

Managers' Background Characteristics and Corporate Performance: Based on the Empirical Data of SME Listed Companies

Huiting Gong ¹, Yi Yang ²

¹ School of Economics and Management, Guangxi University of Science and Technology, Liuzhou 545006, China

² Research Center for Industrial and Urban Development of Western Region, Guangxi University of Science and Technology, Liuzhou 545006, China

Abstract. This paper aims to study the influence of managerial background characteristics on the corporate performance of Chinese SME board listed companies. Taking 399 Chinese SME board listed companies in 2013-2017 as a sample, the empirical finding shows that there is no significant relationship between managers' gender characteristics and corporate performance; managers' education level is significantly positively correlated with corporate performance; managers' age and corporate performance level are significantly positive related, the total number of managers' stock ownership is significantly positively correlated with corporate performance.

Keywords: managers' background characteristics; corporate performance; small and medium-sized enterprises (SMEs).

1. Introduction

In the era of knowledge economy, with the rapid development of information technology and Internet, managers, as decision makers of enterprise strategy, makers of company's future development direction and development plan, are the core of corporate governance structure, which play an increasingly role in corporate internal governance, management mode, internal control, investment direction and decision-making. In 1984, Hambrick & Mason put forward the "upper echelons theory". The upper echelons theory believes that because of the complexity and uncertainty of the internal and external environment of the enterprises, managers can only selectively observe all aspects, and it is impossible to have a comprehensive understanding, managers' personal knowledge and values determine their explanatory power for relevant information, namely managers' personal characteristics will affect their strategic choices, and then affect enterprise behaviors[1].

At present, scholars at home and abroad have carried out research on managers' background characteristics, corporate governance and investment decision-making, it is generally believed that managers' background characteristics (age, gender, education level, etc.) will affect their behaviors and decision-making, and managers' background characteristics and cash dividend policy, social responsibility, research and development investment and cost of debt financing has been studied accordingly.

As a reflection of the company's business performance, the company's performance will inevitably be affected by the personal influence of the incompletely rational managers. Based on this, this paper takes SMEs as the research objects, uses regression analysis method, and through a series of hypotheses, explores whether gender, education level, age and total number of managers' stock ownership in the managers' characteristic background will affect corporate performance, and studies the relationship between their background characteristics and corporate performance.

2. Literature Review and Research Hypothesis

(1) Managers' gender and corporate performance

Based on the data of 3939 private science and technology enterprises in Zhejiang Province, Zheng Jianzhuang (2004) studied the correlation relationship between the characteristics of private technology entrepreneurs and corporate performance, the results show that there is no significant

correlation between managers' gender and corporate performance. Based on the data of 642 micro-financial institutions from 2009 to 2014, Sun Xiuyuan (2016) studied the relationship of female managers affecting the performance of micro-financial institutions, the research results show that the higher the proportion of female managers, the better the financial performance of micro-financial institutions [3]. Huang Shishui(2018) takes 405 Vietnamese listed companies from 2011 to 2016 as the research samples, she found that male managers are negatively correlated with corporate performance through multiple regression analysis[4].

There may be a "glass ceiling" phenomenon in social activities, compared with female managers; male managers dare to undertake more risks and responsibilities, when face corporate strategic choices, male managers are more able to respond decisively, gather more strategic resources, improve their competitiveness, and then enhance enterprise value. Based on the above analysis, we propose hypothesis 1.

H1: managers' gender affects corporate performance.

(2) Manager's age and corporate performance

Wei Liqun (2002) believed that with regards to Chinese enterprises, there is a significant negative correlation between the age diversity of senior management team and corporate performance, namely the greater the age difference of senior team, the lower the corporate performance. This is because leaders at the same age have similar experiences, values or attitudes toward life, and they may have the same views on company, they are more likely to agree on a company's strategy or decision-making [5]. Starting from the perspective of financial, He Ying et al. (2015) proposed that young managers are more likely to choose debt financing because of overconfidence than older managers, thus significantly improving enterprise value [6].

