

Chief Executive Officer Characteristics, Internal Control Quality and Audit Fees

Xin Xie, Xiaoying Wu*

School of Accounting, Guangzhou College of Commerce, Guangzhou, Guangdong, China

**Corresponding Author.*

Abstract: As an important position among corporate executives, CEO is mainly responsible for the daily business activities and has a profound impact on the development of enterprises. We investigate the relationship between CEO characteristics and audit fees in China. We use the data of 2,873 listed companies from 2012 to 2022 to construct a multiple regression model. We found it is a significant positive relationship between CEO's academic level and overseas background and audit fees, and internal control quality positively moderates the relationship between CEO's academic level and overseas background and audit fees. However, the mediating effect of internal control quality on CEO's professional and academic background is not obvious. Our research not only enriches the theoretical frameworks of both internal control quality and audit fees, but also extends research perspectives on CEO characteristics, enabling optimization of corporate governance structures and hiring mechanisms.

Keywords: CEO; Personal Characteristics; Internal Control Quality; Audit Fees; Corporate Governance

1. Introduction

In the process of continuous development and growth of the economy, the scale of capital market is also growing, and whether the capital market can develop benignly is directly related to the stable growth of country's economy. The capital market laws and regulations continue to improve, but there are still some undesirable phenomena, such as vicious competition in enterprises and financial fraud. In recent years, the financial fraud incidents are endless. For example, the Kangmei Pharmaceuticals inflated income while inflating deposits as

high as \$30 billion, and many other sensational financial fraud phenomena in the world. The occurrence of many financial frauds, seriously infringes the interests of investors, causes negative emotions in the capital market, thus causes capital market turbulence, and ultimately hinders the healthy development of the national economy^[1].

It can be seen that the adverse impact of financial fraud is not to be underestimated, so how to effectively prevent the occurrence of fraud is of urgency and importance^[2]. To sum up, the effective means to prevent financial fraud of listed companies are divided into two categories, strong internal control and external independent audit supervision. However, in recent years, in the cases of financial fraud, many of its internal control quality has certain problems. Then the topic of how to maintain the internal control quality has received attention. In the conventional literature, almost all the discussions are on the direct factors of internal control quality, such as the enterprise characteristics, its governance characteristics and external supervision factors likely third-party audit, but rarely discuss the potential effect of CEO characteristics on the establishment of internal control.

As a matter of fact, the personal characteristics of the CEO of an enterprise have a very far-reaching impact on the construction of internal control, because their behaviors and management styles can bring about either negative or positive impacts on the internal control system and even on the whole enterprise^[3]. The most important thing is that China's relevant regulations regulate internal control, which itself needs the participation of all employees of the enterprise. Among them, the chief executive officer plays an important role in internal control activities and is responsible for the good standards of internal control system at all times in the daily operation of the company. Therefore, it can be

seen that the entire process of internal control construction activities cannot be separated from the CEO. In this paper, the person who manages business decisions is defined as the CEO, whose power is crucial to the whole enterprise. Therefore, CEO's personal characteristics play an important role in establishing a good internal control system, and affect the overall development of the enterprise, and ultimately affect the change of audit fees. The current academic research and analysis based on the theory of Upper-echelons theory are for the entire executive team, while the individual research on CEO is relatively few. Then it is necessary for this paper from the CEO's personal characteristics as an entry point to conduct empirical research study the interrelationship between CEO's personal characteristics and audit fees.

Therefore, how to conduct research on CEO's personal characteristics is a problem worth thinking about. Upper-echelons theory puts forward a new idea for solving this problem. The theory says that CEOs, due to different growth environments and cognition, have different perspectives, solutions and decision. Then, they may not make the wisest decisions based on their own cognition and values. So, we can summarize the CEO's personal experience in terms of a combination of demographic and background characteristics of the CEO, so as to reflect that the CEO's personal characteristics ultimately affect his decision-making for the company. In this paper, we conduct an empirical study to analyze CEO personal characteristics from the following four dimensions (CEO educational level, professional background, academic background and overseas background), to explore the mechanism of CEO's personal characteristics, internal control quality and audit fees.

