.415	-0.668	0.110	4.330
Top1	23720	0.337	0.147	0.0810	0.313	0.755
Mshare	23720	0.136	0.193	0	0.0100	0.708
Board	23720	2.118	0.196	1.609	2.197	2.708

4.2 Analysis of Benchmark Regression Results

Table 3 presents the results of the benchmark regressions of the effects of party organization involvement in governance on firms' innovation levels. Column (1) shows the regression results without adding any control variables, and columns (2) to (3) show the regression results with the addition of year, industry control, and corporate finance and governance level controls in that order. Before adding the control variables, the regression results are significant at 1% confidence level regardless of whether the year and industry are controlled, and after adding the control variables, the regression results are significant at 5% confidence level, and the coefficients are positive. This indicates that the participation of party organizations in enterprise management and operation through "two-way entry" promotes the improvement of innovation output, which is in line with the expected hypothesis of H1.

Table 3. Party organization Participation in governance and innovation performance: benchmark regression results

	Patent2		
	(1)	(2)	(3)
partyC	0.952*** (9.802)	0.570*** (4.436)	0.254** (2.161)
Size			0.600*** (28.662)
Lev			-0.358*** (-3.695)
ROA			0.280 (1.616)
Cashflow			-0.185 (-1.248)
Growth			-0.025 (-1.173)
Top1			-0.039 (-0.284)
Mshare			0.595*** (6.254)
Board			0.074 (0.942)
Year	No	Yes	Yes
Industry	No	Yes	Yes
Constant	3.275*** (117.402)	1.601*** (6.559)	-11.465*** (-22.822)
Observations	23,720	23,720	23,720
Number of stkcd	3,793	3,793	3,793
R-squared	0.005	0.146	0.177

Note: ***, ** and * indicate significant at 1%, 5% and 10% confidence levels, respectively; values in parentheses are t-values (same as in the table below).

4.3 Robustness Tests

In order to ensure the reliability of the above results, the following robustness tests are also conducted in this paper:

(1) Controlling for individual fixed effects. To exclude the effect of non-chronological changes in firms on the differences in characteristics, the tests are conducted controlling for firm-fixed effects on the basis of controlling for year-fixed effects.

(2) Replace the proxies of the explanatory variables. The indicator of innovation performance is replaced with the total number of invention patents, utility model and design patent applications plus the natural logarithm of one (Patent1).

(3) Considering the cumulative effect of party organization participation in governance on firm performance, the explanatory variables with a one-period lag are included in the examination.

The above results are presented in Table 4 below, and the results are consistent with the previous paper.

Table 4. Robustness test results

	Patent2	Patent1	Patent2_1
partyC	0.396***	0.255**	0.205*
	(4.092)	(2.434)	(1.660)
Size	0.543***	0.536***	0.525***
	(26.929)	(28.539)	(23.264)
Lev	-0.403***	-0.250***	-0.433***
	(-5.021)	(-3.017)	(-3.965)
ROA	0.009	0.270*	1.070***
	(0.062)	(1.839)	(5.369)
Cashflow	-0.267**	-0.165	-0.079
	(-2.068)	(-1.320)	(-0.467)
Growth	0.003	-0.022	0.011
	(0.144)	(-1.228)	(0.407)
Top1	0.165	0.007	0.092
	(1.254)	(0.058)	(0.645)
Mshare	0.453***	0.492***	0.515***
	(4.419)	(5.914)	(4.816)
Board	0.095	0.064	0.154*
	(1.355)	(0.935)	(1.809)
Control variable	Control	Control	Control
Year	Yes	Yes	Yes
Industry	No	Yes	Yes
entity	Yes	No	No
Constant	-9.263***	-10.445***	-9.847***
	(-20.980)	(-23.458)	(-17.904)
Observations676	23,720	23,720	19,476
Number of stkcd	3,793	3,793	3,363
R-squared	0.177	0.196	0.139

4.4 Mechanism Test

The regression results of the moderating effect are shown in Table 5, and the coefficients of the interaction term $\ln\text{Perks} \times \text{partyC}$ are all significantly negative at the 5% level, indicating that the executive on-the-job consumption negatively moderates the relationship between party organization participation in governance and innovation performance. And the higher the level of executive on-the-job consumption, the more the positive effect of the party organization on corporate innovation is limited, verifying hypothesis H2.

Table 5. Test results of adjustment effect

	Patent2
partyC	-1.247**
	(-2.523)
lnPerks*partyC	-0.399***
	(-3.048)
lnPerks	0.314***
	(12.803)
Size	0.660***
	(31.231)
Lev	-0.423***
	(-4.404)
ROA	0.114
	(0.647)
Cashflow	-0.183
	(-1.229)
Growth	-0.094***
	(-4.182)
Top1	-0.089
	(-0.664)
Mshare	0.590***
	(6.415)
Board	0.060
	(0.778)
Control variable	Control
Year	Yes
Industry	Yes
Constant	-11.673***
	(-23.727)
Observations	23,720
Number of stkcd	3,793
R-squared	0.181

4.5 Heterogeneity Analysis

1. Heterogeneity analysis based on external environment: media attention

Media attention may, to a certain extent, pressure managers' business decisions and make them choose to reduce innovation activities to avoid the high risk and uncertainty of investment returns and to meet the optimistic expectations of investors in the market. As the media prefers the "sensational effect", once a company makes a significant decision mistake or mismanagement, the media will scramble to report it. The strong public pressure makes the company's management afraid to try innovative breakthroughs in the technology field easily (Wu et al., 2021) [6]. On the other hand, managers who are party members tend to avoid high-risk investments in order to distinguish themselves from the "competition on the scale." Considering the impact on their reputation and promotion, they hinder the innovation model's transformation. Therefore, the positive effect of party organization participation in governance on innovation performance should be reflected in the sample with low media attention.

