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Do Board Internationalization, Political Relations and Gender Diversity Determine the Corporate Environmental Reporting Practices in Jordan: A Random-Effect Test

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ABSTRACT

This paper examines how Jordanian industrial companies disclose environmental information, focusing on trends and factors like internatio.nalization, political relations, and gender diversity. Using a disclosure index, data was extracted from annual reports of 33 companies listed on the Amman Stock Exchange from 2012 to 2021. The study found that while some recommended environmental information is disclosed, the level of disclosure is limited. Board internationalization, political relations, and gender diversity significantly impact environmental practices, while firm size and industry type are not significant predictors. Corporate profitability is the most important factor in explaining these practices.

INTRODUCTION

Environmental issues are now one of the biggest challenges facing businesses and society in general. Recent years have witnessed many criticisms of companies because of their practices and their negative

impact on the environment. Therefore, companies should pay attention and show interest in society. To do this, companies resort to disclosing qualitative and quantitative environmental information (Gray et al, 1995)

As stakeholders exert greater pressure on companies to adopt environmental responsibility, including actions like disclosing future environmental aspirations, these companies have responded through their boards of directors. The board of directors, being a key policymaking institution within the company, has implemented measures to promote environmental responsibility, resulting in a series of strategic decisions. Simultaneously, the phenomenon of globalization has expanded global mobility, leading talented individuals to seek new opportunities worldwide. Consequently, companies aim to attract and leverage the expertise of these talented individuals, recognizing the significant impact they can have on organizational outcomes. Embracing a diverse range of perspectives at the senior management level, particularly in terms of national backgrounds, leads to positive outcomes for companies. The presence of board diversity emerges as a crucial factor, enhancing board efficiency and driving overall company performance (Usman et al., 2020). However, the issue of diversity among the members of the board of directors and its impact on environmental practices drew the attention of the researchers, including the impact of gender, nationality, education, independence, and its reflection on corporate environmental responsibility in general (Khan et al. 2019).

Jordan has always sought to keep pace with what is new, especially concerning the issue of institutional governance in recent years, which encouraged the idea of diversity among board directors, besides the existence of multiple studies that dealt with the impact of diversity of boards of directors on performance. Nevertheless, it did not address environmental practices to the researchers' knowledge. Therefore, this study shed light on the impact of the board's internationalization, the political relations and gender diversity on the determinants of CER practices. Accordingly, the research problem will be identified in the central question: Are the board internationalization, the political board and gender diversity related to corporates' environmental practices?

The importance of conducting this study stems from the fact that many prior studies showed an interest in the diversity of boards of directors in Jordanian companies and its impact on performance without addressing the most prominent current challenges, environmental changes, and related policies. This study will also provide evidence on the extent to which internationalization, politics and gender diversity are related to CER practices. The general trends of prior research on this subject in the more developed countries highlighted the importance of the diversity of the board of directors, especially the board's internationalization, the board political connection and gender diversity to positive results with environmental responsibility practices. Consequently, the importance of this study came to highlight these trends in Jordan

1. THEORETICAL FRAMEWORK

1.1 Legitimacy Theory

Legitimacy is a critical attribute for organizations, as it refers to being recognized as legitimate and conforming to the norms and values of society. According to Tyler (2006), legitimacy is characterized by being placed within a framework that defines something as right and proper. Many studies in social accounting have adopted a legitimacy theory to explain the practices of CER. For instance, Gray et al, (1995) argues that legitimacy theory is the most widely used framework to explain disclosures related to the social and environmental behavior of organizations.

The legitimacy theory assumes that corporations are social entities whose existence depends on complying with the social contract. In other words, if societal expectations of an organization's behavior change adversely, the organization must change to maintain its legitimacy. Two main approaches have been identified to gain, maintain, or repair legitimacy: ensuring that an organization's activities are in line with societal expectations and disclosing these activities as being congruent with those expectations (Deegan, 2007).

The legitimacy theory supports the idea that companies should operate within the norms of acceptable behavior in the social system and engage in non-financial activities to maintain their legitimacy. Corporate responsibility can be seen as a management strategy to demonstrate social responsibility and avoid possible loss of their license to operate in society. In this sense, corporate environmental responsibility practices are viewed as proactive processes aimed at gaining approval from stakeholders and avoiding being charged with violations of societal norms (Guthrie & Parker, 1989).

