

The Impact of Women Board Members on ROA and Sustainability in CEO-Only Boards

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Gender diversity has changed the board of directors and now with more women on the board (WOB), they can make significant changes in corporations and possibly outcomes. This study addresses the relationship between ratio of women on CEO-only boards with Corporate Social Responsibility (CSR), words disclosed in 10-K financial reports and Return on Assets (ROA). We found a significant negative relationship between ratio of WOB and CSR type words in the 10-k annual report and a significant positive relationship between ratio of WOB and ROA. Our results indicate no significant relationship between high or low WOB and sustainability type reports.

Keywords: CEO-only board, CSR, corporate sustainability reporting, females on the board, women on the board, WOB

INTRODUCTION

This study addresses the relationship between ratio of women on CEO-only (Chief Executive Officer) boards and Corporate Social Responsibility (CSR) words disclosed in 10-K financial reports and ROA (return on assets). Earlier, Stone (2020) and Stone (2021) researched CEO-only boards by examining the differences between non-CEO-only boards and sustainability information and then CEO-only boards with or without lead independent directors (LID) and sustainability information and ROA. CEO-only boards are an elaboration of the Sarbanes-Oxley Law that required independent directors and the CEO-only board has all independent directors other than the CEO. Stone (2018) found that there was a significant difference in sustainability information/reporting between CEO and non-CEO-only boards. The CEO-only boards showed higher levels of sustainability information than non-CEO-only boards and the LID was addressed in the next study by Stone (2021) to determine possible reasons for the findings (the results were unexpected by Stone for CEO-only boards). The LID on the CEO-only board did not show a significant difference in the study as to disclosure, ROA or reporting. Earlier Faleye (2015) found that CEO-only boards showed inferior financial performance to non-CEO only boards and Jain & Jamali (2016) found that other powerful CEOs, like the CEO-only, have negative impacts on CSR information. In addition, Jiraporn and Chintrakarn (2013) found CEO's with solid authority may decrease investments in sustainability reporting. Women on the board (WOB) has been recently researched and findings show that women have a positive effect on sustainability reporting and performance. So the study here considers the effects of women on the CEO-

only board as to sustainability measures and ROA (Fernandez-Feijoo et al., 2013; Arayssi et al., 2016; Hyun et al., 2016; Buallay et al., 2022).

The SEC is actively considering the regulation of sustainability information; in the U.S. sustainability reporting is not mandatory (Quinlivan, 2019). For example, the SEC is now taking comments from investors and other interested parties on a new climate disclosure proposal (Gensler, 2022). Organizations like the GRI (Global Reporting Initiative), the SASB (Sustainability Accounting Standards Board) and ISSB (International Sustainability Standards Board) are working together to update standards and consider implications to reporting (IFRS, 2022; Cohn, 2022). Now, companies must pay particular attention to their CSR initiatives and structures that support CSR like WOB.

THEORY AND RESEARCH

Women on Boards and Sustainability Reporting

The issue of WOB continues in the news today. Recently, the European Union, agreed to mandate that boards are made of at least 40% women. The new requirements go into practice in 2026 (Peluso, 2022). In the United States no mandates are in place for women membership on the board. California tried to implement a quota, but the law was ruled unconstitutional by a superior court in Los Angeles (Peluso, 2022). California will appeal the ruling. The law originally went into effect in 2019, but some advantage has already taken place since the number of public California companies without women board members dropped from 27% to 1% in 2021 (Gupta, 2022). In addition, some stock exchanges have put their own requirements in place like the NASDAQ in 2021 for WOB. Even Goldman Sachs requires companies going public to show board diversity. In 2021, the U.S.'s showed 23.9% women board members in public companies; but the European Union showed a higher percentage (Peluso, 2022). The percentage is growing for U.S. companies and Women on Boards (2022) announced that 27.3% of the Russel 3000 companies have WOB; a 2.9% increase from the previous year.

The subject of women's presence on the board of directors and sustainability is an actively researched topic. For example, Fernandez-Feijoo et al. (2013) found that having a minimum of three female board members increased the level of CSR reporting using data from the top 250 world companies. Then, Arayssi et al. (2016) discovered that involvement of female directors on the board showed increased ESG (Environmental, Social and Governance) disclosure and higher risk adjusted returns.

