

# Media Attention has been Paid to the Impact on the Innovative Performance of Family Businesses

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## Abstract

**This paper uses the 2013-2019 Shanghai and Shenzhen A-share listed family enterprises as a sample data for research and analysis. Combined with the relevant theories, the corresponding research hypotheses are proposed, and the regression analysis method is used to verify, so as to draw media attention to the innovation performance of family enterprises. The influence and the regulatory role of the family board seat allocation between the two. The results show that the higher the media attention to the enterprise, the lower the innovation performance of the enterprise, mainly in the fact that the media attention will exert external pressure on the enterprise to protect the social emotional wealth and make it reluctant to carry out innovative activities. Further research found that the higher the degree of over-allocation of family board seats, the stronger the inhibition effect of media attention on the innovation performance of family enterprises.**

## Keywords

**Innovation Performance; Media Attention; Family Business.**

## 1. Introduction

At present, China's economy is developing rapidly, as far as China's own national conditions are concerned, it is imperative to create an innovative country if it wants to meet the challenges of the new era, achieve a well-off society in an all-round way, and achieve national rejuvenation. As the main body of China's private economy, family enterprises play an indispensable role in the process of creating an innovative country. However, innovation has the typical characteristics of high invested capital, high risk level and long return cycle, which requires enterprises to have sufficient capital and long-term corporate strategic planning, but unlike other enterprises, in addition to profitable goals, family enterprises also have non-profit goals - to maintain their own social emotional wealth, so they will choose more conservative strategic solutions in the face of innovative activities, that is, try to avoid high-risk innovative activities. And technology research and development have unpredictability and high failure rate, which requires company managers to bear certain failure risks and pressures, and is vulnerable to influence from all aspects.

From the perspective of the external supervision and governance mechanism of enterprises, in the era of all media, in the context of the integration of economy and informatization, media attention stands out as another effective supervision mechanism outside the law, and the media is not only the provider and disseminator of information, but also has a close bilateral influence mechanism between enterprises and the media. The media spontaneously reports on the major events of the enterprise, and the enterprise does market through the media to create its own characteristics and image. As an information intermediary, the media can not only alleviate the degree of information asymmetry in the economy and society, but also further protect the legitimate rights and interests of stakeholders, and have a strong ability to collect, sort out and disseminate information. It can also reduce the cost of collecting information by stakeholders.

such as internal shareholders, external small and medium-sized investors, and the public, so as to quickly obtain more accurate and transparent internal information through multiple channels, reduce the degree of information asymmetry between major shareholders and management, internal and external stakeholders of the company, so that they can truly and directly understand the actual situation of the company, and enhance the internal and external supervision of the enterprise. When the company makes investment decisions, the media can effectively contact the enterprise and the market, reduce the noise and friction of the market, create a more favorable investment environment for the enterprise, improve the investment efficiency of the enterprise, at the same time, the media pays attention to the supervision and exposure of the company's investment activities, and can also cooperate with the internal governance mechanism of the enterprise to provide effective constraints and supervision for the investment decisions of the enterprise. Reduce the self-interested behavior of management using information asymmetry, so that enterprises are forced by the pressure of public opinion to pay attention to the problems reported by the media, timely discover and stop inefficient investment problems, so as to effectively supervise the investment decisions and investment activities of enterprises.

From an internal point of view, family businesses have some of the more significant management characteristics compared to other types of businesses. For example, its control and ownership are mainly controlled by a family or natural person, and the main positions are mostly held by family members, and the power and resource allocation of enterprises are oriented by blood relations. Such a management model is a "double-edged sword", on the one hand, family participation in management can reduce the separation of powers, from and alleviate the problem of agency; but on the other hand, for the protection of family wealth, family members may be more inclined to low-risk decisions, resulting in the family business to stand still. On this basis, the board of directors as the most important decision-making and management institutions, which determine the company's production and operation plan and investment plan, in fact, the allocation of family directors is the core issue of seat allocation on the board of directors, is the focus of corporate governance, but also an important factor affecting the strategic decision-making of enterprise innovation. Therefore, exploring the impact of media attention on the innovation performance of family enterprises under the regulatory effect of the characteristics of the board of directors has a reference effect on the improvement of the innovation performance of family enterprises and how to adjust the negative impact of the external environment on innovation performance.

