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Do Independent Director Characteristics Affect Firm Performance Under the COVID-19 Epidemic? Empirical Evidence from China

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Abstract

This paper investigates the effect of independent directorship on the firm performance of Chinese listed companies under the impact of the global COVID-19 epidemic. The study starts by assessing the relationship between independent director-related characteristics and firm performance, then mines independent director characteristics variables, collects variable data, proposes reasonable hypotheses, and constructs a data model. 1597 companies listed on Shanghai and Shenzhen stock index, China, from 2020 to 2021 has been selected as the research sample. An empirical study on the relationship between independent directors' characteristics and firm performance was conducted using SPSS25. The results show that under the impact of the global COVID-19 epidemic, the proportion of independent directors on the board of directors, the age of independent directors, the remuneration of independent directors, and the overseas background of independent directors in Chinese listed companies have a negative relationship with the current firm performance, while the proportion of female independent directors and the part-time rate of independent directors do not have a positive effect on firm performance. The findings of this study strongly imply that independent directors' characteristics play a significant role in corporate governance and firm performance in Chinese listed companies and that the external environment has an impact on how well independent directors can carry out their duties.

Keywords: Listed Companies, Independent Directors Characteristics, COVID-19 Epidemic, Firm Performance

JEL Classification Code: G31, G34, G38, M41

1. Introduction

At the end of the 20th century, the system of independent directors was widely implemented worldwide, which played an important role in protecting the rights and interests of minority shareholders, strengthening the supervisory function, and improving the professionalism of companies, and was an important innovation in the structural governance of companies. Osman and Samontaray (2022) stated that independent directors on the board can work freely and are not subject to control or influence from major shareholders or management. Esa et al. (2022) found that independent directors have a positive relationship with a company's reputation and the presence of independent directors, leads to better performance of the company. However, although the level of corporate governance has been improved after years of exploration, the research on the system of independent directors and its actual operational effects lag far behind foreign countries due to many reasons, such as the short time of the system's establishment, insufficient experience, and small data samples. Coupled with the impact of the global COVID-19 epidemic in the past two years, it is not known whether the system of independent directors in Chinese listed companies still plays a good role. Such a reality not only affects the correct implementation of the independent director system but also is not conducive to the good development of Chinese listed companies in the post-epidemic era. Because of this, an essential part of corporate governance at the moment is how to accurately comprehend the relationship between the independent director system and the success of Chinese listed firms,

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as well as how the independent directors should contribute to that performance.

Based on this, this paper selects data related to Chinese listed companies from 2020–2021 as the research sample to study the relationship between the characteristics related to independent directors and corporate performance in the context of the global COVID-19 epidemic and to explore which characteristics of independent directors are good promoters of corporate governance to provide reasonable suggestions for corporate governance and performance improvement of Chinese listed companies in the post-epidemic period.

2. Literature Review

2.1. The Proportion of Independent Directors and Firm Performance

Baysinger and Butler (1985) found evidence that the larger the size of independent directors on the board, the better the corporate's performance. Rosenstein and Wyatt (1990) also found that a corporate shareholder's wealth gradually increases with a higher proportion of independent directors. Thakolwiroj and Sithipolvanichgul (2021) suggested that the more independent directors there are, the lower the cost of debt financing because they have tighter control over the management team than other directors have over debt financing, which is, of course, beneficial for firm growth. Some scholars also divide the board members into independent and non-independent directors and prove the negative correlation between the proportion of independent directors and firm performance by studying the positive correlation between the proportion of non-independent directors and firm performance. This is because increasing the proportion of independent directors inevitably leads to a decrease in the proportion of internal non-independent directors. Steven and Petra (2005) found that although it is mandatory to have a certain percentage of independent directors on the board of directors of a company, no significant positive relationship between independent directors on performance was found when several aspects, such as the composition of the board of directors and the audit committee were examined.