2. Hypotheses Development

The professional skills, knowledge, mental agility, values and other aspects of CEO will be affected by his or her personal experience. Based on Principal-agent theory, Upper-echelons theory and Internal Control Quality theory, we mainly discuss four dimensions, namely, educational level, professional background, academic background and overseas background, to explore the mechanism of the impact of CEO's personal

characteristics for internal control quality and audit fees.

2.1 CEO Personal Characteristics and Audit Fees

2.1.1 Educational level

The education level of the CEO is the invisible wealth, which can help him flexibility in dealing with complex matters and emergencies, at the same time, make him have stronger legal awareness and financial related knowledge^[4-5]. Which gives them some advantages in the management decisions of the company and in the negotiations with the firm. Based on the common phenomenon, the CEO with high education have better comprehensive ability than those with low education; Furthermore, this better comprehensive ability enables them to make better behaviors and formulate better rules and regulations in the daily business activities, so that the internal control of enterprises can be strengthened, which ultimately leads to less audit fees. In addition, strong legal awareness and financial awareness may also make it extremely important to the Audit services, so that they will choose well-known and capable audit firms even at a high cost. Based on this, we propose the following competition research hypothesis1:

H1a: CEO education level is positively related to audit fees.

H1b: CEO educational level is negatively related to audit fees.

2.1.2 Professional background

Person's knowledge system and values largely depend on his or her professional background. The expertise of the CEO, as a top corporate executive, has a significant impact on formulation of regulations and decision-making. There are two ways of promotion for CEOs: one is the expert route, step by step from junior technical assistant to industry expert and eventually CEO; The other is the management route, the scope of management is also from a small beginner's management of self-management, to manage a single department, and finally becoming the CEO who plans the entire company.

Marvel and Lumpkin through their study of high-tech enterprises, found that CEOs with a technical background in R&D would be more active in implementing corporate innovation strategies. Then, this type of CEO is so immersed in front-end technology

development that he or she neglects the financial aspects of management, which ultimately leads to a lack of attention to audit-related matters. At the same time, CEO who lack financial knowledge may choose audit firms with lower audit fees in order to make the company's statements better during their tenure, ultimately leading to a reduction in audit fees [6]. In summary, we propose research hypothesis 2:

H2: CEO professional background is negatively correlated with audit fees.

2.1.3 Academic background

If the CEO has an academic background related to finance, the audit firm will think that internal control quality will be relatively good. As this type of CEO have in-depth research on audit pricing, this greatly eliminates the information asymmetry between the auditee and the firm, allowing the CEO to occupy a high position in the process of gaming with the audit firm and ultimately reducing the audit fee. Therefore, Hypothesis 3 is proposed.

H3: CEO academic background is negatively correlated with audit fees.

2.1.4 Overseas background

According to imprinting theory, overseas experience must have a certain impact on executives' style, values and cognitive level, which is reflected in the company's performance, risk level and financial status through decision-making, and ultimately in the level of audit fees [7].

On the one hand. Returnee background executives show greater sensitivity to potential legal risks of enterprises, which can effectively reduce related party transactions that are unfavorable to enterprises. In addition, overseas returnees CEOs tend to have more advanced management concepts, broader horizons and more efficient resource integration capabilities than other CEOs, which can better control risks, make correct decisions in terms of investment and innovation that are more conducive to improving operating efficiency. Therefore, it can effectively reduce the low investment efficiency, insufficient innovation and other decisions that are not conducive to the business development of enterprises, due to poor performance, leading to a reduction of the motivation of enterprises to engage in financial fraud due to poor performance, which can help

to reduce the potential risk of audit failure, thus reducing audit costs.

On the other hand, Overseas background may cause the phenomenon of information asymmetry, and CEOs with overseas background may have information barriers due to their lack of interpersonal relationships and lack of thorough understanding of the domestic market, social development and relevant level of the industry, so they cannot occupy a dominant position in the game process of the firm, which ultimately leads to the increase of audit fees. Based on above discussion, we propose the following competing hypotheses:

H4a: CEO overseas background is positively related to audit fees.

H4b: CEO overseas background is negatively related to audit fees.

