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# Managerial education and corporate social responsibility in Taiwan

管理層教育程度與企業社會責任-以台灣為例

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**Abstract**

Corporate social responsibility (CSR) activity can improve and promote the relationship between organizations and stakeholders. However, it can also deplete limited enterprise resources. High-educated managers can meet the needs of stakeholders through efficient policy implementation. However, they may also make wrong judgments because of overconfidence or hubris, which have a negative impact on the company. Taking the CSR Citizenship Award winners as a sample, this study shows that the higher that the proportion of high-educated managers, the better the CSR performance. Additionally, positive relationship exists between the proportion of high-educated managers and the cumulative abnormal returns declared to be awarded.

**Keywords :** Corporate social responsibility · Managerial education · Organizational legitimacy · Wealth effect · Cumulative abnormal returns.

**摘要**

企業社會責任（CSR）活動可以改善和促進組織與利益相關者之間的關係。但是，它也可能耗盡有限的企業資源。高學歷的管理人員可以通過有效的政策實施滿足利益相關者的需求。然而，由於過度自信或傲慢，他們也可能做出錯誤的判斷，這會對公司產生負面影響。本研究以企業社會責任公民獎獲獎者為樣本，實證結果發現高學歷管理者的比例越高，企業社會責任績效越好。

關鍵字:企業社會責任，管理層教育程度，組織合法性，過度自信，利害關係人

## 1. Introduction

In theory, According to the theory of organizational legitimacy, for organizations to survive in a severe environment they must continue to develop their business activities. In this way, managers provide persuasive reasons for shareholders to protect their interests. Therefore, legitimacy can be defined as a kind of cognition of motions those organizations to improve their reputations of enterprises and take various socially beneficial activities and legal mechanisms in accordance with social norms or social values (Davis and Mizruchi,

1997; Long and Driscdl, 2008). Implementing Corporate social responsibility (CSR) not only helps the organization continue to operate but also maintain a good enterprise reputation while protecting the interests of shareholders. Therefore, CSR conforms to the essence of organizational legitimacy.

## 2. Literature review and hypothesis development

In practice, the concept of global citizenship requires enterprises to invest and get impetus to corporate social responsibility. Taiwanese enterprises with foreign trade as the main objective of sustainable operation must also promote CSR. Such enterprises seek to incorporate the spirit of CSR into all levels of operation and translate it into practical action. Through CSR activity, the relationship between organizations and stakeholders can be improved and consolidated, and the enterprise's competitive advantage can be increased (Brown and Dacin, 1997; Turban and Greening, 1997; Husted and Allen, 2007; Russo and Futs, 1997). Enterprises may also take a wait-and-see strategy. Certain managers believe that the immediate enterprise change and cost increase brought by CSR will affect product development and reduce the pressure of competitiveness. In the initial stage of CSR development, when there are doubts regarding the stability of such system and the effectiveness of persistence, it may not maximize the of interests shareholders. Rather, they would keep a wait-and-see attitude instead of following a policy of social innovation while maintaining the present situation (Child and Tsai, 2005; Hoskisson, Eden, Lau, and Wright, 2000; Hoffman, 1999). Arya and Zhang (2009) found that stock returns of firms with earlier CSR activities are less than those of firms with later CSR activities in South African.

Through the recognition of the value of CSR and its implementation, the relationship between enterprises and their stakeholders become more closely integrated. This closer integration helps the enterprise develop, including through internal product innovation, production technology, human resources, corporate reputation and organizational culture (Surroca, Tribo, and Waddock, 2010) and through external improvement and promotion of the relationship between organizations and customers, employees and communities. Therefore, CSR not only produces competitive advantages but also creates social wealth (e.g., Brown and Dacin, 1997; Turban and Greening, 1997). The managerial competence of a well-organized the interests of stakeholders represents a type of internal resource for an enterprise. Such managerial competence can generate opportunities for the organization to create value and enhance its competitive advantage (Husted and Allen, 2007; Russo and Fouts, 1997). In terms of organizational efficiency, managerial psychological traits have significant influence (Lubinski and Humphrey, 1997; Parker and Fischoff, 2005). Cognitive ability and emotional intelligence are related to decision-making quality, while

educational level as a proxy variable of psychological traits has substantial influence on enterprise investment or risk tolerance in general decision-making (Laderman, 1994; Donkers et al. 2001; Fank and Goyal, 2007). Certo (2003) argues that a highly educated and experienced board of supervisors can enhance the reputation of the board of directors and ensure the legitimacy of an organization. Higher-educated managers are more efficient in meeting stakeholder needs of when implementing CSR and help transmit CSR-related information quickly and accurately within the enterprise while effectively implementing and reorganizing organizational procedures (Baum and Wally, 2003; Henderson and Cockburn, 1994). Thereby, they enhance the company's value and increase stock price returns. Bhagat et al. (2001) empirically demonstrate that the stock market reaction of highly educated managers to announcements of major corporate events can generate excess returns, while Falat et al. (2015) propose that the announcement of new highly educated CEOs can bring excess returns to enterprises.