Through summarizing the relevant literature, this paper believes that although Chinese enterprises are in the critical period of economic transformation, all aspects of society are encouraging innovative spirit, older managers may be less able to innovate and adapt to change than young managers in comparison with young managers, and older managers will have rich work experience. Managers at different ages have their own advantages, because the traditional Chinese is "relationship" society, the relationship network established by managers with others, other enterprises and government departments is the key to the success of enterprises, and therefore, this long-term social relationship will become an important magic weapon for managers to improve corporate performance. On the whole, the older managers will have a beneficial impact on corporate performance. Based on the above analysis, we propose hypothesis 2.

H2: Manager's age is positively correlated with corporate performance, namely the older the manager is; the higher the corporate performance is.

(3) Educational level of managers and corporate performance

Barker et al. (2002) found that managers with a good educational background have more advantages than other managers in the corporate business activities, managers use advanced management techniques and methods to run the company, thereby improving the corporate performance [7]. Zhao Weijun (2006) took five metallurgical enterprises in the south and central region as samples, and found that there was a significant positive correlation between managers' educational acceptance and administrative skills through hierarchical regression method, thereby improving managers' department performance [8]. Zhang Jianjun et al. (2007) studied the entrepreneurship background, diversification strategy and enterprise performance of private enterprises by using the "upper echelons theory", Finally, he found that high education level was positively correlated with enterprise performance indicators such as sales volume, asset growth rate and net asset growth rate, etc. [9]. Based on the empirical data of 1109 sample enterprises in China, He Ren et al. (2010) studied the relationship between managers' background and corporate performance from three aspects: managers' education background, job background and employment background. The research results show that managers' educational level is significant positive correlation with corporate performance, and mainly manifested in managers' long-term tenure stage [10]. Based on the empirical data of 134 GEM board listed companies, Lin Yong (2011) found that

there was a significant positive correlation between the general manager's academic background or professional background and corporate performance [11].

The upper echelons theory believes that formulation of corporate decision-making strategy will be affected by the educational level of managers to some extent, and then affect corporate performance. As everyone knows, educational background is an important indicator of individual social status and level status. Managers with higher educational level can obtain extensive social contacts. In addition, the improvement of educational level can improve managers' knowledge skills and management practice ability, thus enhancing the ability to analyze complex things, make managers seize the favorable opportunity of corporate operation, thus affecting corporate performance. Based on the above analysis, we propose hypothesis 3.

H3: Manager's educational level is positively correlated with corporate performance, namely the higher the manager's education level is; the higher the corporate performance is.

(4) Managers' stock ownership and corporate performance

In addition to managers' gender, educational background and age, managers' stock ownership is another important factor affecting corporate performance. Hermalin (1991) believes that managers' stock ownership is positively correlated with corporate performance. As a way of salary incentive for managers, managers' stock ownership makes managers to coexist with corporate interests, thus playing an incentive role for managers; managers will work hard to improve corporate performance [12].

Jensen and Mackling (1976) put forward the "interest exchange hypothesis", the higher the proportion of managers' stock ownership, the better the corporate performance, managers' stock ownership as the internal incentive mechanism of the company to solve the agency problem, thereby reducing the agency cost of the company [13]. Xu Dawei (2005) established a mathematical model to study 25 MBO enterprises in China, empirical results show that there is a non-linear cubic equation relationship between corporate performance and managers' stock ownership, the proportion of managers' stock ownership is 0-7.50%, and 33.75% or more has a significant positive correlation with corporate performance [14]. Dong Zhu (2019) takes Shanghai and Shenzhen A-share listed companies from 2011 to 2016 as samples, empirical research shows that there is a significant negative correlation between managers' stock ownership and corporate performance in companies with internal control defects, companies with better internal control system, the interests of company managers and owners converge, there is a positive correlation between managers' stock ownership and corporate performance.[15].