2.2 The Mediating Effect of Internal Control Quality

Taking the internal control quality as the path, this paper discusses the impact of CEO's personal characteristics on audit fees and examines whether CEO's personal characteristics have an impact on audit fees through the process of feature-behavior-result transmission [8]. The specific reason is that according to the Upper-echelons theory and internal control theory, important information can be obtained. CEO, as an important member of the executive management, they personal characteristics will affect the decision-making of the company and reflect in the quality of internal control. Secondly, for companies with looser internal control, external audit firms need to spend more manpower and time to expand the scope of audit and implement more audit procedures to identify their risks. In addition, for the sake of insurance, audit firms add a risk premium to secure their benefits. As a result, this paper argues that CEO personal characteristics affect the quality of internal controls, leading to an impact on audit fees. Therefore, the following hypotheses 5 to 8 are proposed in this paper:

H5: CEO educational level affects audit fees via internal controls quality.

H6: CEO professional background affects audit fees via internal controls quality.

H7: CEO academic background affects audit fees via internal controls quality.

H8: CEO overseas background affects audit fees via internal controls quality.

3. Research Design

3.1 Sample and Data

The listed companies in the past ten years from 2012 to 2022 are selected as the research sample. In addition, in order to improve the accuracy, this paper adopts the following measures: (1) excluding ST and * "ST" companies; (2) Eliminating companies with missing information. In this paper, 2873 available sample data from CSMAR database were finally collated. The sample data was collated and analyzed using Excel and Stata software.

3.2 Variable Definition

3.2.1 Dependent variable

The dependent variable in this paper is Audit Fee (AF), denoted by AF, which is selected as the natural log of audit fees disclosed in the annual reports of listed companies.

3.2.2 Independent variable

The core explanatory variable is CEO characteristics, which can be influenced by their educational background as well as their personal experiences thus influencing their company decisions. By reading a large amount of literature and considering the ease of data availability, CEO characteristics are measured in four dimensions: educational level, professional background, academic background, and overseas background.

3.2.3 Mediating variable

The mediating variable in this paper is internal control quality, selected as the logarithm of the internal control index in the Dibble database.

3.2.4 Control variables

Based on previous research, we have selected the following control variables, including CEO gender, age, tenure, company size, corporate debt ratio, ROE, the actual controller of the company, industry and year variables. Specific descriptions of the variables are shown in Table 1 below.

Table 1. Variable Definitions

Type	Symbol	Definition
Dependent variable	af	the natural log of audit fees
Independent variable	degree	1=Secondary and below,2=College, 3=Bachelor's degree, 4=Master's degree, 5 = PhD student, 6 = Other(in other forms, like correspondence courses), 7=MBA/EMBA
	funback	Related to R&D, technology = 1, otherwise = 0
	academic	Academic background = 1, otherwise = 0
	overseas	Overseas background = 1, otherwise = 0
Mediating variable	icq	Logarithm of the internal control index
Control variables	gender	0 = male, 1 = female
	age	Age of CEO
	tenure	CEO tenure
	asset	Total assets of the company
	lev	Ratio of liabilities to assets
	roe	Ratio of net profit to total assets
	state	The actual controller of the company is state-owned=1, otherwise=0
	size	Natural logarithm of total company asset
	year	dummy variable
industry	dummy variable	

3.3 Regression Modelling

To test our hypothesis(H1-H4), regarding the effect of CEO characteristics on audit fees, we posit the following audit fee model (1)-(4):

$$AF_{i,t} = \alpha_0 + \alpha_1 Degree_{i,t} + \alpha_2 Controls_{i,t} + \varepsilon_1(1)$$

$$AF_{i,t} = \beta_0 + \beta_1 Funback_{i,t} + \beta_2 Controls_{i,t} + \varepsilon_2(2)$$

$$AF_{i,t} = \gamma_0 + \gamma_1 Academic_{i,t} + \gamma_2 Controls_{i,t} + \varepsilon_3(3)$$

$$AF_{i,t} = \delta_0 + \delta_1 Overseas_{i,t} + \delta_2 Controls_{i,t} + \varepsilon_4(4)$$

To test the effect of internal control variables on the relationship between CEO personal characteristics and audit fees, this paper constructs model (5):

$$AF_{i,t} = \mu_0 + \mu_1 CEO_{i,t} + \mu_2 CEO_{i,t} \times ICQ_{i,t} + \mu_3 ICQ_{i,t} + \mu_4 Controls_{i,t} + \varepsilon_5(5)$$

4. Analysis of Empirical Results

4.1 Descriptive Statistics

As shown in Table 2, the mean value of audit fee (af) is 14.22, the maximum value is 19.4, and the minimum value is 9.21, indicating that there are significant differences in audit fee expenditure among different companies.