High education also expresses an important psychological trait: self-confidence and pride (Hayward and Hambrick，1997; Hiller and Hambrick，2005). For example, Ben-David et al. (2013) observe that the manager can misjudge the future financial planning of the enterprise because of the overconfidence generated by a high level of education. Huang et al. (2011) and Wang et al. (2016) conclude that overconfidence caused by the education level of manager resulted in overinvestment. Beber and Fabbri (2012) found that in the foreign exchange market CEOs with a managerial education background are overconfident and more risk-tolerant.

The educational level of managers has a significant impact on the premium mode of acquisition and innovation activities (Hayward and Hambrick, 1997; Tang, Li, and Yang, 2012). Tang et al. (2015) note that due to a CEO's overestimation of his ability and strong sense of self-sufficiency arrogant managers underestimated the degree of their company's dependence on stakeholders, resulting in low participation in social responsibility activities. As a result, the CEO's discriminatory attitude toward CSR (i.e., hubris) had a negative impact on the enterprise's CSR activities.

Based on these findings from these literatures, it can be deduced that managerial mentality has a significant impact on investment in CSR activities and the market share price reaction to CSR results. However, there is no unanimous agreement on the positive or negative effects of the managerial mentality. Therefore, this study attempts to establish the following two empirical hypotheses with education as a proxy variable of mentality.

**$H_{1A}$:** Based on organizational legitimacy, the educational level of managers has a positive impact on corporate social responsibility performance.

**$H_{1B}$:** Based on overconfidence, the educational level of managers has a negative impact on corporate social

responsibility performance.

**$H_{2A}$:** High-educated managers have a positive impact on the wealth effect of a company's award announcement.

**$H_{2B}$:** High-educated managers have a negative impact on the wealth effect of a company's award announcement.

To test the two hypotheses, 71 enterprises that received the CSR Award, announced by CommonWealth magazine on August 29, 2018 were selected as sample. To estimate the relationships between the educational level of managers and the achievement of a CSR award, the cumulative returns CAR1 (-1, 0) and the wealth effect of the cumulative abnormal returns CAR2 (-1, 0) calculated on the day before and the day of the announcement.

First, this study examines whether there are significant differences in the mean value of CSR performance and cumulative returns between higher-educated and lower-educated managers by using single variables. Further, such as Godfrey et al. (2009), I consider the influence of other factors (i.e., asset size, revenue size, CSR performance) as well as corporate governance variables, board size and independent director's size which can be regarded as a basic factor for monitoring and controlling management (Jensen and Meckling, 1976; Jensen, 1986; Stulz, 1990 Waddock and Graves, 1997). Whether the tenure enhances and maintains the reputation of managers or is rigid and corrupt will affect the dynamics of management CSR (Deckop, 2006) and can be regarded as a quality agent variable of educational level (Jian and Lee, 2011; Tang et al. 2015). Therefore, these three variables are included among the explanatory variables. Managerial education has a positive effect on corporate social responsibility performance and the excess returns announced by CSR award winners. The higher educational level is, the higher the cumulative abnormal returns. Additionally, the excess cumulative returns estimated by CAPM, 3-factor, 4-factor and 5-factor models extend to the one-day cumulative abnormal returns before and after the event. Moreover, and whether the five-year achievements of CSR have different effects, the impact of educational level on the cumulative abnormal returns is positive and significant, which robust this conclusion.

The main contributions of this study are as follows.

1. The literature on the impact of management psychological characteristics or educational background on CSR performance (Slater, 2009; Manner, 2010; Wong et al., 2011) has not taken Taiwan enterprises as samples. In the case of Taiwan, corporate governance and shareholder protection are relatively weak (Huang and Shiu, 2009). Therefore, the conclusions of this study can be used to transmit information regarding Taiwanese business performance and governance capability is to the outside world.

2. Previous literatures have mostly discussed whether the excess returns generated by the announcement of a CSR award is positive or negative (Davidson and Worrell, 1992; Waddock and Graves, 1997) or whether it is related to corporate financial performance or risk management (Margolis and Walsh, 2001; Mc Williams and Siegel, 2001; Konar and Cohen, 2001, Chen, Shiu and Chang, 2015). This study first proposes explaining this excess returns based on the educational level of managers. Thus, it provides a new direction for discussion by linking the economic benefits of the educational level of the management with the sustainable development of the enterprise.

