



# Research on the influence of Executives ' Academic Background on Corporate Social Responsibility Performance-the Mediating Effect of Corporate R & D Investment

Mengrong Zhang

Dalian Polytechnic University, Dalian, China

18742060240@163.com

**Abstract.** In recent years, the performance of corporate social responsibility has attracted more and more attention from all walks of life. By using stata software, this paper analyzes the score of corporate social responsibility report, studies the relationship between the academic background of senior management team and the performance of corporate social responsibility, and on this basis, adds enterprise R & D investment as the intermediary variable between the two. The empirical results show that the more the number of executives with academic background, the better the performance of corporate social responsibility ; the more the number of executives with academic background, the more R & D investment ; corporate R & D investment plays a partial intermediary role between the academic background of executives and the fulfillment of corporate social responsibility. In this way, it provides ideas for listed companies to fulfill their social responsibilities.

**Keywords:** Social Responsibility Fulfillment, R&D Investment, Executive Academic Background.

## 1 Introduction

The success and failure of an enterprise is closely related to the members of the senior management team of the enterprise. As the main body of enterprise strategic choice and decision-making, the background of the senior management team has an important impact on the strategic development and operation of the enterprise. In the study of the relationship between the academic background of executives and the social responsibility of enterprises, scholars have conducted research based on the background of the senior management team and the background of overseas returnees, and found that there are inextricably linked between the background of executives and corporate social responsibility. Starting from the academic background of enterprise executives, this paper studies its role in the fulfillment of corporate social responsibility, and on this basis, adds the intermediary variable of enterprise R & D investment, enterprise R & D investment.

© The Author(s) 2024

T. Ramayah et al. (eds.), *Proceedings of the 2024 International Conference on Applied Economics, Management Science and Social Development (AEMSS 2024)*,

Advances in Economics, Business and Management Research 284,

[https://doi.org/10.2991/978-2-38476-257-6\\_13](https://doi.org/10.2991/978-2-38476-257-6_13)

## 2 Theoretical analysis and research hypothesis

Bowen clearly defined corporate social responsibility as the operator 's obligation to formulate policies, make decisions and take actions based on social standards and values <sup>[1]</sup>. From the above definition, it can be seen that the team background and values of executives are closely related to the fulfillment of corporate social responsibility. Zahm S A (1989) found that the development of an appropriate mix of director characteristics and a robust board decision-making process is a key determinant of CSR<sup>[2]</sup>. Chin M K (2013) noted that the political ideology of CEOs will influence their company's corporate social responsibility practices<sup>[3]</sup>. Hassan (2020) found that the diversity of board members has significantly improved the disclosure of CSR information<sup>[4]</sup>. Cao Y (2020) pointed out that academic executives can improve the level of corporate social responsibility <sup>[5]</sup>. Li T (2023) proposed that executive characteristics have different effects on social responsibility in different life cycle stages <sup>[6]</sup>. Xu D et al. (2023) found that executives ' academic experience has improved the level of corporate environmental performance <sup>[7]</sup>. Based on the above analysis, hypothesis 1 is proposed:

H1: The more the number of executives with academic background, the better the performance of corporate social responsibility.

As the main body of enterprise management and strategic decision-making, the background and composition of top management team play an important role in the development and strategic deployment of enterprises. The top management team with relevant academic background can rationally predict future risks in decision-making and promote more investment in innovation and R & D <sup>[8]</sup>. Top management teams with relevant professional development backgrounds pay more attention to how to choose R & D investment and identify the efficiency of R & D investment <sup>[9]</sup>. Learning experience in the field of R & D is also conducive to executives to obtain relevant knowledge and resources, and enhance the risk-taking ability of enterprises <sup>[10]</sup>. Based on the above analysis, hypothesis 2 is proposed:

H2: The more the number of executives with academic background, the more R & D investment.

The current scientific research researchers are studying from the perspective of the relationship between corporate R & D investment and corporate social responsibility, such as the performance of corporate social responsibility will promote the level of corporate R & D investment and promote the sustainable operation of enterprises <sup>[11]</sup>, corporate social responsibility is positively promoting corporate R & D investment <sup>[12]</sup> and so on. Based on this, this paper adds the intermediary variable R & D investment on the basis of studying the relationship between the academic background of executives and the performance of corporate social responsibility, and explores the relationship between the three. Hypothesis 3 is therefore proposed:

H3: Corporate R & D investment is a mediating variable between the academic background of executives and the fulfillment of corporate social responsibility.

