

# “Impact of gender and education on corporate social responsibility: evidence from Taiwan”

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# IMPACT OF GENDER AND EDUCATION ON CORPORATE SOCIAL RESPONSIBILITY: EVIDENCE FROM TAIWAN

## Abstract

This paper empirically studies the impact of female proportion and the background of the board on corporate social responsibility (CSR) disclosure of Taiwanese listed firms. The different groups of board size are detected by the structural break test, which is used as the threshold for dividing subsamples. The results show that the higher proportion of women and accounting background of board of directors, the more CSR disclosure for firms with more than 11 directors in the board, implying that women and accounting background directors can only promote their compassionate and reciprocal in CSR decision-making in large board firms. Overall, the empirical results poorly support the efficiency hypothesis suggesting that the board of directors is more powerful when it has high gender diversity. This study also confirms that the linear regression method may not be able to fully present the various possible relationships between the variables.

## Keywords

gender diversify, accounting background, corporate social responsibility

## JEL Classification

M14, M40, G30

## INTRODUCTION

Businesses cannot exist and operate in a vacuum. Their relationship with society and the environment is a critical factor in their long-term sustainability, which increasingly being used to measure their overall performance. The findings of Taylor, Vithayathil, and Yim (2018) propose that strategic participation in social responsibility, not just sponsoring environmental activities, increases corporate value through corporate social responsibility (CSR). Gender issues are recently discussed in a more focused manner in the context of CSR as it is increasingly thought that companies with a higher number of women in the board are better at practicing corporate social responsibility and sustainable development than others, and have brought great things to business and society.

Corporate social responsibility (CSR) has more and more become one of the most important issues in corporate governance in Taiwan. In addition to pursuing effective profits for business objectives and strategic development, businesses must bear responsibility for economic prosperity, social welfare, and environmental protection. The attention to enhancing corporate governance is being emphasized after an inadequate corporate governance system has been concluded as one of the root causes of the 1997 Asian financial crises. These crises provide lessons for Taiwan to esteem the importance of corporate governance. Taiwan Financial Supervisory Commission (FSC) believes that greater transparency as to corporate governance is needed for businesses to

control risk; therefore, it organizes the “Corporate Governance Assessment” system in 2014, of which the board directorship and CSR are the important components. Basically, investing the appropriate cost in CSR can improve the performance of the business and protect the stakeholders such as employees, communities, consumers, and investors, so that they are willing to invest more funds to allow the company to increase capital as well as profit to expand the scale. However, some managers may consider that the cost of corporate social responsibility will affect the company’s operational performance, and not willing to invest too much cost in corporate social responsibility. Berrone, Surroca, and Tribó (2007) believe the main purpose that some companies are willing to engage in social responsibility is to conceal the mismanagement of managers who may use earnings management as a tool to enhance financial performance, which, in turn, initiates agency problems and impairs shareholders’ equity.

Financial Supervisory Commission (FSC) mandates that the economic, environmental, and social issues arising from the listed companies’ operating activities shall be handled by the senior management and report to the board directorship. Besides, the first step of Taiwan’s CSR is the implementation of independent directors in 2007. The independent board of directors of the listed companies should obtain professional qualifications of law, finance, accounting or business with certificates and meet the work experience required. The accounting professionals are required to handle a variety of responsibilities beyond taxes, including financial report, analysis, forecasting, internal control, and planning. They are expected to be trusted advisors who can interpret numbers for providing decision support to corporate strategy. Academic literature illustrates the issues raised by trends in gender and corporate social responsibility (CSR) disclosure. However, there is not much discussion on the role of board directorship, especially their educational background.