Economist Milton Friedman believes that the only social responsibility of managers is to maximize the corporate interests. Therefore, in order to reduce the principal-agent problem, when facing the objective conflict between the agent and the owner of the company, stock right will be used as an incentive, which make managers to become shareholders of the company and seek consistent interests of managers and owners. The more stock right managers have, in the long-term development of the company, managers are more inclined to safeguard the interests of the company and pursue maximum profits. Based on the above analysis, we propose hypothesis 4.

H4: The managers' stock ownership is positively correlated with corporate performance, namely the more managers' stock ownership, the higher corporate performance.

3. Research and Design

(1) Sample selection and data sources

This paper selects the non-financial enterprises listed on SME board from 2013 to 2017 as the initial research samples.

In order to pursue the reliability, completeness and accuracy of sample data, the following data are screened: (1) Listed companies with missing financial data are excluded; (2) Companies with ST or * ST processing excluded; (3) Financial listed companies are excluded. In addition, in order to control the influence of extreme values on regression results, the quantiles with continuous variables less than 1% and more than 99% were winsorized. Finally, this paper obtained 1993 valid research samples for

five consecutive years of 399 listed companies on SME Board. The financial data and managers' background data of listed companies in this paper come from CSMAR database and RESSET database, respectively. The data processing tools in this paper are EXCEL, SPSS 21.0 and Eviews 7.0.

(2) Definition of key variables

3.1 Explained Variable

In allusion to corporate performance indicators, domestic and foreign scholars not only use market indicators, such as Tobin Q value, stock return rate, but also use accounting indicators, such as ROE, ROA and EPS. On the basis of referring to relevant literature, this paper uses the experience of the research methods of Cen Wei and Tong Naqiong (2015), and adopts shareholder right return rate as measurement index of corporate performance: namely the ratio of after-tax profit to owner's right.

3.2 Explanatory Variables

The virtual variable GEND is used to classify managers' gender, when managers are male, GEND is 1 and female is 0, EDU is used to show managers' educational level, the value is 0 when educational level is below undergraduate level, bachelor degree is 1, master degree is 2, doctoral degree and above are 3 for; AGE represents managers' age; OWN represents managers' stock ownership.

3.3 Control Variables

Referring to relevant literature (Wei, 2012; Hoang, 2018;), this paper mainly uses the following corporate characteristics as control variables: company size (SIZE), debt level (LEV), company growth (GROWTH), interest guarantee multiple (IPM), stock rights concentration (FIRST), asset tangibility (PPE). The specific definitions of variables are listed in Table 1.

Table.1 list of variable definitions

variable name	variable symbol	variable description
Rate of Return on Common Stockholders' Equity	ROE	ROE = after-tax profit / owner's equity
managers' gender	GEND	male managers take 1, female managers take 0
managers' educational level	EDU	below undergraduate takes 0, undergraduate takes 1, master's degree takes 2, doctoral degree and above doctoral degree take 3
managers' age	AGE	actual age of managers at the end of the year
managers' shareholdings	OWN	managers' total shareholdings
company size	SIZE	natural logarithm of total assets
debt paying ability	LEV	Total liabilities/assets
company growth	GROWTH	(operating income in those years- operating income in last year)/operating income in last year
interest coverage ratio	IPM	Earnings Before Interest and Tax / interest expense
concentration of stock right	FIRST	shareholding ratio of the largest shareholder
tangibility of assets	PPE	(stock + fixed assets)/total assets

(3) Research model

In order to test the research hypothesis of the relationship between managers' background characteristics and corporate performance, this paper constructs the following multiple regression model.

$$ROE = \partial_0 + \partial_1 \times GEND + \partial_2 \times EDU + \partial_3 \times AGE + \partial_4 \times OWN + Control + \varepsilon_{i,t}$$

Among them, ROE represents corporate performance, and as dependent variable, Control represents all control variables in Table 1. This model is used to carry out regression for the whole sample and validate H1-H4, namely examines the impact of managers' background characteristics (gender, educational level, age, managers' company shareholding) on corporate performance.