2.2. The Proportion of Female Independent Directors and Firm Performance

When comparing the gender ratio of independent directors to that of men and women in companies, Bilimoria and Piderit (1994) found that companies tend to favor men more when choosing independent directors. Zeng (2018) empirically demonstrates that female independent directors has no significant effect on corporate performance. However, according to Zhou and Xiu (2014) study of the impact of female independent directors versus non-independent directors on firm performance, female independent directors can significantly boost business performance. Khan and Wang (2021) by studying the relationship between executive governance and corporate performance in selected commercial banks in China, it was found that female independent directors positively and significantly affect bank financial performance. Wang et al. (2021) investigated the impact of women and independent directors on corporate social responsibility and financial performance, the empirical results show that gender diversity in boards significantly and positively affects CSR reporting.

2.3. Independent Directors' Compensation and Firm Performance

Gao et al. (2007) found through empirical research that the higher the independent directors' compensation, the more resources it brings to the company, which is conducive to improving the company's performance. Wang (2014) who findings from the study that independent directors' compensation has a significant positive effect on firm performance.

2.4. Independent Directors' Age and Firm Performance

Hao et al. (2014) used three years of data from small and medium-sized board-listed companies as a research sample. They used return on assets, return on net assets, and Tobin's Q as firm performance measures. They analyzed the relationship between independent director age and return on assets and return on net assets and found that the relationship was significantly negative. Li (2016) conducted a regression analysis by using the ordinary least squares method and concluded that the average age of independent directors in listed companies has a negative effect on the firm performance measured by total return on assets. Li and Zhou (2019) conducted a study with all listed companies in Shanghai in 2017 and concluded that there is an inverted "U" shaped relationship between the age of independent directors and firm performance.

2.5. Independent Directors' Concurrent Employment and Firm Performance

Shivdasani and Yermack (1999) studied the relationship between independent directors and firm performance in U.S. firms engaged in hostile takeovers and also found that the more independent directors hold other corporate positions, the better the corporate governance performance. By examining the relationship between the average number and reputation of companies per independent director and firm performance, Fama and Jensen (2017) discovered that independent boards of directors hired by companies actively participate in corporate governance, help company management make decisions, improve quality, and thus contribute to company performance. To summarise, the number of part-time companies reflects the independent director's reputation and competence, as the company is more willing to hire an expert who has made outstanding contributions to be the company's independent director. However, Li and Ang (2000) investigated 121 U.S. companies and discovered that part-time independent directorship leads to distraction from monitoring and decision-making, which has a negative impact on firm performance. Fich and Shivadasani (2006) investigated the level of governance and profitability of companies with three or more independent directors serving concurrently and discovered that having a large number of these independent directors serving concurrently and being busy at all times leads to poor corporate governance and low profitability.

2.6. Overseas Background of Independent Directors and Firm Performance

Zhang and Zhou (2010) investigated the relationship between independent directors with overseas education backgrounds and the size of the firm's risk resistance. They discovered that independent directors with overseas education backgrounds have extensive knowledge and international experience, which aids in the firm's risk resistance. According to Giannetti et al. (2015), listed companies with independent directors from overseas are more sensitive to fluctuations in performance and change their positions more frequently. The company's CEO would be more sensitive to fluctuations in performance, which could improve poor corporate governance and, thus, governance efficiency.

3. Research Methods

3.1. Sample and Data Sources

This paper employs an empirical research method to investigate the relationship between the characteristics of independent directors and the performance of listed companies in China from 2020 to 2021 under the influence of the COVID-19 epidemic, whose information is derived from the Guotaian CSMAR database. First, considering the inconsistency of the accounting system of the financial industry with other industries and the special characteristics of ST and *ST companies, the above companies are removed to ensure the validity of the research results. Second, 1597 companies were selected after screening the listed companies that contain independent directors, companies with incomplete data disclosure, and companies with null, extreme, and abnormal values of the relevant characteristics of independent directors. The sample of listed companies includes companies from all sectors of the national economy, reflecting the sample's breadth.