3. This study provides a new perspective on CSR strategy. The previous literature discusses the influencing factors of CSR, such as the union strength of employees, the relationship with the government and corporate reputation (Greening and Turban, 2000; Campbell, 2007; Wang and Qian, 2011; Fombrun, 1996). However, the influence of the educational level of managers on CSR has not been discussed. This study provides empirical results that indicate the educational level of managers not only affects corporate governance but also the results of CSR performance and excess returns of firms.

The remainder of this study is structured as follows. Chapter II describes the sample. Chapter III presents the empirical results and their analysis. Chapter IV provides our conclusion.

## 3. Sample descriptive and research methods

To collect our sample which grouped according to annual revenue of the Enterprise Citizenship Award winners published by CommonWealth magazine on August 29, 2018, annual revenue with more than NTD 10 billion classify large-scale enterprises, with 5 to NTD 10 billion are middle-scale enterprises, less than NTD 5 billion are small enterprises and foreign enterprises in Taiwan, totaling four groups. Excluding unlisted and foreign companies, 71 award-winner enterprises were contained as sample. The scoring indicators of CSR performance are divided into four aspects: corporate governance (S1), corporate commitment (S2), social participation (S3) and environmental sustainability (S4). The scoring indicators are based on a 10-point scale, and the enterprises are ranked according to average score (S) for the four aspects. Table 1 presents the distribution of the 71 enterprises.

**Table 1:** Sample distribution

| Group | N | Ave S | Ave S1 | Ave S2 | Ave S3 | Ave S4 | Ave Pedu |
|---|---|---|---|---|---|---|---|
| Large-scale | 46 | 8.47 | 8.62 | 8.62 | 8.42 | 8.22 | 0.64 |
| Middle-scale | 10 | 8.47 | 8.59 | 8.62 | 8.51 | 8.15 | 0.66 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Small | 15 | 7.97 | 8.22 | 8.09 | 7.76 | 7.82 | 0.50 |

Note: Excluding unlisted and foreign companies, 71 award-winner enterprises published by CommonWealth magazine were contained as sample

Educational level of top managers is the quintessence. Top managers are defined as the highest executives such as chairman, chief executive officer (CEO), chief financial officer (CFO), general manager, vice general manager, assistant manager, executive directors, and managing director. According to Zajac and Westphal (1996), I denoted the proportion of top managers with master degrees or higher among all of top managers as Pedu. Tenure of managers (Tenu) and other control variables, such as Asset, Revenue, Size and Ind, are interpreted as explanatory variables. The CSR score is the dependent variable in the first hypothesis test.

Similar to MacKinlay (1997), the stock returns on the event announcement day (t=0) can capture the message of event transmission. However, the market may receive the message in advance the day before (t=-1). Therefore, the cumulative returns CAR1 (-1, 0) and the cumulative abnormal returns CAR2 (-1, 0)[1] on August 28 and 29, respectively, are the response variables for the second hypothesis. All data are collected from the Taiwan Economic Journal (TEJ) except the CSR performance-related. The descriptive statistics of these variables are listed in Table 2. As shown in this table, the average score for corporate governance is the highest, the average score for environmental sustainability is the lowest, and the average proportion of master degrees or higher is more than 0.6. That is, more than half of top managers hold master degrees or higher. The average tenure of managers is 9.2 years, the average size of the board of directors is approximately 10, and the average number of independent directors is 3.2. The average of cumulative return and cumulative abnormal returns are negative, and cumulative abnormal returns are less than cumulative returns.

The correlation coefficients between variables are shown in Table 3. Panel A lists the correlation coefficients between educational level, CSR aspects and total performance. The correlation coefficients between education level and corporate governance are the highest and that of corporate participation is the lowest. Of the four aspects, the correlation between corporate commitment and total performance is the highest. As shown in Panel B, there is a positive correlation among corporate social responsibility performance, the proportion of managers with high education, cumulative excess pay and cumulative excess pay. The correlation coefficient of all explanatory variables is less than 0.4, which indicates that these variables are not collinear. It is worth noting that tenure is negatively correlated with educational level, asset size, board size and number of independent directors but positively correlated with CSR performance.

[1] CAR1 (-1,0) is defined as 8/28, 29 days of cumulative stock returns, and CAR2 (-1,0) is two days of cumulative stock returns minus market returns.