For the independent variable, it can be seen that the CEO's educational level (degree) is divided into seven main sections, and the middle level is 3.914, which is about 4, indicating that the average educational level is at the undergraduate to postgraduate students. There is a relatively obvious gap in the educational level of CEO in public companies. Meanwhile, the average values of CEO's professional background (funback), academic background (academic) and overseas background (overseas) were 0.417, 0.25 and 0.069, respectively. It shows that public companies have the lowest number of CEOs with a returnee background, with a ratio of only 6.9%.

As for the mediating variables, the internal control quality (icq) reaches a maximum of 671.2 and a minimum of only 40.04, indicating a large gap in the internal control quality

between companies. As for the control variables, the average of CEO gender (gender) is at 0.938, and the proportion of female CEOs is only 6.2%, indicating that the number of male CEOs in public companies is much higher than that of females. In terms of CEO age (age), the youngest CEO is 24 years old and the oldest is 71 years old, and the average age is close to 51 years old. It indicates that these business leaders are mainly middle-aged. In terms of CEO tenure (tenure), the longest is 187 months, nearly 15 years, the shortest is 1 month, and the average is only 37.96 months, nearly 3 years. It shows that there is a common phenomenon for the CEO in public companies to high change frequency and short tenure. In terms of corporate debt ratio (lev) is 0.49, the overall level of gearing is low, indicating that the financial risk of enterprises is not high. In terms of the nature of equity (state), the mean value is 0.351, showing that the number of listed companies in China that are actually state-controlled accounts for about 35 per cent of the total number of listed companies. In terms of company size (size), the mean value of this index is only 0.15, indicating that there are also great differences in the size of the sample.

Table 2. Results of Descriptive Statistics

Variable	N	Mean	SD	p50	Min	Max
af	2873	14.22	0.95	14.08	9.21	19.4
degree	2873	3.914	1.233	4	1	7
funback	2873	0.334	0.472	0	0	1
academic	2873	0.25	0.433	0	0	1
ovesea	2873	0.069	0.254	0	0	1
icq	2873	662.9	92.4	671.2	40.04	985.6
gender	2873	0.938	0.24	1	0	1
age	2873	50.71	6.381	51	24	71
tenure	2873	37.96	36.22	26	1	187
asset	2873	23.04	1.682	22.76	16.16	28.7
lev	2873	0.49	0.201	0.496	-0.195	1.237
roe	2873	0.075	2.031	0.032	-0.709	108.4
state	2873	0.351	0.477	0	0	1
size	2873	0.157	0.364	0	0	1

4.2 Results Analysis of CEO Characteristic and Audit Fees

4.2.1 CEO educational level and audit fees

Table 3 presents the results of the regression analysis of the CEO's educational level and audit fees. At this point, column 1 shows that when control variables are not added and the year and industry effects are not controlled,

CEO education level (degree) is significantly and positively related to audit fees (af) at the 5% level. Column 3 shows the regression results of CEO educational level (degree) and audit fee (af) after adding control variables. Column 4 shows the regression results of CEO educational level (degree) and audit fee (af) when year and industry fixed effect models are

added. At this time, the adjusted R2 reaches 0.479, and the model is better than the previous column. Therefore, we should choose the regression results in Column (4) to verify H1 in this paper. From Column 4, we can see that CEO educational level (degree) has a significantly positive impact on audit fee (af) at the level of 1%. To sum up, H1a is verified.

The CEO's education level significantly increases the audit fee, due to the fact that CEOs with a higher level of education pay more attention to the quality of the audit report. As a result, preference is given to well-known or competent firms or teams to provide better quality audit reports, which in turn leads to a significant increase in audit fees.