## 2. Theoretical Analysis and Research Hypothesis

The R&D results are uncertain, and for the purpose of commercial confidentiality, the degree of information asymmetry of R&D projects is also high, which determines that the value of R&D results is easily underestimated, thus making the company's management face greater external market pressure and short-term performance pressure. Judging from the existing research, the media attention to the governance effect of listed companies has shown both positive and negative results.

The positive effects of media attention are mainly embodied in oversight and governance role, Yang Feng et al. (2016) have shown that media attention will have an external governance effect on enterprises through reputation mechanisms and information dissemination mechanisms, and this role can significantly increase enterprises' investment in innovation [1]. Furthermore, Xia Xiaolan et al. (2018) found that when the media reports on the innovations of competitors, it can effectively promote the R&D activities of enterprises, which is due to the positive information about the innovative activities of competitors can produce incentive effects, thereby prompting enterprises to carry out more innovative activities [2].

However, media attention is a Double-edged sword for businesses. On the one hand, media create a good environment for innovation through the supervision effect, in alleviating information asymmetry and supervising enterprises innovation Behavior plays a governance role. However, as far as the current media environment is concerned, in order to gain attention, the media often has biased reports and cannot effectively play a positive role. Media attention can even have a negative impact on companies, based on the following two paths: one is based on the "market pressure hypothesis"[3] [4]. Media coverage will make the business receive more attention from investors, and the patent research and development of enterprises needs long-term financial support, the higher quality patent higher the investment required (Kang Zhiyong, 2018) [5]. Then with that comes a surge in costs and a decrease in profits. At this time, companies that receive media attention and investor attention will bear the test of both short-term performance and innovation output, so senior executives will tend to prioritize short-term performance and abandon innovation activities. As a result, media pressure can worsen the R&D and innovation environment to the detriment of R&D activities. Second, based on the reputation threat, the high risk of innovation makes the enterprise easy to receive media attention, once the enterprise has a major mistake or a huge loss, it will attract the media to rush to report, which is an irreparable loss to the reputation of the company's senior management. Therefore, due to the protection of their own reputation, the top management tends to avoid innovative activities [6]. In summary, media attention may cause short-sighted behavior in enterprises through the above two paths, thereby inhibiting the innovation activities of enterprises.

H1: All other things being equal, media attention inhibits the innovation performance of family businesses, as a significant negative correlation between media attention and the number of invention patent applications.

As a traditional form of organization, family businesses have always been the focus of scholars. In the last century, scholars believed that family businesses have less risk tolerance than non-family businesses and maintain a conservative attitude towards venture capital investment. Chrisman et al. (2003) found that, unlike other firms, family businesses do not fully pursue economic goals that maximize economic benefits in the process of development, but also focus on non-economic goals that are conducive to the sustainable development of enterprises [7], Gomez-Mejia et al. (2007) [8] Referring to this non-economic goal as social-emotional wealth, they argue that protecting it is the primary goal of a family business. As a result, family businesses are more likely to abandon high-risk innovation activities in order to protect socially emotional wealth, consistent with the conclusions of Wu Bingde, Chen Ling (2014) [9] and others. This is because innovative activities are characterized by high risk, long cycles, uncertain returns, etc., and in order to avoid the loss of social emotional wealth, family businesses usually choose conservative investment strategies. Although families are usually actively involved in business operations, the integration of ownership and management rights helps to reduce the cost of principal agency (Gu Zhihui and Wang Weijie, 2014) [10], thereby improving the efficiency of corporate governance. However, some studies have suggested that families can also use business resources for profit, so that family members serving as directors may reinforce the family's self-interest behavior,[11] thereby reducing the efficiency of corporate governance. Li Jing et al. (2012) believed in a study on corporate structure that some family enterprises will seriously affect the investment in corporate innovation activities due to excessive equity concentration, but in view of external pressure, compared with non-family enterprises, Family-owned companies can increase the conversion rate of innovation inputs and innovation outputs [12]. Yan Ruosen (2016) also pointed out that because the willingness of family businesses is sustainable, most family businesses are "risk averse", and because of the high risk of innovative activities When the stakes of family members in the business are high, managers try to avoid investing in innovative activities.[13]