1.2 Literature Review

1.2.1 Board Internationalization

Research indicates that decision-making involvement differs between the US and European boards, particularly in project-funded companies and CEO selection (Piekkari et al., 2015). In pursuit of improved performance and shareholder interests, companies may modify their governance systems by incorporating elements from foreign corporate governance systems and appointing foreign board members (Oxelheim & Randøy, 2003). Foreign board members are sought after by companies due to their potential effectiveness in evaluating company performance and expectations in foreign markets. Their participation in global communication with suppliers, buyers, and financiers enhances decision transparency, international legitimacy, and resource access. However, the integration of foreign board members faces obstacles, including institutional resistance and dominance of home country shareholders on the board (Piekkari et al., 2015). The presence of directors from countries with diverse backgrounds has been found to positively impact corporate social responsibility, including environmental practices (Khan et al., 2019). The cultural diversity within boards motivates firms to engage in CSR activities. However, some studies argue that foreign directors have no significant influence on CSR, and the impact of foreign institutional investors on CSR participation remains uncertain (Gulzar et al., 2019). From the preceding sections, the first main research hypothesis: H01 - Firms with internationalized boards are more likely to engage in CER practices.

1.2.2 Board Political Relations

Empirical research has highlighted the importance of aligning the board's expertise with the needs of the external environment, leading to improved business performance. Effective government linkages are often achieved by selecting directors with political and organizational competence, as their expertise and connections can benefit the company (Hillman, 2005). Companies adapt their external links based on changes in the external environment, particularly in response to shifting government regulations (Hillman et al., 2005). Companies may restructure their boards to meet the demands of the changing external environment. Being politically connected refers to the presence of shareholders or senior officials who have held political positions or have associations with politicians (Faccio, 2006). Such connections can provide access to significant human and social capital, which can benefit the companies they serve. While most companies aim to maintain political neutrality, the political affiliation of board members, whether appointed or elected, may have an influence (Yarbrough et al., 2017). The political loyalty of managers plays a role in shaping the company's stance. In light of these considerations, the second main research hypothesis is proposed: H02 - Firms with boards having political relations are more likely to engage in CER practices.

1.2.3 Gender Diversity

Gender diversity on corporate boards is essential for effective governance (Bear et al., 2010). Research has also highlighted the potential monitoring benefits of demographic differences, such as the gender of the CEO (Usman et al., 2020). However, the literature presents conflicting results regarding the relationship between board member gender diversity and a firm's financial outcomes. Nevertheless, the authors posit that gender diversity can have a positive impact on a firm's CSR performance for several reasons. Firstly, gender diversity brings a range of perspectives to board decision-making, leading to higher-quality decisions (Adams & Ferreira, 2009). Female board members, in particular, offer unique viewpoints and can suggest alternative organizational strategies and processes. Secondly, female board members can contri-

bute to the effective implementation of CSR activities (Bear et al., 2010). Their presence may encourage the firm to engage in charitable initiatives, which has been shown to positively influence corporate giving (Williams, 2003). Lastly, female board members represent the interests of female stakeholders, demonstrating that the organization values diverse perspectives. Their presence also signals the company's commitment to social responsibility, which is highly esteemed (Bear et al., 2010). In conclusion, female board members bring valuable contributions to a firm and can generate various benefits. Based on the preceding discussion, the third main hypothesis is proposed: H03 - Firms with gender diversity are more likely to engage in Corporate Environmental Reporting (CER).

1.2.4 Corporate Size:

The impact of corporate size on CER practices has been extensively studied, with literature highlighting it as a key internal characteristic affecting reporting practices. Studies emphasize that considering corporate size is essential in measuring CER, as it directly influences corporate reporting (Hackston & Milne, 1996). However, Ince (1998) criticized Ness and Mirza's (1991) study for neglecting the size effect on CER practices. Various approaches have been used to measure company size, including market capitalization (Hanafi, 2006), total assets (Yao et al., 2011), number of employees, or as a categorical variable (Hackston & Milne, 1996). Despite the different methodologies, prior research indicates that corporate size significantly influences CER practices, with larger firms more likely to disclose non-financial information compared to smaller companies. Hanafi (2006) argues that larger companies face greater public scrutiny and pressure, leading to higher information disclosure. The relationship between firm size and CER practices is mixed, with some studies showing a positive effect while others finding no significant association. However, the majority of studies suggest a dominant positive impact of corporate size on voluntary disclosure (e.g., Hackston & Milne, 1996; Hanafi, 2006; Yao et al., 2011). Conversely, studies like those conducted by Bayoud et al. (2012) found no significant relationship between firm size and CER practices.