The study by Hyan et. al (2016) focused on the ratio of women directors and the impact on CSR when researchers considered the S&P 1500 and CSR ratings and showed that higher ratios of female board members related to increased CSR. Nadeem et al. (2017) found that social practices are becoming of heightened importance to companies and globally countries are starting to mandate WOB. The authors also found that having WOB relates to better sustainability practices when using data from Australian stock exchange companies from 2010-2014.

In Nehili et al. (2017), the authors commented that, older research on the topic of WOB and CSR, separates some authors on the subject. Some studies found no relationship in WOB and CSR disclosure and reporting (Giannarakis, 2014; Prado-Lorenzo & Garcia-Sanchez, 2010 as cited in Nehili et al., 2017). Hyun et al. (2016), Fernandez-Feijoo et, al (2013) and Post (2011, as cited in Nehili et al. 2017) found that the higher ratio of WOB of three or more women directors related to CSR reporting practice and disclosure. Nehili et al. (2017) found that WOB led to better and more credible CSR disclosure, which resulted in higher firm value when they studied French listed companies. More recent findings seem to relate to the positive relationship between female directors and CSR.

Using data from stock exchange listed banks from around the world, Buallay et. al (2022) found female board members relate to better disclosure of CSR and especially between the level of 22-50% and the authors suggested that female board members should be mandated. From France, similar results were found. By using Bloomberg data from 2011-2019 for French stock exchange companies and environmental disclosure data, it was indicated that higher percentage of female board members related to higher sustainability disclosure (Chebbi et al., 2020). In addition, from China, Gong et al. (2021) found, using

information from Chinese stock exchange firms from 2010-2016, that boards with at least three female members showed increased quality and speed as regards to environmentally related initiatives.

Most of the research does not specifically focus on United States companies. In the study here, the level of female board membership is examined as it relates to sustainability reporting and disclosure using data from the S&P 500 with a CEO-only board (a product of United States laws). Possibly the increasing addition of more WOB helps to mitigate the power of the lone company member CEO created by unintended impact of the elaboration from the Sarbanes-Oxley Law, to the all independent board. The fully independent board, used often in the United States, now has only one insider on the board, making the CEO more powerful than originally intended by the use of independent members on the board.

Agency Theory and Elaboration Theory in Study

During the 2000's independent Boards supported by agency theory became popular due to the Sarbanes-Oxley Act at the beginning of the 2000's (Faleye, 2015). Due to the law and to meet the requirements of the law, an elaboration occurred that has created the CEO-only board, meaning the CEO is the only company member of the board. Elaborations often occur when companies try to meet requirements of laws (Joseph et al., 2014). Stone (2018) discovered that CEO-only boards resulted in a positive relationship with CSR reporting and disclosure. The result was unexpected by Stone (2018), considering that the CEO-only board resulted in a powerful CEO that may exert more power over an independent board, extinguishing the effect of the independent board's normal positive impact on protection of shareholders and per Faleye (2015) reducing company performance. Powerful CEO's were not associated with higher CSR initiatives and seemed to consider CSR investments as just reductions to cash flow This study will examine women on CEO-only boards and the relationship with CSR reporting and disclosure. There is a possibility that greater use of women on boards restores the agency impact thus mitigating the powerful CEO (Jirapon & Chintrakarn, 2013).