This study uses 1668 Taiwan’s listed companies over the period of 2014 to 2016 where the data are most complete for all the analyzed variables. for exploring the interactions between corporate social responsibility and the structure of the board directorship. Existing literature (Bernasek & Shwiff, 2001; Powell & Ansic, 1997; Jianakoplos & Bernasek, 1998; Martin, Nishikawa, & Williams, 2009; Setó-Pamies, 2015; Horak, 2016) suggest that women tend to evade risk when making decisions. As a result, female directors may have sufficient incentives to increase corporate social responsibility to avoid legal risks. Besides, the empirical results of Moreno-Gómez, Lafuente, and Vaillant (2018) support that gender diversity is positively associated with subsequent business performance. Meanwhile, there are several studies examining the influence of the educational background of board on CEO turnover, risk management, firm performance, disclosure policies, and so forth. To the best of our knowledge, previous research has not examined how accounting background of board affects corporate social responsibility. Based on the above arguments and reasons, this study especially examines two issues with Taiwan’s sample: (1) whether women in the board can enhance corporate environmental responsibility; (2) whether there is a relationship between the board members’ accounting background and their firms’ CSR ranking. The “Corporate Governance Assessment” system is used as a criterion of CSR engagement.

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## 1. LITERATURE REVIEW

Regarding the connotation of corporate social responsibility, the views of the existing literature are quite consistent. Friedman (1970) believes that corporate social responsibility is based on the will of the stakeholders, usually refers to profitability, while following the basic rules of society, law, and ethics. Jo and Harjoto (2011) pointed out that corporate social responsibility generally refers to companies serving humans, communities, and the environment under legal requirements. In the-

ory, the concept of corporate social responsibility is common and extensive. In practice, many companies regard corporate social responsibility as a necessity, and have their own understanding of corporate social responsibility, including volunteer work, providing help to those in need, raising people’s awareness of the environment, and supporting local communities and funding the community in currency, etc. Fulfilling social responsibility will lead companies to develop good business ethics and a sense of responsibility to society, and then gain goodwill (Avi-Yonah, 2008).

The continued profitability and development of any business depends on social support (Gray, Kouhy, & Lavers, 1995; Richardson & Lanis, 2007). In addition, Donaldson and Preston (1995) argue that corporate value depends on the interests of all stakeholders, not just the interests of shareholders, so fulfilling social responsibilities can reconcile stakeholders' conflicts. Aguilera-Caracuel and Guerrero-Villegas (2018) believe that multinational companies doing business in developing countries can enhance their reputation by implementing CSR programs that meet the expectations of specific stakeholders.

Corporate Social Responsibility (CSR) paradigm has been incorporated into specific trends in the gender debate. Booth and Schulz (2004), Gunz and Thorne (2014) found that corporate social responsibility is often advertised as the management's tone at the top. Harjoto and Jo (2011) found the relationship between corporate governance and corporate social responsibility in the USA. Today's society is changing rapidly. Women on the board directorship influence the cooperation mechanism and decision-making process through their different characteristics from men, which in turn affects corporate governance and, to some extent, changes the moral atmosphere of management (Burgess & Tharenou, 2002; Burke, 1997; Torchía, Calabro, & Huse, 2011; Peterson & Philpot, 2007). Corporate governance is directly proportional to the realization of corporate stakeholders' benefits. Therefore, female members play an important role in corporate social responsibility. Wang and Coffey (1992) found that female directors were significantly and positively related to the level of corporate social responsibility. Ibrahim and Angelidis (1994) proposed that female directors have a stronger sense of corporate social responsibility. Williams (2003) studied 185 of world top 500 companies from 1991 to 1994 and found that the higher the proportion of women on the board directorship, the higher the degree of participation of enterprises in charitable donations. Boulouta (2013) studied 126 companies in the S&P 500 index for five years and found that corporate social performance has a significant relationship with the gender diversity of the board directorship, and the more gender-balanced, the stronger the impact of the corporate social performance. Bear, Rahman, and Post (2010) found

that corporate social responsibility levels have a positive impact on corporate reputation and can regulate the relationship between the number of female directors and corporate reputation. Zhang, Zhu, and Ding (2013) examined the relationship between the emergence of female directors and corporate social responsibility performance after the publication of the Sarbanes-Oxley Act. It was found that the more female directors appeared the better corporate social responsibility performance. Besides, other studies have also found that women in the board can significantly enhance corporate charitable donations and strengthen corporate environmental responsibility and other aspects of social responsibility (Bernardi, Bosco, & Columb, 2009; Jia & Zhang, 2011; Xingqiang & Wenzhao, 2012).