In the first stage, the data was collected and organized by EXCEL, and the normality test of the relevant variables was conducted with the help of Stata15.0. To ensure the normality of the variables, the data of the relevant variables were subjected to 5% and 95% tail shrinkage using SPSS25.0, and on this basis, a multiple regression model was established by referring to the existing literature to select the appropriate variables. Finally, SPSS25.0 was applied to the model, and descriptive statistics, correlation analysis, and linear regression analysis were performed.

3.2. Variable Definitions

3.2.1. Dependent Variable

An in-depth reading of the extensive reference literature reveals that most researchers use earnings-based indicators to measure firm performance, and most of these indicators are relative values. Common measures of firm performance include Tobin's Q, return on net assets (ROE), return on total assets (ROA), etc. The dependent variable in this paper will be the return on assets (ROA) as the performance indicator of the firm. Tobin's Q determines the market value of the company based on the stock price; however, due to the imperfect development of China's capital market, the stock price is highly variable, which will result in inaccurate calculation results, so it is not appropriate to measure the company's performance using Tobin's Q. ROA can reflect the profitability of total assets and is a reflection of the return per asset. Likewise, ROE measures the return to shareholders, and for a company, this is important because ROE is a better way to gauge its performance. However, a company may have a good ROE, but there's a considerable chance that it wasn't obtained through ethical business practices. As a result, it cannot accurately reflect the company's current status. In contrast to ROE, ROA is more thorough.

3.2.2. Control Variables

Many factors have an impact on corporate performance, and to ensure the validity of the analysis results, this paper will select some factors that have a greater impact on corporate performance as control variables, which are corporate asset size, corporate gearing ratio, and board size. Specifically, corporate asset size (BSIZ) is taken as total corporate assets, corporate gearing ratio is taken as the ratio of liabilities to total assets, and board size is taken as the total number of board members.

3.2.3. Independent Variables

1. **Ratio of independent directors**
   The ratio of the number of independent directors to the number of the board of directors is used to measure the size of independent directors to the board of directors.
2. **Ratio of female independent directors**
   The ratio of female independent directors on the board of directors is calculated using the ratio of the number of female independent directors to the total number of board members.
3. **Remuneration of independent directors**
   As there is no single standard for the compensation of independent directors in each company in China, the remuneration of independent directors is measured using the average of the remuneration of independent directors in each company. This is because the remuneration of independent directors is directly under the control of the listed company where they serve and is determined by combining the independent directors' conditions and the actual situation of the company.
4. **Age of independent directors**
   The average age of all independent directors in each company is used as the characteristic value of the study observation for independent directors.
5. **Average part-time employment rate of independent directors**
   The average of the number of independent directors who work part-time in each firm is used as the characteristic value of the variable because part-time employment of independent directors is a personal behavior and there is no set norm for the company.
6. **Whether the independent director has an overseas background**
   This variable is a dummy variable. If an independent director has either overseas study or practice, he or she is considered to have an overseas background and is recorded as 1. If neither of them has an overseas background, the value is 0. For the same company, as long as one of the independent directors has an overseas background, he or she is considered to have an overseas background and is recorded as 1. Otherwise, the value is none and is recorded as 0.

3.3. Variable Measurements

The variable measurements are described in Table 1.

Table 1: Variable Measurements

Variable Name	Variable Symbol	Variable Measurement Formula or Description	Type of Variable
Company's total net asset margin	ROA	Net profit / total asset balance	Dependent variable
Percentage of independent directors	PID	Number of independent directors/board of directors	Independent variable
The proportion of female independent directors	PFID	Number of female independent directors/ board of directors	Independent variable
Average Salary	SAL	Average of independent directors' compensation per company	Independent variable
Average age	AGE	The average age of independent directors per company	Independent variable
The average part-time employment rate	APT	The average part-time employment rate of independent directors	Independent variable
Whether or not the company has an overseas background	OBD	The company's independent directors who have overseas background is recorded as 1, otherwise, it is 0	Independent variable
Company's gearing ratio	ZFL	Total liabilities/total assets	Control variables
Board size	BSIZ	Number of board members	Control variables
Company asset size	FSIZ	Company assets	Control variables

3.4. Research Hypothesis

The following hypotheses are put forth here based on the aforementioned literature reviews, taking into account the fact that China's independent director system is still in its early stages of development, as well as the effectiveness of independent directors in companies in the context of Chinese social reality and the expectations of the work of independent directors in the context of the COVID-19 epidemic, the following hypotheses are proposed here.