State of Sustainability Reporting

For the past twenty years stakeholders have used Corporate Social Responsibility reporting (CSR) to provide data to interested parties (Nunez & Nunez, 2018). CSR reporting is in practice at 86 % of S&P companies (Governance and Accountability Institute, Inc., 2019). The first thought was to increase profits by better management oversight but now good governance includes focus on CSR (Kaymak & Bektas, 2017). Reporting could be guided by the Global Reporting Initiative (GRI), the International Integrated Reporting Council (IIRC) or the Sustainability Accounting Standards Board (SASB) (D'Aquila, 2018). The GRI started in 1997, but issued standards in 2016 and is used globally by a variety of interested parties. The Global Reporting Initiative (GRI) standards, are the most broadly adopted standards by reporters and used in this study (Nunez & Nunez, 2018). Different levels of reporting exists for GRI measures. The IIRC offers information for creating integrated reporting by using standards adopted in 2013 (D'Aquila, 2018). The organization began in 2010 and is joined by investors, governmental interests, CPA's, and others interested in providing and supporting financial capital. The last to join standard creation is the SASB, in the United States, and in 2017 adopted their set of standards for seventy-nine different industries (D'Aquila, 2018). There are challenges to adoption of standards in the United States because of varying frameworks, application of uncertainties and different reporting types. Currently, EFRAG (European Financial Reporting Advisory Group), the European Union's reporting body, is working with the GRI on developing standards, though the GRI believes the proposed standards at this point are mandatorily dictating many items left optional by the GRI (Journalists, 2022). IFRS's (International Financial Reporting Standards) IASB(International Accounting Standards Board) and the ISSB (International Sustainability Standards Board) are working with the GRI and the SASB to coordinate efforts (IFRS, 2022; Cohn, 2022). Regardless of the difficulties, the process is moving forward both in the U.S, and globally.

Per Quinlivan (2019), in the U.S. reporting is voluntary and now the regulators are intensively involved in reviewing the issue. Concerns are being considered by the SEC after receiving a petition from institutional investors regarding lack of consistency in comparative analysis in current company disclosures (Griffin et al., 2019). Professional organizations and speakers on corporate governance have reiterated that

boards and CEO's must take sustainability matters to heart because of increasing demands from all stakeholders including the SEC (DeLoach, 2019).

Lee (2021a), the acting chair of the SEC, spoke on the issue in 2021 and expressed that no issue is more critical than making sure the SEC is addressing issues around the environment, social and corporate governance and the underlying effect on all stakeholders. Winden (2021) wrote that the SEC is deeply involved in the subject of sustainability disclosure and reporting. After President Biden began his term, there has been increased focus on the issue. Lee, (2021b) with the SEC then announced requests for comments on the subject from investors and other interested parties. In December 2021, the SEC stated readiness to expand the scope of sustainability reporting for companies under SEC requirements (Business Mirror, 2021). Finally, Gensler (2022), Chair of the SEC, announced a new proposal on climate disclosures, which is open for comments from interested parties, to meet needs of investors and other stakeholders. Now, companies must address the make-up of boards and the qualities that generate and support CSR reporting and disclosure in order to meet the changing reporting landscape (Bolourian et al., 2021). WOB and the relationship to sustainability reporting and disclosure is addressed in the study here.

CEO-Only BODT

Stone (2018) discovered a positive relationship between the types and levels of sustainability reporting and disclosure with CEO-only boards. The CEO-only board was created by an elaboration from the Sarbanes-Oxley Law requiring independent board members after the corporate scandals of the early 2000's. The CEO-only board has only one company member, the CEO, and the rest of the board are independent members, silencing other inside company contributors that may have previously been able to serve on the board (Faleye, 2015). Surprisingly, Joseph et al. (2014), considering fortune companies over a 27 year time period, found that the elaboration of the structure of the board to fully independent, instead of the expected outcome of better agency safeguarding for shareholders, removed the benefits of agency by eliminating the voices of other corporate members, other than the CEO, resulting in greater CEO autocracy. When, the CEO is powerful, like the case with a dual CEO (both chairman and president with exceptional power), the impact to sustainability efforts is negative, although a CEO with moderated power may invest in sustainability efforts (Jiraporn & Chintrakarn, 2013). Recently, Zhu et al. (2022) found that if women were on the board then higher CSR performance was not mitigated by a dual CEO as normally thought.

Looking at the relationship between the CEO-only board using S&P 500 companies circa 2015 and data from financial reports, disclosure and the GRI, Stone (2018), discovered a positive relationship instead of the expected negative relationship between the CEO-only board and CSR reporting. There is a possibility that ratio of WOB may have mitigated the powerful CEO-only. Therefore, this paper looks at the possibly moderating influence of WOB on the CEO-only power as a reason for the study by Stone (2018) having surprising results.

Performance

Faleye (2015) using data from 1998-2011, when fewer women served on boards, discovered that CEO-only boards showed inferior return on assets. In addition, Stone (2018), with data from S&P 500 companies, did not discover a relationship between ROA (return on assets) and CEO-only boards but did not consider the effects of female directors on the results. Others, like Sledge (2015) considered CSR data from 300 Fortune 500 companies finding that ROA and revenue did show positively toward those companies using CSR reporting and data. When Rodriguez-Fernandez (2015) used 2009 GRI data, they discovered that CSR showed positively toward companies that had provided the data, they suggested more research on powerful CEO-structures and CSR information like the structures considered in this study.