According to Johnson, Schnatterly, and Hill (2013), the professional background usually includes the skills and the experience that a board director brings to the decision-making process of the firm. These skills and experiences influence the director's behavior on what to pay attention to and how to make decisions. Previous studies in accounting (Ponemon & Gabhart, 1990; Ponemon & Glazer, 1990; Jeffrey & Weatherholt, 1996) recommend that accounting professionals and people with accounting backgrounds tend to have a lower level of moral reasoning and ethical development. Jeffrey and Weatherholt (1996) suggest that the reason explaining for the lower level of moral reasoning of the accounting professionals might be due to this profession's orientation towards standards and rules. King, Srivastav, and Williams (2016) found that management education provides skills that enable CEOs to manage the growing and complex banking activities for obtaining higher performance. Kuo, Wang, and Yeh (2018) believe that higher education of directors will lead companies to invest more in research and development. However, to our knowledge, previous research has not examined the impact of accounting background on the performance of corporate social responsibility. Based on the above arguments, this study tries to find the answers to the two questions: (1) whether women in the board can enhance corporate environmental responsibility; (2) whether there is a relationship between board members' accounting backgrounds and their firms' CSR ranking.

## 2. THE DATA AND MODEL

### 2.1. Data

One thousand six-hundred and sixty-eight (1,668) Taiwanese listed companies are used for the empirical study. The research sample period covers from 2014 to 2016. The definitions of all variables used for empirical results are summarized in Table 1.

Relevant CSR information is taken from the “Corporate Governance Assessment” system, and the listed companies with the top 5% and top 20% of the ranking are selected. The companies lacking the required information are deducted. The financial information required for this study is obtained from the Taiwan Economic Journal (TEJ) data source, which includes the shareholding ratio of managers, the ratio of independent directors, the size of the directorship, the number of women in the board, the educational background of directors, and the control variables such as company size, debt ratio, and return on equity. Corporate Social Responsibility uses the ranking of the evaluation results of the “Corporate Governance Assessment” system as a proxy variable.

### 2.2. Empirical model

Probit model that can be generalized to account for non-constant error variances in more advanced econometric settings is used for the empirical results. Because probit model a special type of Generalized Linear Model; therefore, it is a flexible generalization of ordinary linear regression that allows error distribution of non-normally distributed response variables. The bivariate outcome  $Y$  has a Bernoulli distribution with parameter  $p$  (success probability  $p \in (0,1)$ ), when  $Y = p$ . The probit model is stated as follows:

$$\text{probit}(Y) = \mathcal{N}^{-1}(p) = \mathcal{N}^{-1}(P[Y = 1]). \quad (1)$$

Equation (1) is used to transform the expectation of 0/1 dependent variable. Then, the probit of the mean is formed in a linear model of the regressor  $X$ :

$$\text{probit}(Y) = \beta X, \quad (2)$$

where  $\beta$  is an estimated parameter. The maximum likelihood-based approach is used for parameter estimation. Predicted probability can be obtained by the inverse probit transformation as in equation (3):

**Table 1.** Variables definitions

Variable	Definition	Sources
<b>Corporate social responsibility (CSR)</b>		
$CSR1_{it}$	A dummy that equals 1 if CSR is ranked in the top 5% companies and 0 otherwise	“Corporate Governance Assessment” system
$CSR2_{it}$	A dummy that equals 1 if CSR is ranked in the top 6%-20% companies and 0 otherwise	
$CSR3_{it}$	A dummy that equals 1 if CSR is ranked in the top 20% companies and 0 otherwise	
<b>Board members’ educational background (EBD)</b>		
$BFIN_{it}$	Board members with financial background/Total board members	TEJ
$BACC_{it}$	Board members with accounting background/Total board members	
$BLAW_{it}$	Board members with law background/Total board members	
<b>Board structure (BSE)</b>		
$FBD_{it}$	The proportion of women in board, female board members/Total board members	TEJ
$BDS_{it}$	The power of board, number of shares held by board members / Total outstanding shares	
$MANS_{it}$	The power of mangers, number of shares held by managers/Total outstanding shares	
$BS_{it}$	Board size, natural log of total board members	
$INBD_{it}$	Independent directors, independent directors/Total board members	
<b>Control variables (CTL)</b>		
$SIZE_{it}$	Natural log of total assets as at the end of year is used as a proxy variable of firm-size	TEJ
$LEV_{it}$	The debt ratio is calculated as total liabilities as percentage of total assets	
$ROE_{it}$	Return on equity	