Table 3. Regression Results Analysis of CEO Educational Level

	(1)	(2)	(3)	(4)
degree	0.029**	0.025**	0.020**	0.023***
	(2.01)	(2.45)	(2.34)	(2.65)
gender			0.027	0.057
			(0.49)	(1.00)
age			0.004**	-0.001
			(1.98)	(-0.25)
tenure			-0.001***	0.000
			(-2.80)	(0.47)
asset			0.390***	0.288***
			(22.90)	(9.97)
lev			0.107	0.223**
			(1.13)	(2.12)
roe			0.009***	0.005***
			(5.79)	(2.72)
state			0.058	0.174***
			(1.41)	(3.40)
size			0.377***	0.206**
			(5.68)	(2.57)
cons	14.063***	13.731***	4.847***	7.062***
	(213.12)	(263.86)	(13.53)	(11.13)
year	No	Yes	No	Yes
industry	No	Yes	No	Yes
N	2873	2873	2873	2873
r2		0.354		0.482
r2_a		0.352		0.479
F		32.651		78.503

¹ t statistics in parentheses, * p < 0.1, ** p < 0.05, *** p < 0.01

4.2.2. CEO professional background and audit fees

Table 4 lists the regression results of CEO's professional background and audit fees. Since the analysis process is similar to the previous analysis process, this hypothesis does not analyze the process in detail. When control variables are not added in columns 1 and 2, the regression results of CEO's professional background and audit fees is not significant. However, after adding control variables, in columns 3 and 4, CEO professional background (funback) has a significantly negative impact on audit fee (af) at the level of 1%. The adjusted R2 in column 4 reaches 0.480, which is better than the previous ones

Therefore, we should choose the regression result of column 4 to verify H2 in this paper, which is significantly negatively correlated with audit fee (af) at the level of 1%.

In summary, H1a is verified, which CEO professional background significantly reduces audit fees. due to CEOs who have mastered their profession have a deeper study of the technical aspects and the lack of attention and understanding of the audit fee leads to the selection of a lower fee firm in order to save costs.

4.2.3. CEO academic background and audit fees

Table 5 presents the regression results of CEO academic background and audit fees. In

column 1, the academic background of the CEO is negatively correlated with the audit fee (af). In column 2, the significance of adding the relevant industry and year effect is improved. However, after adding control variables, as shown in Columns 3 and 4, CEO academic background (academic) is significantly negatively correlated with audit fees (af) at the level of 1%, and the adjusted R2 is 0.483. So, we should choose the regression results of (4) to verify H3 in this paper. From Column 4, we can see that the regression coefficient of CEO academic

background (academic) is -0.108, which is significantly negatively correlated with audit fees (af) at the level of 1%.

To sum up, the H3 pass the verification that CEO academic background will significantly reduce audit fees. Because of CEO with relevant professional background consciously separate rights and responsibilities in the daily management, and corporate governance and financial standardization is relatively good, or their social status and their influence are higher, and their bargaining with the auditing firms is higher, so they can reduce the audit fee.

Table 4. Regression Results Analysis of CEO Professional Background

	(1)	(2)	(3)	(4)
funback	-0.054	-0.073**	-0.083***	-0.084***
	(-1.23)	(-2.03)	(-2.82)	(-2.90)
gender			0.048	0.056
			(0.74)	(0.97)
age			0.004*	0.000
			(1.74)	(0.05)
tenure			-0.001*	0.000
			(-1.83)	(0.66)
asset			0.404***	0.289***
			(17.87)	(10.23)
lev			0.179	0.211**
			(1.54)	(2.01)
roe			0.010***	0.005**
			(4.94)	(2.45)
state			0.185***	0.169***
			(3.27)	(3.16)
size			0.204**	0.211**
			(2.56)	(2.53)
_cons	14.193***	13.852***	4.514***	7.121***
	(381.99)	(465.69)	(9.40)	(11.40)
year	No	Yes	No	Yes
ind	No	Yes	No	Yes
N	2873	2873	2873	2873
r2		0.354	0.451	0.484
r2_a		0.352	0.449	0.480
F		32.711	91.621	76.982

4.2.4. CEO overseas background and audit fees
Since the analysis process is similar to the previous analysis process, this hypothesis does not analyze the process in detail. Table 6 shows the regression results of CEO's overseas background and audit fees. From Column 4, we can see that the regression coefficient of CEO's overseas background (oversea) is 0.161, which is significantly positively correlated with audit fee (af) at the level of 1%.