Additionally, powerful CEOs related to inferior financial performance but independent board members related to superior performance using ROA as a measure when considering data from the NASDAQ-100 (NASDAQ-100 requires independent board members) (Rutledge et al., 2016). Shrivastav and Kalsie (2016) discovered that the powerful dual-CEO, both president and chairman, related negatively to return on equity. Terjesen et al. (2015) studied female directors, in a broad multi-national study and found women board members related to higher financial performance including ROA. In addition, Rahman & Zahid (2021)

found that WOB led to increased ROA and lower stock volatility. The study here considers the ratio of female directors on CEO-only boards and ROA and considers if female directors could improve on the effects of the powerful CEO-only.

PURPOSE OF STUDY

The research examines the relationship between CEO-only BODT, ratio of WOB, higher or lower ratio of female directors, sustainability reporting, disclosure and ROA sampling companies from the S& P500 for the year 2015. Data for CSR reporting information and disclosure came from SEC and GRI reports (SEC, 2018; GRI, 2018) and data for ROA was gathered and calculated from the SEC information for 2015 reporting period.

Research questions are displayed below:

***RQ1:** Does ratio of women on the CEO-only board relate to sustainability disclosure in the annual report?*

***RQ2:** Does ratio of women on the CEO-only board relate to ROA computed from the annual report?*

***RQ3:** Does type of CEO-only board (higher or lower ratio of female directors) relate to type of sustainability report?*

RESEARCH DESIGN AND METHODOLOGY

The study used archival data, like Lock and Seele (2015, 2016), who suggested a quantitative content analysis for CSR research for this type of analysis. In Stone (2018, 2020), a similar approach was used. The data was obtained from Sibilis Research (2017) for the 2015 S&P 500 listings. This was the most currently available data for use. The information for WOB (independent variable) was retrieved from the SEC proxy and financial reports for the 2015 time period (SEC, 2020). Data for research questions 1 and 3 was retrieved from the 2015 SEC annual reports (SEC, 2018). GRI (2018) 2015 data was gathered for research question 3. The GRI is widely known as a top sustainability reporting organization and enjoys use by many companies (Truant et al., 2017). The study also used data from previous research by Stone (2018) for ROA, GRI and disclosure data.

Population, Sample and Data

Stone (2018) sampled and coded 343 CEO-only companies from the S&P 500 for 2015 gathered from a listing of companies obtained from Sibilis Research (2017) and the information was used for a starting point in this study. Stone also gathered data regarding disclosure word count, GRI sustainability data and ROA data from annual reports all from the year 2015 and the data was also used in this study. The random sample of 222 out of 343 used in Stone (2021) was used for this study and the CEO-only boards were coded for the ratio of WOB by gathering information from the proxy and annual reports for 2015. Note, the study by Stone (2021) mentioned developing additional research to test the data regarding WOB.

Measurement

Using the S&P 500 data is valuable when considering external validity because of the practical applications for similar interested companies applying the findings from the study. Companies in the S&P 500 are required to have balance sheets with a certain larger asset size and be actively traded on the markets (Stone, 2018; S&P Dow Jones Indices, 2018). Data was coded from the S&P 500 annual financial and proxy reports.

Operational Definition of Variables

The study includes one independent variable and 3 dependent variables. The variables are listed below.

Independent Variable 1

The independent variable was CEO-only board with ratio of WOB. BODT with categories CEO-only and non-CEO only were used in the followed study (Stone, 2018). From the proxy and annual reports, for the applicable year related to the 2015 annual report, number of women on each board was gathered and recorded along with the total board members and a ratio was calculated.

Dependent Variable 1

Variable 1 was the type of word used in annual reports regarding sustainability disclosure, following Stone (2018, 2021), Jizi et al. (2018) and Garcia-Sanchez and Martinez-Ferrero (2017); the three studies used categories such as community, customers, environmental, ethics and human rights related areas to gather the data. Here the study uses data from Stone (2018) environmental, human rights, ethics and community from the 2015 report. The words were counted and recorded in total by company.