$$\hat{P}[Y_i = 1] = \mathfrak{N}(\hat{\beta} \cdot X_i). \quad (3)$$

The board size may have different effects on the performance of different board roles, including management decisions relating company strategy, organizational practices, and policies (e.g., safety, health, and environment, etc.). In other words, these decisions related to the company's financial and accounting situations that require strong quantitative background knowledge and professional skills. Several theoretical studies point out that when structural breaks of data are overlooked, the empirical results should be biased. To overcome this defect, the Quandt-Andrews test is applied to check the possible breaks of the board size variable. The Quandt-Andrews test performs a single Chow Breakpoint Test at every point between two observations. Two statistics, including Wald-like tests and the Likelihood Ratio F-statistic, are derived from each this single test. The Wald F-statistic is computed from a standard Wald test with the restriction that the coefficients on the equation parameters are the same in all subsamples. The F-statistic is obtained from the comparison of the restricted and unrestricted sums of squared residuals. The individual test statistics are reported by three different statistics; the Maximum, Exp., and Ave statistic.

Table 2 and Figure 1 show that the Quandt-Andrews unknown breakpoint test detects three significant breaks for the board size (BS), which

occurred in the 149<sup>th</sup>, 1071<sup>st</sup>, and 2209<sup>th</sup> observations. These three break points respectively are used as the threshold to divide the sample into four subsamples; less than 7, 7-8, 9-11, and more than 11 members in the board. Based on this method, the probit model is applied for each subsample, and the nonlinearity of the sample is handled.

**Table 2.** Test for unknown structural breaks

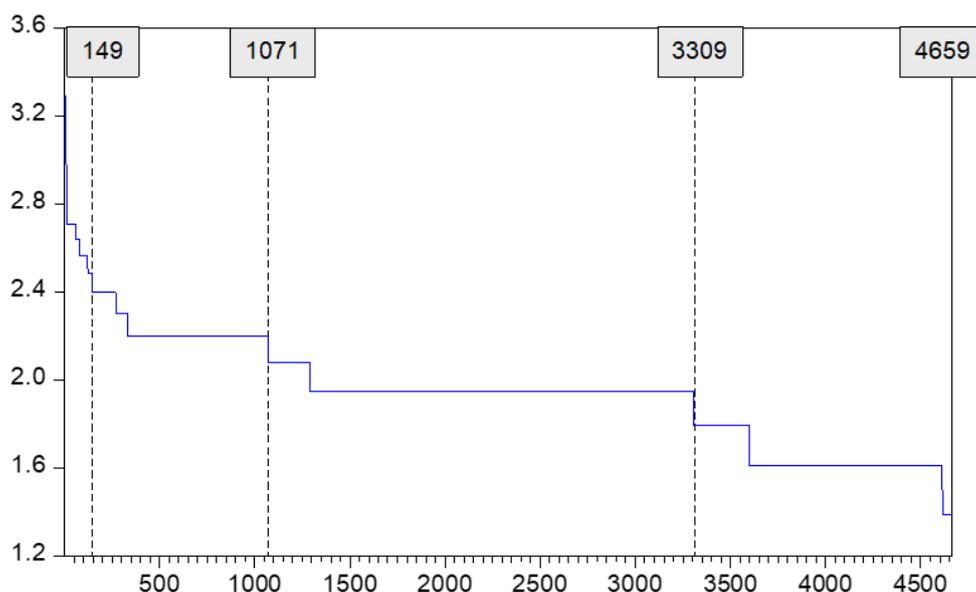
Quandt-Andrews test for BS			
Observations number	Max.	Exp.	Ave
149	2.869,226***	1.427,742***	948.960,6***
1.071	7.693,910***	3.839,217***	3.071,952***
3.309	6.555,085***	3.269,325***	4.257,795***

Note: \*\*\* indicate the 1% significance level.