H1: *The proportion of independent directors in the context of the* COVID-19 *epidemic is negatively related to company performance.*

The current environment for exercising power in China is not perfect, and independent directors have been known as "vase directors" (directors who do not actively participate in the management of the company), and the impact of the new epidemic has made the company's development difficult. Hence, due to the oversight of their authority and the restrictions imposed by China's domestic irregular epidemic prevention and control regulations, it is challenging for independent directors to successfully carry out their duties. The number of non-independent directors will decrease as the percentage of independent directors increases, which is more detrimental to the development of the company. Therefore, this hypothesis is proposed in this paper.

H2: *The proportion of female independent directors in the context of the* COVID-19 *epidemic is positively related to firm performance.*

This is because, compared to male independent directors, women are naturally risk-averse and can serve as a warning when the company has potential risks, thus contributing to improving the company's performance. Therefore, this paper suggests that female independent directors have a positive effect on firm performance.

H3: *Independent directors' remuneration in the context of a* COVID-19 *epidemic is not conducive to the achievement of firm performance and has a negative relationship.*

Independent directors will be more motivated to perform their tasks successfully if they are compensated properly, and a fair compensation structure will encourage independent directors to do so. Given the effects of the COVID-19 pandemic on the company's performance, it appears that independent directors do not receive fair compensation and will therefore be less interested in the performance of the company. Therefore, this hypothesis is proposed.

H4: *There is a negative correlation between the age characteristics of independent company directors and company performance in the context of the* COVID-19 *epidemic.*

Combined with numerous studies in the literature, this hypothesis is proposed considering the special context of the COVID-19 epidemic, where the older independent directors focus more on their life rather than their work.

H5: *Independent directors' part-time employment in listed companies is positively related to company performance.*

The reasonable part-time employment of independent directors is conducive to the company since such directors are better able to understand complex situations involving multiple companies and industries and are better equipped to advise businesses as they seek innovative solutions to the COVID-19 epidemic. Therefore, this hypothesis is proposed.

H6: *There is a positive relationship between independent directors with overseas backgrounds and company performance.*

Independent directors with overseas backgrounds have a more forward-looking vision and rich overseas background is beneficial to the development of the company, so this hypothesis is proposed.

3.5. Empirical Model Construction

Combining the design of each of the above variables and also selecting the company's total net asset margin (ROA) as the dependent variable, the following multiple regression equation was established.

$$
\begin{aligned}
\mathrm{ROA} = {} & \alpha + \beta_1 \mathrm{PID} + \beta_2 \mathrm{PFID} + \beta_3 \mathrm{SAL} + \beta_4 \mathrm{AGE} \\
& + \beta_5 \mathrm{APT} + \beta_6 \mathrm{OBD} + \beta_7 \mathrm{ZFL} + \beta_8 \mathrm{BSIZ} \\
& + \beta_9 \mathrm{FSIZ} + \varepsilon
\end{aligned}
$$

where α is the constant term, β_1 to β_9 refer to the corresponding regression coefficients, and ε is the residual.

4. Empirical Results

4.1. Descriptive Statistics

In this paper, descriptive statistics was conducted on the characteristics of the variables of the model for a sample of 1597 companies during 2020–2021, and the results are shown in Table 2.