4. Empirical Results and Analysis

(1) Descriptive statistics

Table.2 descriptive statistics

	observed value	minimum value	maximum value	average value	standard deviation
GEND	1993	0	1	0.95	0.215
EDU	1993	0	3	1.35	0.877
AGE	1993	27	79	53.37	7.671
OWN	1993	0	1951811430	78310784.51	160161628.259
ROE	1993	-1.9064	8.2794	0.0629	0.1902
SIZE	1993	18.5239	25.9793	21.9317	0.9075
LEV	1993	0.0079	2.8610	0.3817	0.1947
GROWTH	1993	-0.9149	23.9983	0.2273	0.7816
IPM	1993	-509.56	42909.32	93.35	1524.83
FIRST	1993	4.1456	81.1752	33.2729	14.2280
PPE	1993	0.0010	0.9480	.3541720396	0.1594

First, the descriptive statistical results of all sample-related variables involved in the multivariate regression model in this paper are presented by using the data of SME Board from 2013 to 2017. From the descriptive statistical results of the whole sample in Table 2, we can see that the minimum value of corporate performance in the sample is -1.906, the maximum value is 8.2794, while the mean value is only 0.0629, it shows that under the current system background in China, the development of SME listed companies is unbalanced, there are great differences in corporate performance among different companies, the mean value of managers' gender characteristics reaches 95%, it shows that male managers occupy an absolute advantage in SME listed companies, and most managers are male, it also reflects the serious imbalance between men and women in enterprise management in our country, in the characteristics of managers' age, the minimum value is 27, the maximum value is 79, and the mean value is 53.27, it shows that the managers of enterprises in our country are older, and there may be "by way of seniority" phenomenon. The mean value of managers' educational level is 1.35, managers' educational level has not reached a high level, and it is between undergraduate and postgraduate education. However, in the process of collecting data, we found that some managers realized the importance of education and knowledge, and began to improve their educational level, such as studying MBA or EMBA, the minimum value of managers' shareholding is 0, and it shows that some managers did not get the equity incentive policy of the company.

(2) Correlation analysis

Table.3 Pearson correlation analysis of variables

	ROE	GEND	EDU	AGE	OWN	SIZE	LEV	GROWTH	IPM	FIRST	PPE
ROE	1										
GEND	-0.014	1									
EDU	0.050**	0.005	1								
AGE	0.023***	0.106***	-0.158***	1							
OWN	0.030***	-0.009	0.014	-0.005	1						
SIZE	0.103***	0.020	0.082***	0.033	0.324***	1					
LEV	-0.033	0.052**	0.048**	-0.056**	0.034	0.382***	1				
GROWTH	0.144***	0.020	0.048**	-0.028	0.022	0.119***	0.074***	1			
IPM	0.025	0.010	0.008	-0.002	-0.008	-0.027	-0.055**	0.003	1		
FIRST	0.032	-0.094***	-0.036	-0.015	0.026	0.079***	0.051**	-0.015	-0.010	1	
PPE	-0.104**	0.014	-0.081***	0.080***	-0.104***	-0.085***	0.125***	-0.127***	-0.048**	0.118***	1

Note: *, **, *** represent significant at the 10%, 5%, and 1% levels, respectively.

SPSS 21.0 is used to analyze the correlation of variables, and the results are shown in table 3. It can be seen from Table 3 that the Pearson correlation coefficients of the main variables are lower than 0.4, it shows that there is no multicollinearity among the variables. It can be seen from the correlation test that the managers' gender characteristics of managers in the subordinate dimension of managers' background are negatively correlated with corporate performance, the coefficient is -0.014, but not outstanding, hypothesis 1 has not been preliminarily verified, managers' education level and corporate performance are positively correlated, the coefficient is 0.05, $P < 0.05$, H2 has been preliminarily confirmed, the correlation between managers' age and corporate performance is negative, the coefficient is 0.023, $P < 0.1$, H3 has been initially confirmed; the correlation between managers' shareholding and corporate performance is positive, the coefficient is 0.030, $P < 0.1$, and H4 has been initially confirmed. Through the analysis of these conclusions, we can preliminarily obtain managers' background characteristics, such as gender, educational level, age; shareholdings are related with corporate performance. Moreover, if the size of the company is larger, the growth of the company is higher; the greater the multiple of interest protection, the better the concentration of equity; the lower the tangibility of assets, the better the corporate performance.