The two hypotheses then are tested under four board sizes, less than 7, 7~8, 9~11, and more than 11 members by estimating the following probit model:

$$\text{Probit}[CSR_{i,t}] = \alpha + \beta[EBD_{i,t}] + \varphi[BSE_{i,t}] + \delta[CTL_{i,t}] + \varepsilon, \quad (4)$$

where subscripts *i* denotes individual firm (*i* = 1, 2, . . . , 1668), *t* time period (*t* = 2014, 2015, 2016),  $\beta$ ,  $\varphi$ , and  $\delta$  are the estimated parameters,  $\varepsilon$  is the error term. The definitions of all variables in equation (4) are presented in Table 1.



**Figure 1.** The breakpoints of the board size

### 3. RESULTS

The descriptive statistics for Corporate social responsibility (CSR), Board members' educational background (EBD), Board structure (BSE), and Control variables (CTL) are presented in Table 3.

Compared to Finance and Law background, both a maximum (0.5333) and a mean (0.0469) of Board members with accounting background (BACC) are highest, implying that the accounting background is appreciated in the board directorship of Taiwanese listed companies during the studying time. The mean of Female board members (FBD) is 0.1405, which indicates the proportion of women in the board remains low compared to that of men.

The minimum and maximum of Board size (BS) spread from 1.3863 (4 members) to 3.4012 (30 members). The mean and median of Independent directors (INBD) are 26.91% and 28.57%, which are mostly the same, implying that the proportion of Independent directors (INBD) in listed companies is quite consistent. The power of Board represented by the shares held (BDS) is not uneven among companies as its standard deviation is 17.76%. The mean of (MANS) is 1.41%, showing the power of managers is rather low. The mean and median of Firm size (SIZE) are 15.2827 and 15.0721, respectively, revealing that the firm size of almost listed companies is even. The figure of debt ratio (LEV) is rather impressive, with a mean of

40.21% and a maximum 98.56%. The volatility of Return on Equity (ROE) is also rather high, with its standard deviation of 20.08.

Tables 4, 5, 6, 7 report the results of the effect of Board gender (FBD) and Accounting background (BACC) on Corporate social responsibility (CSR) at different Board sizes (BS). The results of Table 4-7 all present the positive effect on CSR of Independent director (INBD), which complies with the development of corporate social responsibility in Taiwan, whose first step is the implementation of independent directors in 2007.

The financial and law background of board members play a negative role in promoting CSR disclosure. Firm size (SIZE) positively and significantly affects CSR ranking, being consistent with the 2015 regulation that the listed companies with capital of more than \$TW 10 billion must prepare the CSR report every year and be required to bear social responsibility. Meanwhile, the power of managers (MANS) has a negative effect on CSR, the reason for this behavior of managers may be that some managers may consider that the cost of corporate social responsibility will affect the company's operational performance, and not willing to engage in corporate social responsibility.

Table 4 shows that when Board has more than 11 members, the positive impact of Accounting background (BACC) on Corporate social responsibility

**Table 3.** Descriptive statistics

Variable	Mean	Std. dev.	Median	Min	Max
<b>Panel A. Corporate social responsibility (CSR)</b>					
CSR1	0.0358	0.1859	0.0000	0.0000	1.0000
CSR2	0.1245	0.3302	0.0000	0.0000	1.0000
CSR3	0.1603	0.3670	0.0000	0.0000	1.0000
<b>Panel B. Board members' educational background (EBD)</b>					
BFIN	0.0409	0.0557	0.0000	0.0000	0.4000
BACC	0.0469	0.0585	0.0000	0.0000	0.5333
BLAW	0.0210	0.0399	0.0000	0.0000	0.2667
<b>Panel C. Board structure (BSE)</b>					
FBD	0.1405	0.1300	0.1111	0.0000	0.7500
BDS	0.2210	0.1551	0.1776	0.0000	0.9742
MANS	0.0141	0.0339	0.0033	0.0000	0.5246
BS	1.9423	0.2521	1.9459	1.3863	3.4012
INBD	0.2691	0.1587	0.2857	0.0000	0.8000
<b>Panel D. Control variables (CTL)</b>					
SIZE	15.2827	1.4615	15.0721	10.0839	21.6757
LEV	0.4021	0.1800	0.3968	0.0054	0.9856
ROE	5.1955	20.0848	7.2000	-354.4400	113.200