Table 2: Descriptive Statistics of the Sample for 2020–2021 (*n* = 1597)

Sample Name	Min	Max	Mean	Standard Deviation
PID	0.0500	1.0000	0.2972	0.1329
PFID	0.0000	0.4667	0.15698	0.13416
SAL	34.0000	81.0000	54.0323	5.4220
AGE	31565.0000	150000.0000	75636.1171	31385.6575
APT	0.0000	6.3333	1.2334	1.3810
OBD	0.0000	1.0000	0.6093	0.4881
ROA	−0.5446	0.2001	0.06168	0.08469

From Table 2, we can see:

1. The mean value of independent directors is 0.2972, which roughly corresponds to the SEC requirement that independent directors should account for one-third of the board, but there are still listed companies that do not recruit independent directors. The maximum value of the proportion of independent directors is 1, indicating that there are companies with all board members being independent directors. However, there are still listed companies that do not fully abide by the SEC's criteria to appoint independent directors promptly, which also demonstrates that certain companies do not adhere to the relevant laws and regulations during special periods. The performance of the company is not stable enough.
2. The minimum female independent director is 0, suggesting that certain businesses do not view female independent directors as a requirement. The mean value is 0.15698, which is different from the mean values of 0.1073 in 2004, 0.1178 in 2005, and 0.1179 in 2006 analyzed by other academics, indicating that, after more than 10 years of progress, the proportion of female independent directors has been in a low level.
3. In the two years of 2020 and 2021, the average amount paid to independent directors was 75,636,000 yuan, with the maximum amount being 150,000 yuan and the minimum amount being 31,560,000 yuan. When compared to study findings of numerous academics on the Chinese market ten years ago, the average value of independent directors' compensation is generally consistent, showing no signs of growth, and the low value has not yet achieved the average value level of the previous years. Of course, such a level of compensation is acceptable. The possibility that it is impacted by the global COVID-19 outbreak cannot be ruled out.
4. The oldest independent director is 81 years old, and the youngest is 37 years old, and the mean value of age is about 54 years old, which indicates that the company tends to hire a slightly older person as an independent director. And the standard deviation of the mean age is 5.4220 with a large deviation, which indicates that the company has no specific age requirements for appointing independent directors. However, the age hierarchy of independent directors is highly important.
5. The minimum part-time rate of independent company directors is 0, which indicates that some companies have no part-time independent directors, and the mean value is 1.2334. Overall, independent company directors typically hold part-time jobs.
6. The minimum value of independent directors with overseas backgrounds is 0, indicating that some companies do not hire people with an overseas background; the mean value is 0.6093, indicating that companies' independent directors with overseas backgrounds and non-overseas backgrounds account for half of each. However, listed companies prefer to hire people with overseas backgrounds as independent directors.
7. The minimum value of ROA is –0.544, the maximum value is 0.2001, and the mean value is 0.06168. On the whole, it can be seen that the companies' ROA is different and there are large differences.

4.2. Variable Correlation Test

Table 3 shows that the significance of the individual variables, control variables, and the dependent variable ROA are all 0.000, passing the significance test. Additionally, the correlation between the individual variables is weak, except for a few very weak correlations, indicating that there is essentially no multicollinearity, and the subsequent operation can continue.

Table 3: Correlation Test of Main Variables for 2020–2021 (*n* = 1597)

	PID	PFID	AS	AA	APT	OBD	ZFL	BSIZ	FSIZ	ROA
PID	1									
PFID	−0.300**									
SAL	−0.038	0.009								
AGE	0.021	−0.019	0.127**							
APT	−0.256**	0.137**	0.068**	0.025						
OBD	0.515**	−0.428**	−0.005	0.031	−0.231**					
ZFL	0.022	−0.027	0.085**	0.243**	−0.015					
BSIZ	−0.047	−0.025	0.114**	0.466**	0.013	−0.013				
FSIZ	−0.551**	0.025	−0.037	−0.124**	0.191**	−0.214**	−0.164**	−0.083**		
ROA	−0.192**	0.097**	−0.088**	−0.118**	0.097**	−0.152**	−0.441**	−0.106**	0.204**	1

** Correlation is significant at the 1% level (two-tailed).

Table 4: Coefficients

Hypothesis	Standardized Path Coefficient (*β*)	*t*-value	Test Result
H1: PID ← ROA	−0.228	−3.210**	Supported
H2: PFID ← ROA	0.026	0.870	Not Supported
H3: SAL ← ROA	−0.670	−4.113**	Supported
H4: AGE ← ROA	−0.216	−2.205*	Supported
H5: APT ← ROA	0.45	1.823	Not Supported
H6: OBD ← ROA	−0.083	−2.412*	Not Supported