**Table 2:** Descriptive statistic

| Variable | Mean | Median | Maxi | Mini | Std Dev | N |
|---|---|---|---|---|---|---|
| S | 8.362 | 8.355 | 9.388 | 7.749 | 0.425 | 71 |
| S1 | 8.529 | 8.520 | 9.620 | 7.580 | 0.453 | 71 |
| S2 | 8.505 | 8.500 | 9.540 | 7.360 | 0.460 | 71 |
| S3 | 8.292 | 8.410 | 9.330 | 7.100 | 0.575 | 71 |
| S4 | 8.123 | 8.060 | 9.390 | 6.990 | 0.569 | 71 |
| Pedu | 0.611 | 0.650 | 0.939 | 0.184 | 0.173 | 71 |
| Tenu | 9.182 | 9.220 | 18.550 | 3.000 | 3.490 | 71 |
| Asset | 583000 | 55304 | 8840000 | 1128 | 1550000 | 71 |
| Rev | 181000 | 38969 | 4710000 | 695 | 577000 | 71 |
| Scale | 9.915 | 9.000 | 20.000 | 5.000 | 2.975 | 71 |
| Ind | 3.155 | 3.000 | 6.000 | 0.000 | 0.951 | 71 |
| CAR1(-1,0) | -1.130 | -1.627 | 9.875 | -4.855 | 2.190 | 71 |
| CAR2(-1,0) | -2.657 | -3.255 | 8.073 | -5.348 | 2.299 | 71 |

Notes: 1. The unit of Asset and Rev is ten thousand NT dollars.
2. S1, S2, S3 and S4 are the average scores for corporate governance, corporate commitment, social participation and environmental sustainability, respectively.

**Table 3:** Correlation

Panel A

| | S | S1 | S2 | S3 | S4 | Tenu |
|---|---|---|---|---|---|---|
| S | 1 | 0.720 | 0.887 | 0.867 | 0.824 | 0.330 |
| S1 | 0.720 | 1 | 0.585 | 0.415 | 0.465 | 0.340 |
| S2 | 0.887 | 0.585 | 1 | 0.786 | 0.586 | 0.62 |
| S3 | 0.867 | 0.415 | 0.786 | 1 | 0.614 | 0.251 |
| S4 | 0.824 | 0.465 | 0.586 | 0.614 | 1 | 0.253 |
| Tenu | 0.330 | 0.340 | 0.262 | 0.251 | 0.253 | 1 |

Panel B

| | S | Pedu | Tenu | Asset | Rev | Size | Ind | CAR1(-1,0) | CAR2(-1,0) |
|---|---|---|---|---|---|---|---|---|---|
| S | 1 | 0.330 | 0.064 | 0.320 | 0.112 | 0.218 | 0.282 | 0.383 | 0.322 |
| Pedu | 0.330 | 1 | -0.152 | 0.264 | 0.120 | 0.086 | 0.301 | 0.233 | 0.207 |
| Tenu | 0.064 | -0.152 | 1 | -0.051 | 0.206 | -0.121 | -0.106 | 0.191 | 0.183 |
| Asset | 0.320 | 0.264 | -0.051 | 1 | 0.368 | 0.217 | 0.287 | -0.051 | -0.093 |
| Rev | 0.112 | 0.120 | 0.206 | 0.368 | 1 | 0.033 | 0.093 | 0.045 | 0.006 |
| Size | 0.218 | 0.086 | -0.121 | 0.217 | 0.033 | 1 | 0.252 | -0.026 | -0.126 |
| Indep | 0.282 | 0.301 | -0.106 | 0.287 | 0.093 | 0.252 | 1 | 0.133 | 0.072 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| CAR1(-1,0) | 0.383 | 0.233 | 0.191 | -0.051 | 0.045 | -0.026 | 0.133 | 1 | 0.967 |
| CAR2(-1,0) | 0.322 | 0.207 | 0.183 | -0.093 | 0.006 | -0.126 | 0.072 | 0.967 | 1 |

Under the assumption of $H_1$, taking CSR performance as the explanatory variable and considering the influence of the control variables on performance, the empirical regression formula is as follows:

$$S_i = C_0 + C_1 Pedu_i + C_2 Tenu_i + C_3 LnAsset_i + C_4 Ln\,\mathrm{Rev}_i + C_5 Size_i + C_6 Ind_i + C_7 Code_i \quad (1)$$

In the formula, $S_i$ is the corporate social responsibility score of the $i$ th enterprise， $Pedu_i$ is the proportion of those holding master's degrees or higher, $Tenu_i$ is the managerial tenure , $LnAsset_i$ is the log value of total assets, $Ln\,\mathrm{Rev}_i$ is the log value of annual revenues, $Size_i$ is the number of board of directors members, $Ind_i$ is the number of independent directors and $Code_i$ is the industrial code.