1.2.5 Industry Type:

Many studies show that the practices of CER is closely associated with the type of corporate activity (Gray et al, 1995). However, it has also been argued that this level of voluntary reporting varies across different types of corporate activities (Hackston & Milne, 1996). For example, extractive industries are more likely to disclose information about their environmental impacts compared to companies in other industries, while the manufacturing sector is more likely to disclose information about community, safety, and health related to CSR categories (Hackston & Milne, 1996; Bayoud et al, 2012). Studies on the relationship between industry type and practices of CER have produced mixed results. Some studies have found a positive correlation (Hanafi 2006; Bayoud et al, 2012), while others have found a varying relationship (Ness & Mirza 1991). Industries operating in highly sensitive environments tend to disclose more information on environmental responsibility compared to industries operating in less sensitive environments (Hanafi 2006; Yao et al 2011). However, some studies have found no impact of the industry type on the CER (Ismail & Ibrahim 2009).

1.2.6 Corporate Profitability:

Research on the influence of corporate profitability on social responsibility disclosure has yielded diverse findings. For example, Murray et al. (2006) examined the relationship between profitability and disclosure patterns regarding environmental, community, employee, and customer issues among the top 100 UK companies over a 10-year span. Their results indicated that there are no direct association between corporate profit and CSR throughout the 10-year period. Despite these inconsistent findings, corporate profitability remains a significant factor that cannot be disregarded in voluntary disclosure decisions. Logically, firms with a strong financial standing, reflected in higher profits, are more inclined to engage in a greater number of voluntary disclosures as it can enhance both social and financial performance simultaneously (Cormier et al., 2005). As Ullman (1985, p.553) explains, "Economic performance determines the relative weight of a social demand and the attention it receives from top decision-makers. In periods of low profitability and high debt, economic demands will take precedence over social demands."

2. RESEARCH METHODS

2.1 Content Analysis Method

Content analysis is widely defined in accounting literature as a method for collecting and interpreting the contents of texts, including written, visual, and audible forms, using measures such as word count, sentence count, and page count (Gray et al, 1995). Despite the variety of methods in older literature, they all involve a shared commitment to ethical practices towards the society and stakeholders (Kuo et al 2012). According to Weber (1990), researchers are best equipped to determine the most appropriate methods for analyzing their data based on their understanding of the substantive problems in their studies. For this reason, using sentences as a unit of measurement for corporate information is seen as a straightforward and practical way to collect and analyze text (Hackston & Milne, 1996). Content analysis-based disclosure checklists are designed to assess whether information has been disclosed and how it was disclosed.

2.2 Sample and Data

The goal of this research is to determine the level of corporate environmental initiatives by analyzing the annual reports of industrial corporations listed on the ASE. The primary data source will be these corporations' annual reports. Specifically, this paper chose to analyze the annual reports of listed industrial sector companies for the period of 2012-2021 as an appropriate sample. This sector was selected because it is considered the largest sector with a negative impact on the environment and society. Thus, it is logical for the researcher to expect that these companies will have more environmental initiatives outlined in their annual reports than companies from other sectors.

2.3 Research Model

Properly identifying the available data type is crucial for researchers to select the right statistical model and data analysis technique.. In this paper, the data belongs to the panel data category, collected across various Jordanian industrial sectors from 2012 to 2021. Therefore, the panel data regression model is the most suitable choice. The next step involves choosing a statistical software package, commonly E-Views for traditional accounting disclosure research. Considering the objective of exploring the relationship between independent, dependent, and control variables, a statistical analysis approach is deemed appropriate. The following statistical models represent this relationship.

$(CER)_{it} = a_i + \beta 1(International)_{it} + \beta 2(Political)_{it} + \beta 3(diversity)_{it} + u_{it} + \varepsilon_{it}$.....