**Table 4.** The impact of board gender and accounting background on CSR (probit regression analysis for the case of more than 11 board members)

Var.	Exp.	Top 5% CSR	Top 6%-20% CSR	Top 20% CSR	
$\alpha$		-7.734	-7.164***	-16.156***	
$\beta_1$	BFIN	-6.861**	-5.316**	-14.606***	
$\beta_2$	BACC	+	4.238*	3.744**	9.285***
$\beta_3$	BLAW		-6.255*	-2.661	-8.402***
$\varphi_1$	FBD	+	3.596*	-3.376*	1.375
$\varphi_2$	BDS		-1.445	2.232***	1.927**
$\varphi_3$	MANS		-27.326	7.664	-0.738
$\varphi_4$	INBD		8.099**	1.181	8.189***
$\delta_1$	SIZE		0.275**	0.340***	0.819***
$\delta_2$	LEV		1.021	0.476	-0.144
$\delta_3$	ROE		-0.001	-0.018***	-0.019*
<b>Model diagnostic</b>					
McFadden R-squared		0.298	0.232	0.525	
LR-statistic		43.02***	40.78***	108.07***	
P value of H-L		0.28	0.69	0.86	
Obs with Y = 0		121	108	80	
Obs with Y = 1		28	41	69	

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

**Table 5.** The impact of Board gender and Accounting background on CSR (probit regression analysis for the case of 9-11 board members)

Var.	Exp.	Top 5% CSR	Top 6%-20% CSR	Top 20% CSR	
$\alpha$		-8.472***	-5.304***	-7.488***	
$\beta_1$	BFIN		1.347	1.206	1.225
$\beta_2$	BACC	+	1.434	0.009	0.548
$\beta_3$	BLAW		0.320	0.909	1.135
$\varphi_1$	FBD	+	0.038	-1.229**	-1.028**
$\varphi_2$	BDS		0.749*	0.527*	0.732***
$\varphi_3$	MANS		-23.972***	-5.949*	-11.700***
$\varphi_4$	INBD		6.598***	1.132**	3.185***
$\delta_1$	SIZE		0.310***	0.286***	0.405***
$\delta_2$	LEV		-1.384***	-1.359***	-1.776***
$\delta_3$	ROE		0.033***	0.005***	0.014***
<b>Model diagnostic</b>					
McFadden R-squared		0.287	0.115	0.222	
LR- statistic		135.29***	102.34***	233.68***	
P value of H-L		0.56	0.68	0.29	
Obs with Y = 0		857	749	684	
Obs with Y = 1		65	173	238	

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

ty (CSR) is significant, while Finance background (BFIN) and Law background (BLAW) have a negative sign. The female board member (FBD) plays a poor role in their firms' CSR engagement at 1% level significance of the top 5 CSR. Interestingly, when the power of board (BDS) is high, their firms' CSR is ranked at the top 6% ~ 20%, not at top 5%, where the female board member (FBD) negatively affects CSR ranking. The high CSR ranking is also accompanied by low ROE, implying the costs for CSR influence the companies' financial performance.

The Accounting background and Board gender with less than 11 board members, as presented in Tables 5-7, plays no further role in CSR engagement. However, their return on equity (ROE) promotes the higher CSR. The debt ratio is found to have a negative effect on CSR, implying that the higher debt ratio lowers firms' CSR ranking.

The LR statistic test is used for the joint null hypothesis, that is, except the constant, all slope coefficients are zero. This statistic shows the significance of all

tested models. The p-values of Hosmer-Lemeshow (H-L) tests are large, showing the evidence of the not poor model fitted for the data.

The empirical results poorly support the efficiency hypothesis suggesting that the board of directors is more powerful when it has high gender diversity. This is because female directors may face greater pressure to be in management and they are weak. To engage in businesses' long-term sustainability, integrating gender-related information into corporate social responsibility reports can help companies show the public their responsibilities to female board members. It enables all the interested stakeholders to understand the impact of the organization's operations, products, and services on both male and female directors.