### 3 Research design

#### 3.1 Sample selection and data sources

The main data of this paper is from the social responsibility report of A-share listed companies in Hexun.com from 2010 to 2020. The total score of social responsibility report is divided into the initial research sample, and the initial data is processed. Firstly, the samples with missing main variables are eliminated, and then Winsorize processing is performed on all continuous variables at 1 % and 99 % levels.

#### 3.2 Definition of selected variables

The explanatory variable of this paper is corporate social responsibility (CSRscore), which is measured by the final score of corporate social responsibility report disclosed by Hexun.com. The higher the score, the better the performance. The explanatory variable is the academic background of executives (Knowback). The article uses the number of people with academic background in the executive team to measure. The mediating variable is the enterprise R & D investment (In \_ Rd), which is measured by the logarithm of the ratio of the company 's R & D expenditure to operating income. The control variables are: enterprise size (In \_ Size), ownership concentration (TOP), operating income growth rate (Growth), board independence (INDE).

#### 3.3 Model design

According to the above research hypothesis, the following regression model is constructed:

$$CSRscore_{i,t} = \alpha_0 + \alpha_1 Knowback_{i,t} + \alpha_2 \Sigma Controls_{i,t} + Industry + Year + \varepsilon_0 \quad (1)$$

$$In\_Rd_{i,t} = \beta_0 + \beta_1 Knowback_{i,t} + \beta_2 \Sigma Controls_{i,t} + Industry + Year + \varepsilon_1 \quad (2)$$

$$CSRscore = \gamma_0 + \gamma_1 Knowback_{i,t} + \gamma_2 In\_Rd_{i,t} + \gamma_3 \Sigma Controls_{i,t} + Industry + Year + \varepsilon_2 \quad (3)$$

## 4 Research analysis process and results

#### 4.1 Regression analysis

Table 1 is the regression result. It can be seen from Column (1) that CSRscore and Knowback are significant at the 1 % significance level, and the correlation coefficient between the two is positive, indicating that with the increase of the number of members with academic background of senior executives, the fulfillment of corporate social responsibility increases. From column (2), it can be seen that Knowback and In \_ Rd are related at a significant level of 1 %, and the coefficient is positive, indicating that the

increase in the academic background of senior executives will promote the R & D investment of enterprises, which also verifies model 2. The increase of R & D investment in enterprises also affects the performance of corporate social responsibility. Taking R & D investment as an intermediary variable, it is added to the academic background of executives and the performance of corporate social responsibility to test model 3. Column (3) shows that Knowback can improve CSRscore by increasing ln\_Rd.

**Table 1.** Regression analysis results

VARIABLES	(1) CSRscore	(2) ln_Rd	(1) CSRscore
Knowback	0.175*** (2.76)	0.059*** (12.58)	0.129** (2.02)
In_Rd			0.810*** (5.50)
In_Size	2.962*** (18.97)	0.716*** (62.08)	2.398*** (12.86)
Top	9.651*** (9.18)	-0.666*** (-8.58)	10.210*** (9.68)
Growth	186.632*** (4.46)	13.610*** (4.41)	175.288*** (4.19)
INDE	-8.196*** (-2.94)	0.644*** (3.13)	-8.645*** (-3.11)
Constant	-41.363*** (-11.60)	1.804*** (6.85)	-43.212*** (-12.08)
Observations	8,929	8,929	8,929
R-squared	0.058	0.323	0.061

Note: t statistics in parentheses\*P<0.1, \*\*P<0.05, \*\*\*P<0.01.

#### 4.2 Robustness test

Considering that the test results of the above research may be affected by the measurement error of the explanatory variables, in order to test the robustness of the research results, the proportion of the number of senior executives with academic background is selected as the substitution variable of the academic background of senior executives, and the model is tested again. The results show that there is still a positive and significant relationship between the academic background of executives and the fulfillment of corporate social responsibility, which verifies the stability of the conclusions of this study. The results are shown in Table 2.