$(CER)_{it} = a_i + \beta 1(International)_{it} + \beta 2(Political)_{it} + \beta 3(diversity)_{it} + (size)_{it} + (Industry)_{it} + (Profit)_{it} + u_{it} + \varepsilon_{it}$....

Where:

CERit =measured by scoring (1) if item is disclosed and (0) if not.
ai = the constant measure
β1= the percentage of board members who hold a foreign nationality.(Internationalization/size)
β2= quantified as the proportion of board members with political experience.(Political relations/size)
β3= calculated as the proportion of female members on the corporate board. (Gender diversity/size).
β4= measured by total assets
β5= measured by type of subsector
β6)= measured by return on equity
uit = Error term.
εit = Random error term.

3. EMPIRICAL RESULTS

3.1 Descriptive Statistics

The following table presents the descriptive statistics for the study variables of 33 companies for the period of ten years from 2012 to 2021.

Table 1. Descriptive Statistics

Descriptive Statistics	*DV*	*IVs*			*COVs*		
	CER	*Politacal%*	*International%*	*Gender%*	*Size*	*ROA%*	*Industry*
Mean	0.299	0.116	0.170	0.060	44353	-0.0013	4.455
Maximum	0.647	0.400	1.000	0.500	993313	0.3602	8.000
Minimum	0.088	0.000	0.000	0.000	-481199	-1.0311	1.000
Std. Dev.	0.112	0.098	0.180	0.093	114872	0.1316	2.261
Skewness	0.315	0.589	1.703	2.084	3.966	-3.1208	0.091
Kurtosis	2.519	2.604	7.204	8.531	30.793	23.074	1.650
Jarque-Bera	8.65	21.24	402.4	659.7	11486.6	6076.2	25.52
Probability	0.013	0.000	0.000	0.000	0.000	0.000	0.000

Source: own

Table 1 presents the descriptive analysis of the dataset, which includes a dependent variable (CER) and three independent variables (Political links, International, and Gender), along with three control variables. The "Mean" row displays the average values of the variables, such as the mean value of the dependent variable (CER) being 0.299 and the mean value of Political links being 0.116. The "Maximum" and "Minimum" rows indicate the highest and lowest values observed in the dataset. For instance, the highest CER value is 0.647, while the lowest is 0.088. The "Std. Dev." row represents the standard deviation of each variable, which measures the spread of values around the mean. For example, the Std-Dev of CER is 0.112.

The "Skewness" and "Kurtosis" rows provide information about the shape of the distribution for each variable. Skewness measures the asymmetry of the distribution, while kurtosis measures its peakedness. For instance, the Gender variable exhibits a skewness of 2.084, indicating a highly right-skewed distribution, and the percentage of international has a kurtosis of 7.204, indicating a highly peaked distribution. The "Jarque-Bera" row presents the results of a statistical test that assesses the normality of each variable's distribution. A higher Jarque-Bera value suggests a greater deviation from normality. For example, the Gender variable has a Jarque-Bera value of 402.42, indicating a significant departure from normality. The "Probability" row displays the p-values associated with the Jarque-Bera test. A p-value below 0.05 is typically considered significant, indicating a non-normal distribution. For example, the p-value for Political links is below 0.05, indicating a significant deviation from normality.

Panel data analysis typically employs three main approaches: Pooled Model, Fixed Model, and Random Model. To ensure reliable results, the most suitable model will be selected using the Hausman test, which is a commonly used method for model selection.

Table 2. Hausman Test

Test Summary	*Chi-Sq. Statistic*	*Chi-Sq. d.f.*	*Prob.*
Cross-section random	4.857009	3	0.1826
Periods: 10 (2012 2021) Cross-sections: 33;Total panel observations: 330			

Source: own

As shown in Table 2, the Hausman test was applied to select the most appropriate model. The test results indicate that the value of the chi-Sq distribution is not significant, with a value of 0.1826. This means that the intercept (ai) is uncorrelated with the explanatory variables (Xit), leading to the conclusion that the random-effects model is the more valuable option for analyzing the panel data in this research, compared to the fixed and pooled models. Given to this result, it is crucial to analyze the relationships between the CER and independents variables using random model.