In general, altruism helps motivate family members to commit to the long-term sustainability of the family and the business, but altruistic behavior can also lead to nepotism in the family control, which leads to some agency problems. When the board of directors is held by a large number of family members who are not competent for their duties, the enthusiasm of outside executives and directors is greatly inhibited, resulting in innovative thinking that cannot flow into the enterprise, which in turn leads to a decrease in the ability of the family business to avoid risks. In addition, family directors regard the company as their own community of destiny, and when they receive media attention, family members are more nervous and pay more attention to immediate interests, so in the face of investment projects with long cycles, high investment and uncertain returns such as technological innovation, family directors are relatively more conservative, thereby inhibiting the improvement of research and development level.

H2: Family director allocation plays a negative regulatory role in the media attention relationship with the family business.

### 3. Research Method

#### 3.1. Sample and Data

Based on the operability of the research design, this paper selects China's 2013-2019 A-share listed family enterprises as a research sample for 7 consecutive years, and the main measurement variables are checked from CSMAR, CNRDS and listed company financial news database (CFND) and other databases, and some of the missing data is supplemented by manually consulting the company's financial statements.

In addition, based on the consideration of ensuring the comprehensiveness and accuracy of the research, this paper can also deal with the following: (1) exclude financial enterprises. The financial industry compares itself to other businesses, business methods, etc. It is special and will have some interference with the research in this article, so it will be excluded. (2) Exclude prefix ST, \*ST enterprises. This class of listed companies in the face of media attention under the influence of internal possible. The possibility of illegal operation, so its data credibility is not high. (3) Exclude listed companies that have not invested in R&D for five consecutive years or more. (4) In the study for abnormal data are carried out disposal, i.e., 1% up and down all continuous variables via stata16 Winsorize(indented) processing so that this data does not affect the final empirical analysis results.

#### 3.2. Variable Description and Indicator Definition

The variables selected in this article are shown in Table 1.

#### 3.3. Model Settings

Firstly, examine the impact of media attention on the innovation performance of family businesses, so build a model:

$$Ip_{i,t+1} = cons + \alpha_1 Media_{i,t} + \sigma controls_{i,t} + \varepsilon_{i,t} \quad (1)$$

Equation (1), representing the constant term, controls represent the set of control variables, if positive, then false 1 is verified, and in equation (2), if the coefficient of the interaction term is significantly negative, 2 is assumed to be proven. In the empirical analysis, this paper mainly uses a fixed-effect model, and the endogenous problem can be corrected to a certain extent by controlling the individual. In the main regression, OLS and fixed-effect models are used for testing, and both time and industry effects are controlled step by step.

$$Ip_{i,t+1} = cons + \beta_1 Media_{i,t} + \beta_2 Media_{i,t} * Dfam_{i,t} + \sigma controls_{i,t} + \varepsilon_{i,t} \quad (2)$$

**Table 1.** The variables selected in this article

type	Variable name	symbol	definition
Type	Variable name	Symble	Definition
Interpreted variables	Innovative performance	Ip	Ln (invention patent applications +1)
Explanatory variables	Media attention	Media	Ln (number of web news +1).
Adjust variables	Family board seat configuration	Dfam	Family members of the Board of Directors
Control variables	Company size	Size	Ln (total assets of the enterprise at the end of the year).
	Equity concentration	Cn	The equity of the largest shareholder
	Enterprise growth	Growth	Revenue growth rate
	Net interest rate on equity	Roa	Average balance of net profit/shareholders' equity
	Solvency	Lev	Total liabilities at the end of the year / Total assets at the end of the year
	Age of business	Age	The number of years of establishment of the enterprise

## 4. Empirical Analysis

### 4.1. Descriptive Statistics

**Table 2.** Descriptive Statistics

variable	N	mean	p50	sd	min	Max
Invention	6258	2.097	2.079	1.328	0	6.848
Media	6256	4.530	4.718	1.154	0	7.618
Dfam	6028	0.183	0.143	0.118	0	0.667
Size	6258	22.00	21.91	1.016	19.02	26.85
Cn	6258	0.803	0.643	0.615	0.0110	3.796
Growth	6258	0.459	0.152	5.654	-29.48	423.0
Roa	6258	0.0550	0.0540	0.0810	-1.092	1.020
LEV	6258	0.377	0.367	0.201	0.00800	4.596
Sfin	6258	0.0900	0.0550	0.100	0	0.965
Firmage	6258	16.07	16	5.316	4	44
PPEAsset	6258	0.201	0.182	0.130	0.00100	0.695
variable	N	mean	p50	sd	min	Max