**Table 2.** Robustness test

VARIABLES	(1) CSRscore	(2) ln_Rd	(3) CSRscore
ln_Kb	2.867** (2.33)	1.199*** (13.19)	1.902 (1.53) 0.818*** (5.55)
ln_Size	3.016*** (19.34)	0.735*** (63.94)	2.431*** (12.93)
Top	9.599*** (9.13)	-0.684*** (-8.82)	10.178*** (9.65)
Growth	186.479*** (4.46)	13.359*** (4.33)	175.240*** (4.19)
INDE	-8.749*** (-3.14)	0.444** (2.16)	-9.042*** (-3.25)
Constant	-42.245*** (-11.76)	1.424*** (5.37)	-43.805*** (-12.17)
Observations	8,929	8,929	8,929
R-squared	0.058	0.324	0.061

Note: t statistics in parentheses \*P<0.1, \*\*P<0.05, \*\*\*P<0.01.

## 5 Conclusion

Based on the above research, the main conclusions are as follows: First of all, executive academic background has a positive impact on corporate social responsibility performance. When the number of executive academic background increases, the performance of corporate social responsibility will also be better. Secondly, the academic background of executives has a positive impact on corporate R & D investment. Finally, the academic background of executives can improve the level of corporate social responsibility by increasing corporate R & D investment.

Finally, this paper also has the following two shortcomings: (1) The data in this paper comes from the Hexun.com corporate social responsibility score, and uses the score report to measure the performance of corporate social responsibility, and the sample size of the research test is limited. (2) This paper only considers the factors at the level of enterprises and executives, without considering the impact of industry factors, other control variables and other factors on the fulfillment of corporate social responsibility, which need to be further discussed.

## References

1. Bowen, H.R. Social responsibilities of the businessman. Iowa: University of Iowa Press. 2013, 24 (09): 45-62.
2. Zahm S A. Boards of directors and corporate social responsibility performance[J]. European Management Journal, 1989, 7(2): 240-247.
3. Chin M K, Hambrick D C, Treviño L K. Political ideologies of CEOs: The influence of executives' values on corporate social responsibility[J]. Administrative science quarterly, 2013, 58(2): 197-232.
4. Hassan, Lily Suriana, Norman Mohd Saleh, and Izani Ibrahim. "Board diversity, company's financial performance and corporate social responsibility information disclosure in Malaysia." International Business Education Journal 13.1 (2020): 23-49.
5. Cao Y, Guo T. Executive academic experience and corporate social responsibility [J]. Accounting and economic research, 2020,34 (02): 22-42.
6. Li T. Research on the Influence of Executive Characteristics on Corporate Social Responsibility - Based on the Life Cycle Perspective [J].Journal of Longdong University, 2023,34 ( 03 ): 97-103.
7. Xu D, Zhang W. Executives ' academic experience and corporate environmental performance [J].East China Economic Management, 2023,37 ( 08 ) : 119-128.
8. Yuan Z, Wang P, Fu Y. Does the academic experience of executives affect corporate R & D manipulation ? [J]. Foreign Economy and Management, 2002,42 (08), 109-122.
9. Wang Y, Meng F. Academic background of executives, financing constraints and corporate financialization [J].Journal of Inner Mongolia Agricultural University (Social Science Edition), 2021,23 (03) : 48-55.
10. Zhao S, Wang S, Chen X. Executives ' academic experience, enterprise heterogeneity and enterprise innovation. [J]. Modern Finance and Economics (Journal of Tianjin University of Finance and Economics ), (2019), 39 (05): 73-89.
11. Zhang Y, Xu C, Zhou X. nSocial responsibility, R & D investment and enterprise continuous operation-based on mediating effect and panel quantile regression. [J].Journal of Tianjin Vocational College of Commerce, (2021), 9 (01) : 59-67.
12. Zhang L, Shi X, Zhou C. Research on the impact of corporate social responsibility on R & D investment in manufacturing industry-based on the moderating effect of background characteristics of senior management team. [J]. Friends of Accounting, (2020), 4 (09): 75-84.

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