To sum up, our hypothesis H4a is verified, that CEO's overseas background will significantly

increase audit fees. because CEOs who work overseas or receive overseas education are affected in terms of value and decision-making preferences, and these effects will be reflected in their behave and thinking patterns when they return to their countries, and they tend to choose more aggressive business styles; in addition, overseas backgrounds may create the phenomenon of information asymmetry. Due to CEOs with overseas backgrounds the lack of interpersonal relationships and understanding of the domestic market, social development

and relevant levels of the industry. Thus, information barriers are created, which ultimately leads to higher audit costs.

Table 5. Regression Results Analysis of CEO Academic Background

	(1)	(2)	(3)	(4)
academic	-0.096*	-0.091**	-0.113***	-0.108***
	(-1.74)	(-2.13)	(-2.79)	(-2.83)
gender			0.037	0.046
			(0.58)	(0.81)
age			0.004	-0.000
			(1.57)	(-0.16)
tenure			-0.001*	0.000
			(-1.76)	(0.74)
asset			0.404***	0.290***
			(18.19)	(10.32)
lev			0.177	0.210**
			(1.55)	(2.05)
roe			0.009***	0.004**
			(4.88)	(2.36)
state			0.187***	0.171***
			(3.42)	(3.28)
size			0.210***	0.216***
			(2.72)	(2.67)
_cons	14.198***	13.854***	4.543***	7.146***
	(374.02)	(491.83)	(9.62)	(11.53)
Year ind	No No	Yes Yes	No No	Yes Yes
N	2873	2873	2873	2873
r2		0.356	0.454	0.486
r2_a		0.354	0.452	0.483
F		32.602	96.720	78.964

Table 6. Regression Results Analysis of CEO Overseas Background

	(1)	(2)	(3)	(4)
ovesea	0.242***	0.130**	0.161***	0.133**
	(3.86)	(1.98)	(3.07)	(2.52)
gender			0.062	0.068
			(1.09)	(1.35)
age			0.004	-0.000
			(1.59)	(-0.08)
tenure			-0.001**	0.000
			(-2.22)	(0.26)
asset			0.396***	0.285***
			(17.49)	(9.77)
lev			0.203*	0.231**
			(1.76)	(2.21)
roe			0.009***	0.004**
			(4.73)	(2.34)
state			0.193***	0.178***
			(3.52)	(3.46)
size			0.209***	0.215***
			(2.67)	(2.61)
_cons	14.158***	13.823***	4.662***	7.179***
	(384.58)	(441.59)	(9.71)	(11.19)
Year ind	No No	Yes Yes	No No	Yes Yes

N	2873	2873	2873	2873
r ²		0.355	0.452	0.483
r ² a		0.352	0.451	0.480
F		32.533	93.628	76.860

4.3 Result Analysis of Mediating Effect

Table 7 shows the analysis results of the interaction terms after adding internal control and CEO characteristics. Column (1) presents the results of the mediating effect of the CEO educational level (degree) on audit fees (af) among internal control quality. The coefficient of the interaction term (degree_icq) in the third row is 0.080, which is significantly positive at the level of 1%. Then hypothesis H5 is verified that internal control quality positively moderates the relationship between CEO's educational level and audit fees, which means that CEO's educational level has a positive impact on audit fees, and this positive impact is more obvious in companies with high internal control quality.

Column (2) shows the mediating effect of CEO professional background (funback) and audit fee (af) in internal control quality. After the introduction of internal control quality (icq), the effect of CEO's professional background and audit fees is negatively related, but their asymptotic is reduced and the interaction term is not shown to be significant. Then, hypothesis H6 is not tested.

Column (3) shows the mediating effect of CEO academic background (academic) and audit fee (af) in internal control quality. It can be observed in the table that it is the same as the professional background, adding the mediating effect of internal control quality (icq), the effect of CEO's academic background and audit fees is negatively related, but their asymptotic is reduced and the interaction term is not shown to be significant. Then, hypothesis H7 fails to pass.

Column (4) shows the regulatory effects of CEO's overseas background and audit cost (af) on the quality of internal control. After adding the mediating effect of internal control quality, the results show that the influence coefficient of the interaction term (ovesea_icq) between CEO's overseas background and internal control quality (icq) is 0.223, showing a significant positive correlation at the level of 10%, so H8 is established.