3.2 Statistical Analysis

Based on the previous section, it is evident that the most suitable regression model for the panel data is the "random model." Consequently, two random models have been constructed. Model 1 examines the correlation between board characteristics (i.e., political relations (IV1), internationalization (IV2), and gender diversity (IV3)) and CER practices in Jordan. Model 2 tests the same relationship while incorporating control variables (i.e., size (COV1), industry (COV2), and profitability (COV3)). The key findings of these models are presented in Tables 3 and 4, summarizing the results obtained from the random models with and without control variables, respectively.

Table 3. Result on Random-Effect Model 1

Variable	*Coefficient*	*Std. Error*	*t-Statistic*	*Prob.*
C	0.228047	0.016419	13.88930	0.0000
IV1	0.316978	0.051964	6.099926	0.0000
IV2	0.117318	0.036970	3.173322	0.0017
IV3	0.267753	0.065378	4.095464	0.0001
Effects Specification			S.D.	Rho
Cross-section random			0.082992	0.6588
Idiosyncratic random			0.059728	0.3412
R-squared	0.253047	Mean dependent var		0.066454
Adjusted R-squared	**0.246174**	S.D. dependent var		0.068988
S.E. of regression	0.059898	Sum squared resid		1.169613
F-statistic	**36.81334**	Durbin-Watson stat		0.967174
Prob(F-statistic)	**0.000000**			

Source: own

Table 4. Result on Random-Effect Model 2

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.170805	0.212782	0.802722	0.4227
IV1	0.316517	0.051217	6.179922	0.0000
IV2	0.118228	0.041215	2.868573	0.0044
IV3	0.288824	0.060377	4.783667	0.0000
LOG(COV1)	0.001902	0.016109	0.118046	0.9061
COV2	0.015022	0.028778	0.522016	0.6020
COV3	0.018175	0.005601	3.245101	0.0013
Effects Specification			S.D.	Rho
Cross-section random			0.069529	0.5741
Idiosyncratic random			0.059890	0.4259
R-squared	0.271864	Mean dependent var		0.078703
Adjusted R-squared	**0.258338**	S.D. dependent var		0.070158
S.E. of regression	0.060420	Sum squared resid		1.179125
F-statistic	**20.09972**	Durbin-Watson stat		0.962435
Prob(F-statistic)	**0.000000**			

Source: own

Table 3 reports the results of a random model regression analysis, with one dependent variable (CER) and three independent variables representing three characteristics of firm board, political relations, internationalization, and gender diversity. Similarly, Table 4 displays random model regression analysis results for the dependent and independent variables with the presence of three additional control variables; size, industry, and profitability. Both suggested models were statistically significant; (F = 36.81, p< .0001) for Model-1 and (F = 20.10, p< .0001) for Model-2, suggesting their validity.

Additionally, the adjusted R^2 *value* increased from (0.246) in Model-1 to (0.258) in Model-2. This implies that the Model-1 and Model-2 explain approximately %25 and %26 respectively of the variability of the practices of CER in industrial companies. This slightly increase in adjusted R^2 *value* suggests that Model-2 is marginally better at predicting CER. Statistically, the *adjusted* R^2 *value* is used to measure the proportion of variance in the dependent variable that is explained by the independent variables in a regression. *Durbin-Watson* statistic tests for autocorrelation in the residuals, with values between 0.962 and 0.967 indicating no significant autocorrelation in both models.

Furthermore, both Table.3 and Table.4 report the *estimated coefficients*, *t-statistics*, and probabilities for each of the variables included in the models. The *estimated coefficients* represent the expected change in the CER for a one-unit increase in each independent variable, holding all other variables constant. For example, a one-unit increase in political relations is associated with an expected increase of 0.317 in the CER in both models. The *t-statistics* measure the size of each coefficient relative to its standard error, with larger absolute values indicating a stronger relationship between the variables. The probability *value* indicate the statistical significance of each independent or control variable, with values less than 0.05 typically considered statistically significant. In this case, all independent variables in Model-1 and 2 (i.e., political relations, internationalization, and gender diversity) are statistically significant because their *probability values* are all less than 0.05. Results presented in Table.4 reveal that Model-2 demonstrates some minor differences in the independent variables with the presence of the three control variables compared to Model-1 without the control variables. Specifically, the strongest positive contribution of board characteristics on CER practices at the 0.05 level is from political relations (t = 6.10; p < 0.001 in Model-1 and t = 6.18; p < 0.001 in Model-2).