Similarly, Godfrey et al. (2009) regard enterprise size (LnAsset) as a control variable. Because the scoring criteria are grouped according to annual revenue (LnRev) is also included as the explanatory variable. The tenure of managers (Tenu) is a measure of the effect of the agency contract and the reputation of the management (Jian and Lee, 2011); it also becomes a proxy variable affecting manager's motivation to CSR (Deckop, 2006). Board structure is an index of organizational legitimacy (Singh, Tucker and House, 1986). The size of the board of directors (Size) and number of independent directors (Ind) are used as control variables to exclude the influence of board structure on organizational legitimacy. Code is identified by the Taiwan Stock Exchange's two-digit industry code to capture the effect of industry type on CSR performance.

In the validation of $H_2$, to test whether educational level has explanatory power with respect to the wealth effect of the award announcement, in addition to the explanatory variables of formula (1), the score for is an event control variable. The regression formula of the cumulative returns CAR1 (-1, 0) from the previous day to the same day and the cumulative abnormal returns CAR2 (-1, 0) deducted from the large market returns is as follows:

$$CAR(-1,0)_i = C_0 + C_1 Pedu_i + C_2 Tenu_i + C_3 LnAsset_i + C_4 Ln\,\mathrm{Rev}_i + C_5 Size_i + C_6 Ind_i + C_7 Code_i + C_8 S_i \quad (2)$$

## 4. Empirical results and analysis

### 4. 1 univariable analysis

**Table 4:** Univariable Test

| | Whole | High-Pedu | Low-Pedu | H-L |
|---|---|---|---|---|
| | N=71 | N=40 | N=31 | |
| S | 8.3618 | 8.4714 | 8.2205 | 0.2509 |
| | (165.745)*** | (0.3998) | 0.421 | (2.545)*** |

| | | | | |
|---|---|---|---|---|
| CAR1(-1,0) | -1.1302 | -0.6966 | -1.6897 | 0.9931 |
| | (-4.347)*** | (-0.2606) | (-1.4648) | (2.11)** |
| CAR2(-1,0) | -2.6573 | -2.305 | -3.1118 | 0.8068 |
| | (-9.74)*** | (-0.809) | (-2.6309)*** | (1.62)* |

Note:1. t-statistics are presented in parentheses.
2. ***, **,* indicate significance at the 1%, 5% and 10% confidence levels, respectively.

As shown in Table 4, the three dependent variables (S, CAR1 (-1, 0), CAR2 (-1, 0)) are all significantly different from 0. I divide them into higher education group according to the proportion of master's degree or above in management (denote as High-Pedu, Proportion > 0.6, N = 40) and lower education group (denote as Low-Pedu, Proportion < 0.6, N = 31), the average of the two groups is significantly different. It is noteworthy that the average score for social responsibility of the higher education group is higher than that of the lower education group, which provides support for the hypothesis of organizational legitimacy. The more highly educated manager is more efficient in implementing and exhibits a better attitude toward corporate responsibility. However, the cumulative returns and cumulative abnormal returns of the entire sample are negative, and the mean of the highly education group is higher than that of the lowly education group. This result differs from that Award-winner enterprises produce positive wealth effects in Chen, Shiu and Chang (2015).

**4.2 multivariate regression analysis**

As shown in Table 5, only the proportion of high education in management has significant explanatory power for CSR performance, and the other variables are not significant. Because the proportion of highly educated managers is proportional to S, the higher that the proportion of such managers is, the higher the S. That is, H1A cannot be rejected. These results present that under the assumption of organizational legitimacy, high education results in better management ability. The relationship between industry and stakeholders is closely integrated, and the functions of organizations are strengthened to produce better results in CSR implementation.

Among the estimated results in Table 6, the proportion of highly educated managers and CSR performances have a significant positive relationship with cumulative returns and cumulative abnormal returns. That is, when the proportion of highly educated mangers and CSR performance are high, the cumulative returns and excess returns for two days are increased. This result also indicates that the null hypothesis of H2A cannot be rejected. In addition, enterprise size and CSR performance are significantly inversely related. That is, the larger that the size is, the lower the CSR performance.