Dependent Variable 2

Variable 2 is continuous and ROA was computed using the income from the annual report dividing by average assets for the 2015 period. Matuszak and Rozanka (2017) as well as Ameer and Othman (2012) used this approach when researching CSR and performance.

Dependent Variable 3

Variable 3 uses the 2015 GRI to determine the report filings, non-filings, limited filings and the levels of filings similar to Stone (2018). Information includes: no report, non-GRI type report, cited GRI, referenced GRI and the GRI levels- G3, G3-1 and G4. Researchers used comparable data when researching GRI levels and other sustainability type research considering types and quality of reports (Boiral et al., 2019; Iyer & Lulseged, 2013). For the study here, the G-3 and G-3-1 categories were combined because of limited categorial data for the calculations.

Study Procedure

The S&P 500 data was separated by Stone (2018) into CEO-only and non-CEO-only, then the 343 CEO-only data was used in the study here. Then a random sample of 222 out of the 343 was obtained to meet the requirements of categorical research questions and provide a sample requiring less data. The data gathering phase was extensive for all the data for the word counts and GRI. Stone (2018) coded the data for word count for discosure and GRI reporting and the data was used in the study; along with the calculated ROA. For this study specifically, the 222 sample was coded for ratio of WOB.

DATA COLLECTION AND ANALYSIS

Statistics

Chi-squared analysis was used for categorical research question 3. Regression was used for research question 1 and 2.

Coding

Data was coded in Stone (2018) for the GRI and SEC websites 2015 report information including: GRI reporting data, SEC 10-k reports and proxy reports. The CEO-only board information was also coded in Stone (2018) for the dependent variable. Stone (2018) calculated a sample of 10% of the coding data and found no difference between coder 1 and 2. For the WOB sample ratio, a 5% sample was used and there was no difference among the coders.

Assumptions, Limitations and Delimitation

The sorting categories for disclosure data have been used before in research studies and applied to the study here (Jizi et al., 2014; Garcia-Sanchez & Martinez-Ferrero, 2017). The GRI information is used in the study because the GRI is known as pioneer in guidelines and formats for sustainability reporting

(Michelon et. al., 2015). Archival data, like the kind used in the study, comes from various sources and may be a limitation in the study.

RESULTS

Below are the results for the three research questions.

RQ1: Does ratio of women on the CEO-only board relate to sustainability disclosure in the annual report?

H10: The ratio of women on the CEO-only board relate significantly to sustainability disclosure in the annual report?

H2a: The ratio of women on the CEO-only board does not relate significantly to sustainability disclosure in the annual report?

TABLE 1
RESEARCH QUESTION 1

Research Question 1

<i>Regression Statistics</i>					
Multiple R		0.153773284			
R Square		0.023646223			
Adjusted R Square		0.019208251			
Standard Error		51.98585561			
Observations		222			

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	14399.50766	14399.51	5.32816	0.021912312
Residual	220	594556.4203	2702.529		
Total	221	608955.9279			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	111.8828989	8.227143182	13.59924	5.65E-31
X Variable 1	-86.6043888	37.5190018	-2.30828	0.021912

The regression showed a p value of ($P=.021012$) for the X- Ratio of WOB variable which is statistically significant at 5 percent and has a negative sign. The p value for the intercept was not significant. The regression was also computed without the 10 extreme word count outliers with a p value ($P=.135$) which is not statistically significant event at 10 percent. The outliers were not removed. They may be signaling other situations addressed in the analysis of the results in this paper.

RQ2: Does ratio of women on the CEO-only board relate to ROA computed from the annual report?

H10: The ratio of women on the CEO-only board relate significantly to ROA computed from the annual report.

H2a: The ratio of women on the CEO-only board does not relate significantly to ROA computed from the annual report.