(3) Regression analysis

Table.4 managers' background characteristics and corporate performance (total sample)

	(1)	(2)	(3)	(4)
Gend	-0.0202			
	-7.4429			
EDU		0.0080***		
		11.0252		
AGE			0.0003***	
			4.6534	
OWN				0.00000001**
				2.9301
SIVE	0.0052***	0.0038***	0.0036***	0.0040***
	27.6883	25.1086	15.8778	35.6121
LEV	-0.0606***	-0.0632***	-0.0546***	-0.0529***
	-15.8775	-17.5100	-13.6383	-14.9088
GROWTH	0.03082***	0.0330***	0.03428***	0.0293***
	16.9787	18.7840	21.2275	16.2591
IPM	0.000027**	0.000021**	0.000026**	0.000025***
	2.4719	1.9761	2.3779	2.2586
FIRST	0.0006***	0.0006***	0.0006***	0.0006***
	23.4853	12.1961	15.0124	25.2652
PPE	-0.1206***	-0.1076***	-0.1305***	-0.1180***
	-32.3225	-24.6619	-39.1516	-32.0381
N	1993	1993	1993	1993
Adj-R2	0.7393	0.5038	0.7785	0.7478

Note: *, ** and *** represent significant at the levels of 10%, 5% and 1%, respectively.

The SME listed companies from 2013 to 2017 as research samples, this paper empirically studies the relationship between managers' background characteristics and corporate performance, the regression results are shown in Table 4.

It can be seen from the regression results in Table 6 that the relationship between managers' background characteristics and corporate performance is empirically tested by multiple regression model, we find that male managers are negatively correlated with corporate performance, but not significant. The reason may be that as our country's economic and market system continuously develop, women managers are more and more recognized and valued by companies, women managers are more likely to have higher corporate performance because of their hard work and unique sense of prudence. Compared with female managers, male managers may have relatively low or even negative correlation in the sample companies because they are unconventional and vigorous. Hypothesis 1 is not confirmed.

Manager's educational level is positively correlated with corporate performance at the 1% significance level, the higher the manager's educational level, the more knowledge theory managers accumulate, when facing the problem of corporate governance, they can think systematically and logically through professional theory, and constantly improve the performance level of company, namely the higher the manager's educational level, the higher the corporate performance, the managers' age is positively correlated with corporate performance at 1% significance level, it shows that the older managers are, they can play a more positive role in promoting the operation of the company, namely the older managers are, the higher corporate performance; managers' shareholding is positively correlated with corporate performance at 1% significance level, the higher the proportion of managers' shareholding, the easier it is to collect the interests of shareholders, thus reducing agency costs and improving corporate performance, namely the more managerial shareholding, the higher corporate performance.

In addition to the influence of managers' background characteristics on corporate performance, other control variables, for example, coefficients of company size, company growth, interest guarantee multiple and equity concentration are positive, it shows that the larger the company size,

the stronger the company growth, the higher the interest guarantee multiple, the more concentrated the equity, the higher the corporate performance. Debt paying ability and tangibility coefficient of assets are negative, the lower the debt paying ability, the lower the tangibility of assets and the higher the corporate performance.

5. Research Conclusion and Enlightenment

This paper uses Hambrick & Mason's "upper echelons theory", takes the 1993 valid data of 399 SME listed companies from 2013 to 2017 as samples, and discusses the relationship between managers' background characteristics and corporate performance from managers' background characteristics, such as managers' gender, educational level, age and managers' shareholding. Empirical results show that there is no significant relationship between managers' gender and corporate performance; managers' educational level is positively correlated with corporate performance, namely the higher managers' educational level, the better corporate performance; managers' age is positively correlated with corporate performance; the older managers' age is, the higher corporate performance; managers' equity is positively correlated with corporate performance; the more managers' equity, the higher corporate performance.