**Table 5:** Empirical Results for CSR Performance

| Dependent Variable: S | | | | |
|---|---|---|---|---|
| | Coeff | Std. Err | t-Stat | P-Value |
| C | 5.848 | 0.615 | 9.513 | 0*** |
| Pedu | 0.485 | 0.276 | 1.759 | 0.084* |
| Tenu | 0.004 | 0.014 | 0.312 | 0.756 |
| LnAsset | 0.026 | 0.042 | 0.606 | 0.547 |
| LnRev | 0.054 | 0.046 | 1.175 | 0.245 |
| Size | 0.008 | 0.018 | 0.435 | 0.665 |
| Ind | 0.031 | 0.052 | 0.596 | 0.554 |
| Code | 0.001 | 0.002 | 0.667 | 0.507 |
| $R^2$: 0.2720 | | | | |

Note: ***, **,* indicate significance at the 1%, 5% and 10% confidence levels, respectively.

**Table 6:** Empirical Results for Cumulative Abnormal Returns of CSR

| Dependent Variable: CAR(-1,0) | | |
|---|---|---|
| | CAR1 | CAR2 |
| C | -16.900 | -16.017 |
| | (-2.915)*** | (-2.716)*** |
| Pedu | 2.219 | 2.591 |
| | (2.232)** | (2.423)** |
| Tenu | 0.103 | 0.123 |
| | (-1.466) | (1.671)* |
| LnAsset | -0.388 | -0.460 |
| | (-2.191)** | (-2.553)** |
| LnRev | 0.314 | 0.246 |
| | (-1.606) | (-1.197) |
| Size | -0.008 | -0.037 |
| | (-0.095) | (-0.431) |
| Ind | 0.119 | 0.091 |
| | (-0.662) | (-0.496) |
| Code | -0.001 | 0.002 |
| | (-0.098) | (-0.194) |
| S | 1.823 | 1.931 |
| | (2.297)** | (2.397)** |
| $R^2$ | 0.238 | 0.237 |

Note: 1. t-statistics are presented in parentheses.
2. ***, **,* indicate significance at the 1%, 5% and 10% confidence levels, respectively.

**Table 7:** Empirical Results for CAR (-1, 0) of CSR: Considering CAPM, 3 Factors, 4 Factors, and 5 Factors

| Dependent Variable: CAR(-1,0) | | | | |
|---|---|---|---|---|
| | CAR3 | CAR4 | CAR5 | CAR6 |
| C | -17.119 | -13.502 | -12.886 | -12.857 |
| | (-2.894)*** | (-2.565)** | (-2.447)** | (-2.495)** |
| Pedu | 2.355 | 2.186 | 2.481 | 2.437 |
| | (2.339)** | (2.245)** | (2.527)** | (2.514)** |
| Tenu | 0.112 | 0.087 | 0.109 | 0.095 |
| | (-1.562) | (-1.356) | (1.708)** | (-1.510) |
| LnAsset | -0.382 | -0.386 | -0.370 | -0.397 |
| | (-2.146)** | (-2.295)** | (-2.273)** | (-2.402)** |
| LnRev | 0.329 | 0.255 | 0.219 | 0.280 |
| | (1.673)* | (-1.377) | (-1.197) | (-1.526) |
| Size | -0.0093 | 0.006 | 0.001 | 0.006 |
| | (-0.111) | (-0.075) | (-0.013) | (-0.078) |
| Ind | 0.1465 | -0.019 | 0.040 | 0.012 |
| | (-0.800) | (-0.109) | (-0.233) | (-0.068) |
| Code | 0.000 | 0.000 | -0.001 | 0.001 |
| | (-0.054) | (-0.033) | (-0.076) | -0.167 |
| S | 1.781 | 1.596 | 1.543 | 1.471 |
| | (2.201)** | (2.203)** | (2.153)** | (2.105)** |
| $R^2$ | 0.2432 | 0.193 | 0.202 | 0.202 |

Note: 1. t-statistics are presented in parentheses.
2. ***, **,* indicate significance at the 1%, 5% and 10% confidence levels, respectively.

**Table 8:** Empirical Results for CAR (-1, 1) of CSR: Considering CAPM, 3 Factors, 4 Factors, and 5 Factors

| Dependent Variable: CAR(-1,1) | | | | |
|---|---|---|---|---|
| | CAR3 | CAR4 | CAR5 | CAR6 |
| C | -22.772 | -14.7675 | -14.118 | -14.008 |
| | (-2.765)*** | (-2.159)** | (-2.051)** | (-2.072)** |
| Pedu | 3.318 | 2.9245 | 3.236 | 3.1574 |
| | (-1.935)* | (2.184)** | (2.372)** | (2.33)** |
| Tenu | 0.097 | 0.0573 | 0.0803 | 0.0633 |
| | (0.786) | (0.591) | (0.855) | (0.657) |
| LnAsset | -0.548 | -0.5198 | -0.5033 | -0.5286 |