Table 2 is the descriptive statistical results of the sample, as shown in the table, the average number of invention patent applications indicating the innovation performance of enterprises is 2.097, and the minimum value of 0 indicates that some family enterprises have not invented in certain years Patent application, the maximum value is 6.848, and the gap between innovation output is large; The media attention averaged 4.530, with a minimum of 0 and a maximum of 7.618, indicating that there is a large difference in the degree of media attention to different family businesses. The average proportion of family directors in the adjustment variable is 0.183, indicating that the proportion of family members on the board of directors is generally low, but there are also enterprises with more than half of the family directors. From the perspective of control variables, the largest gap between companies is the growth rate of operating income, the standard deviation is as high as 5.654, and its maximum value is the

minimum worth More than 3 times, indicating that the gap between the operating conditions and market share capacity of the enterprise is large, and the market competition is more fierce; the difference in the size of the company is more significant, the average value is 22, the standard deviation is 1.016; the average value of the equity balance is 0.803, which shows that equity has a certain check and balance role in most family enterprises; the average value of the enterprise age is 16.07, and the median is 16, indicating that the sample data distribution is relatively uniform; the average value of the fixed asset ratio and the average asset-liability ratio of the family enterprise is low, This shows that most family businesses tend to have a conservative business strategy.

## 4.2. Empirical Results

**Table 3.** Media Attention and Enterprise Innovation Performance

	(1)	(2)	(3)	(4)
	m1	m2	m3	m4
VARIABLES	L.Invention	L.Invention	L.Invention	L.Invention
Media	-0.0469*** (-3.138)	0.0482*** (2.973)	-0.0598*** (-3.518)	-0.0617*** (-3.259)
Size	0.538*** (26.70)	0.609*** (30.55)	0.443*** (7.535)	0.451*** (8.764)
Cn	-0.0393 (-1.413)	-0.0621** (-2.423)	-0.0481 (-0.803)	-0.0823 (-1.397)
Growth	-0.00873*** (-3.092)	-0.00811*** (-3.211)	-0.00455*** (-5.083)	-0.00476*** (-4.624)
Roa	-0.473** (-2.135)	-0.00139 (-0.00677)	-0.934*** (-4.591)	-1.006*** (-4.842)
LEV	-0.505*** (-4.823)	-0.302*** (-3.122)	-0.205 (-1.643)	-0.210* (-1.742)
Sfin	0.146 (0.849)	0.905*** (4.547)	-0.712* (-1.674)	-0.519 (-1.240)
Firmage	-0.00230 (-0.690)	0.00261 (0.814)	0.0935*** (8.196)	0.0956*** (8.574)
PPEAssets	0.314** (2.389)	0.0607 (0.422)	0.826*** (3.190)	0.771*** (2.988)
Constant	-9.332*** (-21.79)	-12.01*** (-27.68)	-8.869*** (-7.369)	-9.432*** (-8.846)
Individual	no	no	yes	yes
Indus	no	yes	no	yes
Year	no	yes	no	yes
R	0.138	0.325	0.186	0.217
N	894	894	894	894

Table 3 below is the result of the regression of the sample data using model (1), where column (1) and (2) use OLS mixed regression, the difference is whether the industry and annual effects are controlled. Column (3) is the result of regression using a fixed-effects model after controlling the individual, and column (4) is Regression results for bidirectional fixed-effects models that control both industry and time on a column (3) basis. At the same time, the regression results are corrected by using the cluster robustness criterion error. As can be seen from Table 3, Media's coefficients are positive or negative, both using OLS and fixed-effects models, and are significant at the 1% level. In order to interpret the estimation results more accurately, this paper first performs a Hausman test on the model, which tests a p-value of 0.0000, rejects the null hypothesis, and believes that the basic assumptions of the random effects model are not satisfied, and then finds that the model should include time effects, so