In conclusion, among the CEO personal characteristics, only the educational level and

overseas background have a significantly positive mediating effect on the relationship between internal control quality and audit fees, while the two characteristics of professional background and academic background have no significant promoting effect.

Table 7. Regression results for the Impact of Mediating Effects

	(1)	(2)	(3)	(4)
degree	-0.494***			
	(-7.85)			
degree_icq	0.080***			
	(8.25)			
funback		-0.352		
		(-0.67)		
funback_icq		0.041		
		(0.51)		
academic			-0.183	
			(-0.41)	
academic_icq			0.011	
			(0.16)	
ovesea				-1.315
				(-1.54)
ovesea_icq				0.223*
				(1.66)
year	Yes	Yes	Yes	Yes
ind	Yes	Yes	Yes	Yes
N	2873	2873	2873	2873
r ²	0.503	0.486	0.489	0.486
r ² a	0.5	0.482	0.485	0.482
F	79.544	72.79	75.887	73.393

5. Conclusions and Recommendations

5.1 Conclusions

Based on the analysis of the relationship between CEO characteristics and audit fees, this paper takes internal control quality as the intermediary variable and uses the data of listed companies from 2012 to 2022 for empirical analysis. The results indicate that the CEO's educational level and overseas background have a positive effect on audit fees; the CEO's professional background and academic background have an inverse effect on audit fees. For the influential relationship of mediating effect study, we found that internal control quality positively moderates the

relationship between CEO's academic level and overseas background with audit fee. Furthermore, the mediating effect of internal control quality between the CEO's professional and academic background with audit fees is not significant.

5.2 Recommendations

Based on the above research conclusions and combined with the current market situation, the following suggestions are put forward. For the CEO, we find that different CEO characteristics have different impacts on audit fees. Therefore, they need to develop themselves in an all-round way, broaden their thinking, expand their horizons, and further learn more knowledge, to better manage enterprises and make them develop faster and better. For the enterprise, they should improve the mechanism of CEO recruitment. Only by selecting talents with rich social experience, high educational background and professional technology, can they develop a good enterprise system and establish a good internal control environment, and eventually develops a virtuous circle, and the development is fast and steady. As for audit firms, the independence and impartiality of their external audits should be firmly safeguarded. Therefore, when auditing public companies, it is necessary to exclude the connection between the CEO and the audit firm. Not only the superficial relationship, but also the hidden relationship, to ensure its independence and impartiality to the greatest extent.

Acknowledgment

This work was supported in part by a grant from the school level scientific research projects of Guangzhou College of Commerce (The Impact of Climate Change on Stock

Returns of Marine Industry Companies, 2023XJYB21).

References

- [1] Chen, Y., Xiong, S., & Duan, T. (2023). Study of Financial Fraud Based on Crime Theory: An Example of YiHua Lifestyle Technology Co. Ltd. *Frontiers in Business, Economics and Management*, 9(3), 185-192.
- [2] Karpoff, J. M. (2021). The future of financial fraud. *Journal of Corporate Finance*, 66, 101694.
- [3] Li, X., Chen, X., Qi, B., & Tian, G. (2020). Employee quality and audit fee: evidence from China. *Accounting & Finance*, 60(5), 4533-4566.
- [4] Wang Y, Yin S. (2018). CEO educational background and acquisition targets selection. *Journal of Corporate Finance*, 52: 238-259.
- [5] Kallias, A., Kallias, K., Takamasa, I., & Zhang, S. (2023). One size does not fit all: The conditional role of CEO education on IPO performance. *Journal of Business Research*, 157, 113560.
- [6] Sharma D S, Anantha Narayanan U, Litt B. (2021). CEO compensation, corporate governance, and audit fees: Evidence from New Zealand. *International Journal of Auditing*, 25(1): 117-141.
- [7] Hsieh, T. S., Kim, J. B., Wang, R. R., & Wang, Z. (2020). Seeing is believing? Executives' facial trustworthiness, auditor tenure, and audit fees. *Journal of Accounting and Economics*, 69(1), 101260.
- [8] Kuang, Y. F., Lee, G., & Qin, B. (2021). Whistleblowing allegations, audit fees, and internal control deficiencies. *Contemporary Accounting Research*, 38(1), 32-62.