| | | | | |
|---|---|---|---|---|
| | (-2.305)** | (-2.454)** | (-2.411)** | (-2.51)*** |
| LnRev | 0.526 | 0.386 | 0.3485 | 0.402 |
| | (2.047)** | (1.717)* | (1.534) | (1.787)* |
| Size | -0.107 | -0.0746 | -0.0799 | -0.0791 |
| | (-0.828) | (-0.598) | (-0.66) | (-0.64) |
| Ind | 0.384 | 0.0903 | 0.1528 | 0.1176 |
| | -1.223 | -0.374 | (0.633) | (0.479) |
| Code | 0.010 | 0.0084 | 0.0081 | 0.0098 |
| | (0.844) | (0.968) | (0.892) | (1.083) |
| S | 1.896 | 1.6618 | 1.6064 | 1.547 |
| | (1.691)* | (1.763)* | (1.715)* | (1.673)* |
| $R^2$ | 0.200 | 0.176 | 0.181 | 0.183 |

Note: 1. t-statistics are presented in parentheses.
2. ***, **,* indicate significance at the 1%, 5% and 10% confidence levels, respectively.

**Table 9:** Empirical Results for CAR (-1, 0) of Long-term CSR Performance: Considering CAPM, 3 Factors, 4 Factors, and 5 Factors

| Dependent Variable: CAR(-1,0) | | | | | | |
|---|---|---|---|---|---|---|
| | CAR1 | CAR2 | CAR3 | CAR4 | CAR5 | CAR6 |
| C | -2.048 | -4.287 | -2.575 | 1.452 | 2.237 | 1.120 |
| | (-0.508) | (-1.064) | (-0.633) | (0.359) | (0.548) | (0.285) |
| Pedu | 2.952 | 3.511 | 3.070 | 2.757 | 3.010 | 2.956 |
| | (2.734)*** | (3.111)*** | (2.806)*** | (2.735)*** | (2.991)*** | (2.985)*** |
| Tenu | 0.111 | 0.132 | 0.119 | 0.093 | 0.115 | 0.101 |
| | (1.375) | (1.599) | (1.46) | (1.339) | (1.678)* | (1.489) |
| LnAsset | -0.097 | -0.385 | -0.096 | -0.017 | 0.025 | -0.046 |
| | (-0.357) | (-1.351) | (-0.352) | (-0.061) | (0.093) | (-0.169) |
| LnRev | 0.452 | 0.355 | 0.465 | 0.395 | 0.360 | 0.410 |
| | (2.053)** | (1.481) | (2.088)** | (1.966)** | (1.819)* | (2.037) |
| Size | 0.01 | -0.021 | 0.008 | 0.023 | 0.018 | 0.022 |
| | (0.102) | (-0.22) | (0.082) | (0.253) | (0.200) | (0.249)** |
| Ind | 0.525 | 0.188 | 0.546 | 0.498 | 0.596 | 0.505 |
| | (1.622) | (0.533) | (1.672)* | (1.577) | (1.93)* | (1.621) |
| Code | 0.086 | 0.013 | 0.085 | 0.115 | 0.124 | 0.112 |
| | (1.21) | (0.177) | (1.19) | (1.574) | (1.742)* | (1.548) |
| Ls | -1.279 | -0.134 | -1.261 | -1.716 | -1.861 | -1.641 |
| | (-1.219) | (-0.122) | (-1.198) | (-1.54) | (-1.713)* | (-1.5) |
| $R^2$ | 0.155 | 0.144 | 0.168 | 0.131 | 0.149 | 0.149 |

Note: 1. t-statistics are presented in parentheses.
2. ***, **,* indicate significance at the 1%, 5% and 10% confidence levels, respectively.

**Table 10:** Empirical Results for CAR (-1, 1) of Long-term CSR Performance: Considering CAPM, 3 Factors, 4 Factors, and 5 Factors