column (4) The results are a more robust reflection of the media's focus on innovation performance. In column (4), the regression coefficient between media attention and the total number of patent applications is -0.0617, indicating that when controlling for other variables, the total number of patent applications of enterprises will decrease for every 1% increase in media attention 0.0617%, and significant at the 1% level, consistent with the previous conjecture. For the control variables, the scale of the enterprise, the number of years of establishment of the enterprise, and the proportion of fixed assets have a significant positive role in promoting the number of invention patent applications and the number of non-invention patent applications, indicating that the family enterprise itself has the ability and stability It will significantly promote the research and development of invention patents and non-invention patents. In addition, the asset-liability ratio, corporate growth, net asset profit margin, and sales expense ratio show a significant negative correlation with the invention patent application of the family enterprise, indicating that when the enterprise debt is high, it will reduce the high-cost and high-risk invention patent research and development in order to reduce the risk. The higher the sales expense rate, the greater the cost of product sales and the higher the difficulty of sales, which also indicates that the company's products lack competitiveness, thereby reducing innovation activities.

**Table 4.** The regulatory role of the family board seat allocation

	(1)
VARIABLES	L.Invention
Media	-0.0683***
	(-4.095)
Dfam	0.176
	(0.818)
Media*Dfam	-0.234**
	(-2.356)
Size	0.424***
	(10.57)
Cn	-0.0798*
	(-1.732)
Growth	-0.00464**
	(-2.502)
Roa	-0.978***
	(-5.600)
LEV	-0.248**
	(-2.313)
Sfin	-0.603**
	(-2.045)
Firmage	0.101***
	(10.51)
PPEAssets	0.754***
	(3.612)
Constant	-9.149***
	(-10.82)
Observations	5,169
Number of newcode	873
R-squared	0.221
year FE	YES
INDUS FE	YES

The reason for reducing invention patent innovation in the net interest rate of assets and in the period of revenue growth may be related to the characteristics of family businesses, for family enterprises, invention patent application risk is high cost, which will be more inclined and conservative investment solutions than other enterprises in strategic choices, in order to develop more stably, it will choose a more stable development direction in the period of good returns.

Table 4 below shows the adjustment effect of family director seat allocation between media attention and family business innovation performance, as shown in the table, the interaction coefficient between the proportion of family directors and media attention is -0.234, and it is significant at the level of 5%. It shows that the proportion of family directors has a negative adjustment effect between media attention and the performance of invention and innovation. This conclusion is consistent with hypothesis 2 above. This means that when family members have more seats on the board, they are more likely to consider family needs when faced with media scrutiny, i.e., less willing to invest in innovation in order to protect family control and existing property.

## 5. The Conclusion of the Study

Based on the theories of social wealth, high-class and information asymmetry, this paper selects the data of A-share listed family enterprises in China from 2013 to 2019 as the research object, studies the negative impact of media attention on the innovation performance of family enterprises, and then further explores the regulatory role of board characteristics between the two. Combined with the empirical research results above, the conclusions of this paper can be summarized as follows: First, under the condition of other factors remaining unchanged, media attention will inhibit the innovation performance of family enterprises. Second, the allocation of family director seats has a negative regulatory effect between media attention and innovation performance, and too many family members on the board of directors indicate that the right to speak will be more in the hands of the family, and the family directors always want stability.

Innovation is an important source of promoting the long-term development of enterprises, and it is also an important embodiment of the comprehensive strength of an enterprise. Improving the innovation performance of family businesses is of great significance. From the above research conclusions, it can be concluded that the high degree of media attention will bring external pressure to family businesses, causing enterprises to reduce R&D investment, resulting in a decline in the innovation performance of enterprises, of which the excessive allocation of family board seats will strengthen this negative effect. Therefore, through relevant analysis and combined with empirical conclusions, the following targeted recommendations are proposed to alleviate the adverse impact of media attention on the innovation performance of family enterprises. First, the company should consciously create a more transparent information environment, Objectively and accurately disclose relevant information about the enterprise in public documents such as annual reports, and reduce the information of external investors and corporate stakeholders' symmetry, build a good corporate reputation and avoid leading to speculative media coverage. second, the government and relevant regulatory departments have the obligation to actively guide the healthy development of the media industry, and the government needs to improve laws and regulations from all aspects such as the source of communication, communication channels and accountability after the fact, emphasizing the authority of media reports, but also ensuring the authenticity of the content of reports.

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