When a board member has an accounting background, the board member is expected to be professional over the company's financial status as well as accounting standards. In fact, professionals with an accounting background are taught and

**Table 6.** The impact of Board gender and Accounting background on CSR (probit regression analysis for the case of 7-8 board members)

Var.	Exp.	Top 5% CSR	Top 6%-20% CSR	Top 20% CSR	
$\alpha$		-6.914***	-4.103***	-5.284***	
$\beta_1$	BFIN	-2.821**	0.136	-0.516	
$\beta_2$	BACC	+	1.580	-0.094	0.258
$\beta_3$	BLAW		-0.897	-1.014	-0.865
$\varphi_1$	FBD	+	0.203	-0.873***	-0.713**
$\varphi_2$	BDS		-0.491	0.038	-0.072
$\varphi_3$	MANS		-0.485	-2.447*	-2.378*
$\varphi_4$	INBD		3.054***	1.493***	2.103***
$\delta_1$	SIZE		0.262***	0.191***	0.264***
$\delta_2$	LEV		-0.140	-0.760***	-0.790***
$\delta_3$	ROE		0.006***	0.005*	0.006**
<b>Model diagnostic</b>					
McFadden R-squared		0.158	0.061	0.094	
LR- statistic		90.926***	106.30***	185.44***	
P value of H-L		0.02	0.22	0.09	
Obs with Y = 0		2.175	1.945	1.882	
Obs with Y = 1		63	293	356	

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

**Table 7.** The impact of Board gender and Accounting background on CSR (probit regression analysis for the case of less than 7 board members)

	Var.	Exp.	Top 5% CSR	Top 6%-20% CSR	Top 20% CSR
$\alpha$			-6.611***	-5.386***	-5.660***
$\beta_1$	BFIN		-3.408	-3.300**	-3.524**
$\beta_2$	BACC	+	-3.642	0.752	0.272
$\beta_3$	BLAW		0.166	1.142	0.887
$\varphi_1$	FBD	+	1.105	-0.137	0.041
$\varphi_2$	BDS		0.151	-0.236	-0.220
$\varphi_3$	MANS		-18.979	-1.405	-2.257
$\varphi_4$	INBD		3.530***	1.628***	1.918***
$\delta_1$	SIZE		0.242**	0.240***	0.263***
$\delta_2$	LEV		-2.176**	-0.515	-0.792**
$\delta_3$	R1OE		0.022**	0.006***	0.008*
<b>Model diagnostic</b>					
McFadden R-squared			0.256	0.106	0.128
LR- statistic			32.72***	60.00***	80.66***
P value of H-L			0.92	0.57	0.62
Obs with Y = 0			1.339	1.277	1.266
Obs with Y = 1			11	73	84

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

practiced to follow accounting principles and law throughout their studies and careers. Therefore, compliance with regulations is their nature. If the CSR is regulated and effective enforcement of the CSR standards that mostly are followed by accounting board members then influence the decision of the board directorship on whether and how to carry it out. Unfortunately, this ability is only available if the board directorship has

more than 11 members. That is, only big companies promote the diversification of their boards, which can bring more bright performance outcomes, good governance and promote the firm's responsibilities.

This study also confirms that the linear regression method may not be able to fully present the various possible relationships between the variables.

## CONCLUSION

In addition to financial performance, social responsibility performance is also increasingly seen as a germane with long-term corporate sustainability. To explore the effectiveness of Taiwan's CSR since its implementation in 2014 based on the data of 1,668 Taiwanese listed companies, it found that the more women and accounting background board members, the more CSR disclosure for firms with more than 11 directors in the board, implying that women and accounting background directors are only able to promote their compassionate and reciprocal in CSR decision-making in large firms. The independent board and firm size have a positive effect on CSR disclosure, while the managers' power, financial background directors, and leverage has the contra effect.

From the maximization of the value of shareholders' interests to the paradigm shift process of stakeholders, it is still full of challenges to implementing CSR in Taiwan. It is difficult to assess short-term CSR benefits with limited resources and limited manpower. It is not easy to develop CSR if some shareholders do not pay attention to. Therefore, after CSR reaches a milestone, Taiwan's industry and academia can further consider how to improve CSR's tangible, intangible, short-term, long-term, and value to business and society. Moreover, Taiwan still has a long way to go to realize gender equality, and CSR can be used as a means to promote its gender equality.

## AUTHOR CONTRIBUTIONS

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