| | CAR1 | CAR2 | CAR3 | CAR4 | CAR5 | CAR6 |
|---|---|---|---|---|---|---|
| C | -9.546 | -9.300 | -15.251 | -6.236 | -5.409 | -6.434 |
| | (-1.487) | (-1.396) | (-2.189)** | (-1.155) | (-0.985) | (-1.203) |
| Pedu | 3.797 | 4.157 | 4.365 | 3.772 | 4.039 | 3.960 |
| | (2.426)** | (2.618)*** | (2.554)*** | (2.838)*** | (3.002)*** | (2.975)*** |
| Tenu | 0.065 | 0.072 | 0.106 | 0.065 | 0.087 | 0.070 |
| | (0.537) | (0.574) | (0.815) | (0.633) | (0.883) | (0.696) |
| LnAsset | -0.707 | -0.764 | -0.707 | -0.546 | -0.502 | -0.575 |
| | (-1.961)** | (-1.997)** | (-1.812)* | (-1.871)** | (-1.702)* | (-1.991)** |
| LnRev | 0.532 | 0.432 | 0.595 | 0.465 | 0.429 | 0.472 |
| | (1.776)* | (1.402) | (1.919)* | (1.719)* | (1.581) | (1.743)* |
| Size | -0.086 | -0.101 | -0.095 | -0.063 | -0.068 | -0.068 |
| | (-0.637) | (-0.74) | (-0.678) | (-0.476) | (-0.53) | (-0.526) |
| Ind | 0.045 | -0.035 | 0.147 | 0.044 | 0.146 | 0.043 |
| | (0.092) | (-0.069) | (0.283) | (0.098) | (0.335) | (0.098) |
| Code | -0.054 | -0.069 | -0.059 | -0.013 | -0.003 | -0.018 |
| | (-0.493) | (-0.592) | (-0.501) | (-0.144) | (-0.037) | (-0.197) |
| Ls | 0.995 | 1.218 | 1.088 | 0.362 | 0.209 | 0.449 |
| | (0.595) | (0.688) | (0.602) | (0.268) | (0.153) | (0.335) |
| $R^2$ | 0.130 | 0.131 | 0.158 | 0.126 | 0.136 | 0.140 |

Note: 1. t-statistics are presented in parentheses.
2. ***, **,* indicate significance at the 1%, 5% and 10% confidence levels, respectively.

**4. 3 multifactor excess returns model**

To robust the validity of the preceding conclusions, I calculated the two-day excess returns declared by the CAPM, three-factor, four-factor and five-factor models, which are denoted in sequence as CAR3 (-1,0), CAR4 (-1,0), CAR5 (-1,0), CAR6 (-1,0). According to Peterson (1989), the period of event study should be between 100 and 300 days. Therefore, the market index and price of individual stock six months before August 29 were used to estimate the parameters of the model, and further calculate those excess returns.

The empirical estimates based on the explanatory variables of equation (2) and the dependent variables of multifactor cumulative abnormal returns are listed in Table 7. The proportion of highly educated managers, CSR performance and cumulative abnormal returns remain positively significant, and enterprise size has a significant inverse relationship with CSR performance, which is consistent with the

results shown in Table 5.

In addition, I extend the cumulative abnormal returns to CAR (-1, 1) from the day before the announcement to the day after the announcement. As shown in Table 8, the conclusion is consistent with Tables 5 and 6, and H1A and H2A cannot be rejected. However, it is noteworthy that in Table 8 not only is the ratio of high education and CSR performance corresponding to the cumulative returns of two days higher but also the annual revenue is more significant than the cumulative returns of two days.

### 4.4 Long-term CSR Achievements

According to the literature, the performance of long-term CSR has an important influence on the announcement of CSR events (Godfrey, 2005; Vanhamme and Grobben, 2009, Chen, Shiu and Chang, 2015). Therefore, the CSR achievements of the 71 enterprises in the sample in the past five years were calculated according to different weights as explanatory variables. The formula is as follows:

$$LS_{i,t} = 1/15 S_{i,t-4} + 2/15 S_{i,t-3} + 3/15 S_{i,t-2} + 4/15 S_{i,t-1} + 5/15 S_{i,t} \quad (3)$$

Using LS instead of S, the empirical results of the estimation equation (2) are listed in Tables 9 and 10. Whether for two-day cumulative or three-day cumulative returns, the higher education level has a positive significant coefficient for the declared excess returns. However, LS is not significant, indicating that the market is not responsive to long-term CSR performance.

## 5. Conclusion

Based on the premise that management is responsible to shareholders and has a significant impact on an organization's survival, it is important to implement CSR decision-making related to the sustainable operation of the enterprise. In addition, educational level is the key characteristic of managers. Therefore, this study attempts to analyze the impact of the educational level of managers on CSR performance by using enterprises that have won a CSR award as the sample. The empirical results reveal that the higher that the proportion of higher education among managers is, the better the CSR performance. Highly educated managers will not neglect corporate social responsibility because of overconfidence and hubris. Additionally, the proportion of highly educated managers and the cumulative abnormal returns declared to be awarded are positively related. However, the relationship between enterprise size and cumulative abnormal returns is negative. This study not only provides outsiders under information asymmetry through demonstrating how the quality of managers can be used to understand the effectiveness of CSR implementation but also determines how enterprises can be sustainably developed. The study filled the gap to the literature by the empirical results for the economic impact on CSR achievements affected by managerial education.

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