This paper strengthens the research of managers' background characteristics on corporate performance; it expands the spatial scope of influencing factors of corporate governance to a certain extent, which has a certain reference value for the governance of SME board enterprises. However, the nature of property rights is not taken into account in this paper, and managers' gender characteristics have no significant impact on corporate performance, further research and verification are needed in the future.

Acknowledgements

Foundation project: National Natural Science Foundation of China (NSFC) project "Research on Identification Willingness, Identification Technology and Economic Consequences of Accounting Information Quality in the Allocation of Credit Resources" (Project Number. 71462004);

Foundation for Key Research Bases of Humanities and Social Sciences in Guangxi Universities (Guangxi Education Standard [2015] No. 4);

Master's Innovative Project of Guangxi University of Science and Technology "Research on Financing Constraints of Small and Medium-sized Enterprises from the Perspective of Green Finance: Based on Bayesian Statistical Econometric Model", (Project Number: GKYC201714).

References

- [1]. Hambrick D C, Mason P A. Upper Echelons: The Organization as a Reflection of Its Top Managers[J]. *Academy of Management Review*, 1984, 9(2).
- [2]. Zheng Jian-zhuang. Entrepreneur's Personality and Performance of Private Scientific and Technological Enterprises: Based on the Survey of 3937 Private Technology Enterprises in Zhejiang Province[J]. *China Business and Market*, 2004 (3): 36-39.
- [3]. Sun Xiuyuan, He Guangwen. Research on the Impact of Female Managers on the Performance of Microfinance Institutions[J]. *Finance and Economics*, 2016(03): 47-53.
- [4]. Huang Shishui. Managers' Background Characteristics and Corporate Performance: Empirical Study from Vietnamese Listed Companies[J]. *China Journal of Commerce*, 2018 (24): 167-171.
- [5]. Wei Liqun, Wang Zhizhi. Empirical Study on the Relationship between Characteristics of TMTs and Firm Performance of Chinese Businesses[J]. *Nankai Business Review*, 2002 (04): 16-22.
- [6]. He Ying, Zhang Dawei. Managers' Traits, Debt Financing and Enterprise Value[J]. *Accounting Research*, 2015 (08): 65-72+97.

- [7]. Barker VL, MULLER GC. CEO Characteristics and Firm R&D Spending[J]. *Management Science*, 2002.48(6):782-801.
- [8]. Zhao Weijun. 2006. Personal Attributes, Management Competence and Department's Performance for Governor[J]. *Journal of Zhuzhou Institute of Technology*, 2006(6): 119-124.
- [9]. Zhang Jianjun, Li Hongwei. Entrepreneur Backgrounds, Diversification, and Firm Performance[J]. *Nankai Business Review*, 2007(5): 12-25.
- [10]. He Ren, Wang Weicheng, Wang Jun. Background of Manager and Firm Performance: An Empirical Study in China[J]. *Finance and Trade Research*, 2010, 21 (01): 109-118.
- [11]. Lin Yong, Zhou Yanqiao. Education of Executives and Their Corporate Performance—Based on Empirical Data from GEM[J]. *Journal of Central South University (Social Science)*, 2011, 17 (05): 60-65.
- [12]. Hermalin B.E. Weisbach M.S. The Effects of Board Composition and Firm Performance in High R&S Firm.1991,20(4).
- [13]. Jensen. M., Meckling. W., Theory of The Firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics*[J].1976(3):305-360.
- [14]. Xu Dawei, Cai Rui, Xu Minglei. An Empirical Analysis on Managerial Stockholding Level and Corporate Performance—Based on MBO of Listed Company in China[J]. *Management Science*, 2005 (04): 40-47.
- [15]. Dong Zhu, Ma Pengfei. Managerial Ownership: Entrenchment or Convergence-of-Interest—Based on the Decisive Effect of Internal Control[J]. *Journal of Xi'an Jiaotong University*, 2019:1-10.