**Correlation is significant at the 1% level (two-tailed); *Correlation is significant at the 5% level (two-tailed).

4.3. Regression Results

The model was tested, and R2 was found to be 0.514, and the adjusted R2 was 0.512, showing that the independent and control variables could explain 51% of the causes of variation in the dependent variable and had a good fit; the F was 186.976, which passed the significance test at the 1% level, indicating that the variance test findings were substantially different and the results were persuasive (Table 4).

Analyzing the above regression results, we can get the:

1. the correlation coefficient between the proportion of independent directors and firm performance is negative and passes the significance test at a 1% level, which proves that H1 holds. This also confirms that independent directors do play the role of "vase directors" in the context of the COVID-19 epidemic.
2. The correlation coefficient between the proportion of female independent directors and company performance is positive but does not pass the significance test, which proves that H2 is partially valid. This indicates that a higher proportion of female independent directors is not beneficial to the company.
3. The correlation coefficient between independent directors' remuneration and company performance is negative and passes the significance test at the 1% level, proving that H3 holds, indicating that the company's independent directors' remuneration in the past two years did not meet the independent directors' expectations of the remuneration matched by the performance of their duties, so the effectiveness of their performance cannot be guaranteed.
4. The correlation coefficient between the age of independent directors and company performance is negative and passes the significance test at the 5% level. H4 is supported by the fact that independent directors' ages are adversely connected with company performance in the year 2020–2021, demonstrating that this level of age—with an average age of 54 and a maximum age of 81—is not ideal for achieving firm performance.

5. The correlation coefficient between the average part-time employment rate of independent directors and company performance is positive but does not pass the correlation test, indicating that hypothesis H5 is partially valid. Hence, more part-time employment of independent directors does not improve company performance.
6. The correlation coefficient between independent directors having an overseas background and company performance is negative and passes the significance test at the 5% level, hence hypothesis H6 is rejected. Therefore, it can be inferred that during the two years of the COVID-19 epidemic, independent directors with an overseas background adversely affected firm performance. The COVID-19 epidemic's local control strategy in China may have been a limitation, causing independent directors with international credentials to make judgments for the company that needed to be more realistic.

5. Discussion

5.1. Analysis of the Factors Influencing the Performance of Companies Affected by the COVID-19 Epidemic

According to Sun et al. (2021), the resource-based theory postulates that a firm's resources are a major factor in its ability to achieve a competitive advantage, determine its performance in the market and risk tolerance, and are crucial to the firm's ability to demonstrate diverse business performance. The COVID-19 pandemic has an unimaginable effect on the market economy as a sudden, global crisis event. The environmental risk outside the company also increases significantly as a result, and this steep increase in external environmental risk will directly affect the firm's internal production, operations, and even human behavior decisions, which in turn affect the firm's performance.

5.2. Analysis of the Mechanism of Independent Directors' Characteristics Affecting Corporate Performance

The independent director system is a crucial component of contemporary corporate governance. After decades of domestic and international practice, it has been discovered that independent directors' governance functions can successfully reduce agents' opportunistic behavior as well as the business, financial, and legal risks that a company faces. This has a positive effect on the performance of the company and ensures its long-term growth. The independent directors' arbitrary initiative is what makes the independent director system effective. Independent directors play advisory, resource, litigation, and supervisory functions in the process of corporate governance. These roles are all closely related to their own expertise, background, and other independent director-specific characteristics. Finally, the COVID-19 epidemic may have an impact on how independent directors behave, which could have an impact on how well a company performs.