Media attention is measured by the total number of news items in which the firm appears in the news content, including positive, negative and neutral news. And a higher value indicates a higher degree of external media monitoring and a higher transparency of corporate information. Firms with

media attention below the median were assigned a value of 0, indicating low media attention, and 1 otherwise, for group difference testing. From column (1)(2) of Table 6 of the regression results, it is clear that the coefficient of partyC is significantly positive at the 1% level in the sample with low media attention, while it is not significant at high media attention, as expected.

2. Heterogeneity analysis based on internal environment: whether it is a high-tech enterprise

High-tech enterprises conform to the development of the times and concentrate enterprise resources on technology research and development, which is different from general production enterprises. These companies continue to create the latest science and technology with their intellectual property as their core competency, thus transforming the results to achieve corporate profitability. High-tech industries enjoy policy-leaning preferences and are more likely to receive government subsidies, which increase corporate capital flows and alleviate financing constraints (Zhang, 2022) [7]. Managers are driven by profit maximization, and if innovation efficiency keeps improving, the continuous output of innovation results will inspire executives to invest more resources and not overly worry about the risk of R&D. The transformation of innovation results in high-tech enterprises is affected in terms of policy orientation, internal environment, and management decisions, and the participation of party organizations is part of the promotion, but the role is not apparent. Instead, party members in non-high-tech enterprises are more motivated to promote innovation by guiding employees and adopting incentive policies.

Table 6. Heterogeneity test results

	Media attention		Whether high-tech enterprise	
	(1)	(2)	(3)	(4)
	Low media attention	High media attention	High-tech enterprises	Non-high-tech enterprises
partyC	0.370*** (2.679)	0.099 (0.561)	0.085 (0.535)	0.340** (2.355)
Size	0.603*** (22.922)	0.604*** (22.238)	0.674*** (23.948)	0.626*** (22.879)
Lev	-0.295** (-2.525)	-0.543*** (-3.903)	-0.279** (-2.363)	-0.326** (-2.266)
ROA	0.232 (1.107)	0.328 (1.168)	0.243 (1.110)	0.250 (0.915)
Cashflow	-0.151 (-0.782)	-0.167 (-0.736)	-0.132 (-0.662)	-0.242 (-1.139)
Growth	-0.031 (-0.996)	-0.036 (-1.139)	-0.034 (-1.054)	-0.037 (-1.289)
Top1	0.019 (0.119)	-0.086 (-0.461)	0.177 (1.117)	-0.251 (-1.269)
Mshare	0.608*** (5.921)	0.610*** (4.401)	0.280*** (2.707)	0.532*** (3.056)
Board	0.133 (1.489)	0.068 (0.603)	0.063 (0.657)	0.077 (0.651)
Control	Control	Control	Control	Control
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
Constant	-11.780*** (-19.361)	-11.723*** (-18.890)	-12.524*** (-19.201)	-12.077*** (-19.375)
Observations	13473	10236	11,858	11586
Number of stkcd	3,234	2,709	2,171	2053
R-squared	0.167	0.171	0.184	0.176

This paper divides the enterprises into high-tech enterprises and non-high-tech enterprises for two groups of samples for classification tests. If for high-tech enterprises assigned a value of 1, otherwise 0. From column (3) (4) of Table 6, it can be seen that in high-tech enterprises coefficient is not significant. In non-high-tech enterprises coefficient is significantly positive, the test results verify the above analysis.

5. Conclusion and Implications

This paper empirically examines the impact of party organization involvement in governance on firms' innovation performance and its underlying mechanisms for the period 2013-2021 for A-share listed firms in Shanghai and Shenzhen, China, as a research sample. The main findings are as follows: (1) Party organizations embedded in corporate governance significantly increase firms' innovation output, and this finding still holds after considering a series of robustness tests. (2) Based on the mechanical test of the moderating effect model, the implicit compensation of executives, such as unnecessary entertainment expenses, detracts from the value of the firm and leads to underfunding of innovation activities, which inversely inhibits the effect of party organization involvement in governance on innovation output. (3) The results of heterogeneity analysis show that party organization participation in governance has a significant effect on innovation activities in low media attention and non-high-tech firms, and the opposite effect is not significant.

Based on the above findings, this paper proposes the following insights:

First, further promote the participation of party organizations in corporate decision-making to empower corporate innovation. At present, the country promotes the innovation development strategy and supply-side structural reform. If enterprises want to enjoy the policy dividend, they should actively help the implementation of the innovation development strategy in the enterprises to achieve the win-win situation of implementing the spirit of the Party Central Committee's document and improving the competitiveness of their own industry. Secondly, we should pay more attention to innovation output than innovation input, maximize the benefit of enterprise resources, optimize the innovation mode, and reduce the investment impulse under the correct decision of the party organization leadership while promoting the transformation of technological innovation results. Finally, it is necessary to continuously improve the professionalism and ability of the enterprise employees themselves and motivate them to participate in the enterprise technology research and development, as well as to improve the enthusiasm, initiative and cohesion of the technology team and promote the enterprise to carry out innovative activities.

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