Regarding the control variables in Model-2, the coefficients for both firm size (COV1) and industry type (COV2) are not statistically significant at the 0.05 level (p = 0.906, and 0.602 respectively). Only firm profitability (COV3) has a positive and statistically significant coefficient value (p = 0.0013), indicating a positive and significant association with the CER Practices.

4. DISCUSSION

Based on the outcomes derived from the random effect models, Tables 3 and 4 provide evidence that board internationalization, political relations, and gender diversity significantly influence corporate environmental responsibility (CER) practices among Jordanian firms at a significance level of less than 0.05. Specifically, the coefficient of internationalization (β = 0.316978, $p < 0.05$) in Model 1 demonstrates a statistically significant and positive relationship, which aligns with previous studies (Farooque et al., 2022; Setiawan et al., 2021) that also found a positive correlation between internationalization and CER practices. These findings validate the first hypothesis (H1) and support the argument proposed by Oxelheim and Randøy (2003) regarding the adoption of an appropriate mix of experience and cultures by successful companies to ensure efficient practices. This finding can be attributed to the legitimacy theory, suggesting that foreign managers prioritize environmental responsibilities to enhance company value and reputation (Setiawan et al., 2021).

Furthermore, the results from Tables 3 reveal a statistically significant influence of political relations on CER practices among Jordanian firms at a 99% confidence level. This supports the second hypothesis (H2) and is consistent with previous research (Qian & Chen, 2021; Shaheen et al., 2021) indicating that firms with political relations tend to engage in more CER practices. The significant influence of government regulatory pressures on CER is evident, indicating the desire of Jordanian political members to be pioneers

in implementing CER policies by adhering to government guidelines on environmental activities (Huang & Kung, 2010).

Moreover, Table 3 demonstrates a significant and positive relationship between gender diversity and CER practices ($\beta = 0.267753$, $p < 0.05$), supporting hypothesis H1. This finding is in line with previous studies (Farooque et al., 2022; Shaheen et al., 2021) that have identified a positive correlation between CER practices and gender diversity. Female board members bring distinct values and concerns related to CER practices, effectively managing the public perception and legitimation process of firms through enhanced awareness and adoption of CER practices (Bear et al., 2010).

However, the results from the second random effects model, as presented in Table 4, indicate an insignificant association between firm size and type of industry with CER practices among Jordanian industrial firms. This contradicts previous findings (Welbeck et al., 2017; Hackston & Milne, 1996) that consistently found firm size and industry type to explain variations in CER practices. In contrast, the analysis reveals that corporate profitability is the most crucial factor in explaining CER practices among Jordanian industrial firms, consistent with prior research (Hanafi, 2006). Studies suggest that companies with higher profits are more likely to disclose their environmental impact, as financially stable firms possess the necessary economic resources for such disclosures (Hackston & Milne, 1996; Cormier et al., 2005).

Based on these findings, it can be inferred that the impact of global crises, such as the Arab Spring, the COVID-19 pandemic, and the war in Ukraine, has affected the Jordanian economic environment, leading to results that deviate from previous studies regarding the significance of firm size and industry type. In a developing economic context like Jordan, factors such as profitability hold more significance compared to company size, type, and age. It is worth noting that companies operating in developing countries often prioritize profitability, as perceived by their shareholders, as a central aspect of their business strategy.

CONCLUSION

In this study, we examined the level of environmental reporting practices (CER) in Jordanian industrial companies and the factors that influence them. Our analysis of panel data revealed a relatively low level of CER practices, with an average score of 0.299 from 2012 to 2021. Through statistical analysis using random effect models, we investigated the impact of board characteristics on CER practices and tested several hypotheses. Our findings indicate that board characteristics, such as internationalization, political relations, and gender diversity, have a significant influence on corporate disclosure. However, factors like corporate size and industry type did not show significant associations. Notably, profitability emerged as a statistically significant factor in the second random effect model. In conclusion, our empirical results highlight the crucial role of board characteristics in determining the level of CER practices in Jordanian industrial companies.

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