6. Conclusion and Managerial Recommendations

6.1. Clarify the Functional Status of Independent Directors

According to the findings of the empirical analysis, the relevant independent director characteristics under the influence of the COVID-19 epidemic can still have an impact on the performance of the company. As a result, we should pay attention to the functional status of independent directors, especially in the post-epidemic period, pay attention to improving the company's detailed requirements for the work of independent directors, and can reasonably agree on the work responsibilities. For example, the company can agree on the work of independent directors. A company may decide that the job of independent directors is to offer optimization solutions for the rationalization of the company's governance structure from the perspective of internal governance; the job of independent directors may then be placed on operational decision-making in the hope of improving the operating profit of the company. In addition, the role of independent directors can be to protect the company and take measures to avoid internal systemic risks and decrease the impact of external non-systemic risks. In addition, the function of independent directors can be positioned to protect the interests of small and medium-sized shareholders and prevent the phenomenon of one share dominating the company. To precisely address the difficulties faced by businesses in the post-epidemic context, the professionalization of independent directors can be developed through the professionalization of their job.

6.2. Pay Attention to the Proportion of Independent Directors on the Board And Gender Characteristics

The empirical analysis reveals that the proportion of independent directors on the board of directors during the epidemic has a negative effect on the company's performance. For listed companies to effectively fulfill the role of independent directors, they must quickly increase the number of independent directors on their boards. Conversely, companies that already have the minimum number of independent directors required by law should not focus excessively on adding more independent directors. Additionally, the descriptive analysis of the sample data reveals that the companies continue to favor selecting men as their independent directors. The correlation test does not show a positive link between the performance of the company and the gender of the independent directors, so neither gender identification nor the gender of the company's independent directors should be taken into consideration.

6.3. Improve the Remuneration Incentive and Restraint Mechanism

According to research, independent directors' compensation during the COVID-19 epidemic is negatively correlated with the company's performance, and the support of stable compensation is essential to whether independent directors can carry out their responsibilities normally and maintain their independence as independent directors. It is necessary and feasible to improve the remuneration mechanism of independent directors and establish a guaranteed independent directors' remuneration system, especially in the context of the global COVID-19 epidemic, to reasonably guarantee the remuneration level of independent directors. To ensure that independent directors maintain a favorable working status, the extent of contribution of independent directors can also be assessed based on the number of independent opinions offered, the attendance, the absences, and the total time worked. This allows the remuneration to be flexibly adjusted in conjunction with the company's earnings.

6.4. Pay Attention to the Consideration of the Age Characteristics of Independent Directors

From the empirical hypotheses and results, the data characteristics of 2020–2021 reflect that the older age of independent directors at this time is detrimental to the company's development. The average age of independent directors in the sample data is 53 years old, which is close to the age of retirement, while the maximum age is 81 years old, which is long past the retirement age. Together with the impact of the COVID-19 epidemic and the change in people's mentality, independent directors at this time are more concerned about the improvement of life quality than the display of work value. In addition, due to differences in their ability to adapt and handle new situations, independent directors who are too old will regard decisions more cautiously than middle-aged people. Additionally, older independent directors' health will also impact their capacity to fully execute their duties under the independent director agreement, thus to be more useful to the growth of businesses in the context of the COVID-19 epidemic, it is advised to suitably minimize the employment of older independent directors and pay attention to Young people should be chosen as independent directors.

6.5. Paying More Attention to the Background Characteristics of Independent Directors

The empirical results show that independent directors' part-time employment in other companies does not have a positive impact on the performance of the company, and does not bring favorable help to the company they serve. Therefore, when recruiting independent directors, proper attention should be paid to whether the independent directors have part-time employment in other companies. If independent directors hold part-time employment in other companies they cannot bring positive contributions to the development of the company because of their limited energy. Hence, it is better to select and hire people who can serve the company exclusively, especially considering that independent directors with overseas backgrounds are negatively correlated with the performance of the company. Therefore, in light of the challenges facing the company's development in the post-epidemic era, the independent directors of the company should primarily be people with local background status. At the moment, independent directors with overseas backgrounds do not offer the company more open development suggestions. Those with international backgrounds should enhance their localization capabilities and quickly grasp the conditions in China to provide their real value.

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