TABLE 2
RESEARCH QUESTION 2

Research Question 2

<i>Regression Statistics</i>	
Multiple R	0.127797513
R Square	0.016332204
Adjusted R Square	0.011860987
Standard Error	0.091578152
Observations	222

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.030633934	0.030634	3.652742	0.057276662
Residual	220	1.845042727	0.008387		
Total	221	1.875676661			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.026248242	0.014492915	1.811109	0.071488
X Variable 1	0.126318648	0.066093379	1.911215	0.057277

The regression showed a *p* value of (P=.057277) for the X- Ratio of WOB variable which is statistically significant at 10 percent and shows a positive relationship between the ratio of women and ROA. The *p* value for the Intercept was (P=.071488) and again is statistically significant at 10 percent level. A t-test was also considered for this question and the ratios of WOB were sorted to high and low categories and the results were similar and showed a *p* value, two tailed (P=. 0.004641847) which is statistically significant at 1 percent.

RQ3: Does type of CEO-only board (higher or lower ratio of female directors) relate to type of sustainability report?

H10: The BODT relates significantly to type of sustainability report?

H2a: The BODT does not relate significantly to type of sustainability report?

TABLE 3
RESEARCH QUESTION 3

Research Question 3 - Women on Board * GRI Data

		GRI Data					Total
		Cited GRI	G-Three	G-Four	No Report	Non - GRI	
Women on Board	H	Count	5	10	33	47	105
		Expected Count	6.1	9.0	26.5	47.8	105.0
		% within Women on Board	4.8%	9.5%	31.4%	44.8%	100.0%
		% within GRI Data	38.5%	52.6%	58.9%	46.5%	47.3%
		% of Total	2.3%	4.5%	14.9%	21.2%	47.3%
L		Count	8	9	23	54	117
		Expected Count	6.9	10.0	29.5	53.2	117.0
		% within Women on Board	6.8%	7.7%	19.7%	46.2%	100.0%
		% within GRI Data	61.5%	47.4%	41.1%	53.5%	52.7%
		% of Total	3.6%	4.1%	10.4%	24.3%	52.7%
Total		Count	13	19	56	101	222
		Expected Count	13.0	19.0	56.0	101.0	222.0
		% within Women on Board	5.9%	8.6%	25.2%	45.5%	100.0%
		% within GRI Data	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	5.9%	8.6%	25.2%	45.5%	100.0%

The chi-square test did not show a significant association between CEO-only board (with high or low ratio of WOB) and levels of GRI reporting or not was $X^2(4, N = 222) = 7.510, p = .1111$ which is not statistically significant even at 10 percent level.

FINDINGS AND CONCLUSIONS

The findings were: research question 1 found a significant negative relationship between ratio of WOB and CSR type words in the 10-k annual report. Research question 2 found a positive significant relationship between ratio of women on CEO-only board and ROA. Research question 3 found no significant relationship between high or low WOB and sustainability type reports. Limitations may exist for uncontrollable events in recording of archival data. Delimitations may exist for business segment information or industry classifications not considered in the study.

The findings regarding the word disclosure- research question 1, show that lower levels of WOB related to higher word disclosure. This may infer that the disclosures may need to be examined individually to see if the higher words counts are disclosing risk type problems having to do with the environment in the 10-K annual reports (Sandulescu, 2021). Some research has found that women on boards tend to lower company risk taking so lower levels of WOB and possible greater risk may be an issue (Boutchkova, 2021). Or alternatively, certain industries may have lower ratios of WOB and have higher environmental disclosures. Finding related to research question 2 regarding ratio of WOB and ROA coincide with Terjesen et al. (2015) and Rahman and Zahid (2021) that also found WOB showing increased ROA. The findings for research question 3 show no significant relationship between high and low WOB and sustainability reporting at the GRI. In Stone (2021), there was no significant difference between CEO-only board with or without LID and sustainability reporting at the GRI. In Stone (2020), there was a positive significant difference between GRI reporting for CEO-only boards vs non-CEO only boards. So the WOB may not be related to the better reporting for CEO-only boards. WOB is increasing in the United States so the time frame used in this study does not fully reflect possible differences.

RECOMMENDATIONS FOR PRACTICE AND FUTURE RESEARCH

With the heightened interest in CSR issues for SEC companies, companies today need to draw attention to the structures that develop and report CSR. Since the findings are showing increases in ROA with higher ratio of WOB, investors should pay particular attention to the structure and members of their boards. For future research several areas of interest have become evident with the results of this study. Future studies regarding the ratio of WOB and sustainability disclosure, reporting and performance with additional recent years included in the data are suggested, especially since the ratio of WOB for US companies has increased since the year used in this study.

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